

FISCAL YEAR 1989



**JUSTIFICATION OF APPROPRIATION
ESTIMATES FOR COMMITTEE ON
APPROPRIATIONS**

ENVIRONMENTAL PROTECTION AGENCY

1989 Budget Estimate

Table of Contents

	<u>Page</u>
<u>SUBJECT INDEX</u>	8
<u>SUMMARY</u>	S-1
<u>AIR</u>	A-1
RESEARCH & DEVELOPMENT	
Air Quality Research.....	A-8
Scientific Assessment.....	A-15
Monitoring Systems and Quality Assurance.....	A-16
Health Effects.....	A-17
Environmental Engineering and Technology.....	A-18
Environmental Processes and Effects.....	A-19
Characterization, Transport and Fate.....	A-20
Stratospheric Modification.....	A-21
ABATEMENT & CONTROL	
Air Quality & Stationary Source Planning & Standards.....	A-24
Emission Standards & Technology Assessment.....	A-27
Pollutant Strategies & Air Standards Development.....	A-28
State Program Policy Guidelines & Regulations Development.....	A-30
Mobile Source Air Pollution Control & Fuel Economy.....	A-32
Emission Standards, Technical Assessment & Characterization.....	A-34
Testing, Technical & Administrative Support.....	A-36
Emissions & Fuel Economy Compliance.....	A-37
State Programs Resource Assistance.....	A-40
Control Agency Resource Supplementation (Section 105 Grants).....	A-42
Training.....	A-45
Air Quality Management Implementation.....	A-46
Trends Monitoring & Progress Assessment.....	A-51
Ambient Air Quality Monitoring.....	A-53
Air Quality & Emissions Data Management & Analysis	A-55
ENFORCEMENT	
Stationary Source Enforcement.....	A-59
Mobile Source Enforcement.....	A-64
<u>WATER QUALITY</u>	WQ-1
RESEARCH & DEVELOPMENT	
Water Quality Research.....	WQ-10
Scientific Assessment.....	WQ-15
Monitoring Systems and Quality Assurance.....	WQ-16
Health Effects	WQ-17
Environmental Engineering and Technology.....	WQ-18
Environmental Processes and Effects.....	WQ-19
Great Lakes.....	WQ-20

Table of Contents

(Continued)

<u>WATER QUALITY (Continued)</u>	<u>Page</u>
ABATEMENT & CONTROL	
Water Quality and Grants Program Management.....	WQ-22
Water Quality Management.....	WQ-25
Great Lakes Program.....	WQ-26
Chesapeake Bay Program.....	WQ-28
Effluent Standards & Guidelines.....	WQ-31
Grants Assistance Programs.....	WQ-34
Clean Lakes Program.....	WQ-35
Control Agency Resource Supplementation (Section 106).....	WQ-36
Water Quality Strategies Implementation.....	WQ-38
Dredge & Fill.....	WQ-42
Ocean Disposal Permits.....	WQ-44
Environmental Emergency Response & Prevention.....	WQ-46
Standards & Regulations.....	WQ-47
Water Quality Monitoring & Analysis.....	WQ-49
Coastal Environment Management.....	WQ-51
Water Quality Monitoring & Analysis.....	WQ-54
Municipal Source Control.....	WQ-57
Municipal Waste Treatment Facility Construction.....	WQ-59
Waste Treatment Operations & Maintenance.....	WQ-61
ENFORCEMENT	
Water Quality Enforcement.....	WQ-64
Water Quality Permit Issuance.....	WQ-69
 <u>DRINKING WATER</u>	
	DW-1
RESEARCH & DEVELOPMENT	
Drinking Water Research.....	DW-9
Scientific Assessment.....	DW-14
Monitoring Systems and Quality Assurance.....	DW-15
Health Effects.....	DW-16
Environmental Engineering and Technology.....	DW-17
Environmental Processes and Effects.....	DW-18
ABATEMENT & CONTROL	
Drinking Water Criteria, Standards & Guidelines.....	DW-20
Criteria, Standards & Guidelines.....	DW-21
Drinking Water State Program Resource Assistance.....	DW-24
Public Water Systems Supervision Program Grants.....	DW-25
Underground Injection Control Program Grants.....	DW-27
Special Studies & Demonstrations.....	DW-28
Drinking Water Management.....	DW-30
Public Water Systems Supervision Program Assistance.....	DW-32
Underground Injection Control Program.....	DW-34
Ground-Water Protection.....	DW-37
ENFORCEMENT	
Drinking Water Enforcement.....	DW-42
 <u>HAZARDOUS WASTE</u>	
	HW-1
RESEARCH & DEVELOPMENT	
Hazardous Waste Research.....	HW-8
Scientific Assessment.....	HW-14
Monitoring Systems and Quality Assurance.....	HW-15

Table of Contents

(Continued)

HAZARDOUS WASTE (Continued)	Page
Health Effects.....	HW-16
Environmental Engineering and Technology.....	HW-17
Environmental Processes and Effects.....	HW-18
Integrated Hazardous Waste Research.....	HW-19
ABATEMENT & CONTROL	
Waste Management Regulations, Guidelines and Policies.....	HW-21
Regulations, Guidelines & Policies - Hazardous Waste.....	HW-25
RCRA Regulatory Program - Office of Air & Radiation.....	HW-27
RCRA Regulatory Program - Office of Water.....	HW-27
Regulations, Guidelines & Policies - Underground Storage Tanks...	HW-30
Financial Assistance.....	HW-32
Hazardous Waste Management Financial Assistance to States.....	HW-33
Hazardous Waste Initiative Grants.....	HW-35
Underground Storage Tanks State Grants.....	HW-36
Waste Management Strategies Implementation.....	HW-37
Hazardous Waste Management Regulatory Strategies Implementation..	HW-39
Emergency Planning/Community Right-to-know - Title III.....	HW 42
ENFORCEMENT	
Hazardous Waste Enforcement.....	HW-45
 <u>PESTICIDES</u>	 P-1
RESEARCH & DEVELOPMENT	
Pesticides Research.....	P-8
Scientific Assessment.....	P-14
Monitoring Systems and Quality Assurance.....	P-14
Health Effects.....	P-15
Environmental Engineering and Technology.....	P-16
Environmental Processes and Effects.....	P-17
ABATEMENT & CONTROL	
Registration, Special Registration & Tolerances.....	P-20
Registration.....	P-22
Special Registration.....	P-24
Tolerances.....	P-25
Generic Chemical Review.....	P-27
Generic Chemical Review.....	P-28
ENFORCEMENT	
Pesticides Enforcement.....	P-32
Pesticides Enforcement.....	P-35
Pesticides Enforcement Grants.....	P-36
Pesticides Certification & Training.....	P-37
Pesticides Certification & Training Grants.....	P-38
 <u>RADIATION</u>	 R-1
RESEARCH & DEVELOPMENT	
Radiation Research.....	R-7
Monitoring Systems and Quality Assurance.....	R-10
Environmental Engineering and Technology.....	R-11
ABATEMENT & CONTROL	
Radiation Criteria, Standards & Guidelines.....	R-14
Radiation Program Implementation.....	R-18
Radiation Environmental Impact Assessment.....	R-21
Radon Action Program.....	R-25
Radon Action Program Implementation.....	R-28

Table of Contents

(Continued)

	<u>Page</u>
<u>INTERDISCIPLINARY</u>	I-1
RESEARCH & DEVELOPMENT	
Intermedia Programs.....	I-7
Scientific Assessment.....	I-13
Technical Information and Liaison.....	I-13
Quality Assurance Management.....	I-14
Exploratory Research Core Program.....	I-15
Reduction of Uncertainties in Risk Assessment (RURA).....	I-16
ABATEMENT & CONTROL	
Environmental Review and Coordination.....	I-19
Interdisciplinary Training Grants.....	I-23
ENFORCEMENT	
Enforcement Policy & Technical Support.....	I-26
Technical Support - Office of Enforcement & Compliance Monitoring	I-29
Enforcement Policy & Operations.....	I-30
Criminal Investigations Program.....	I-32
 <u>TOXIC SUBSTANCES</u>	 TS-1
RESEARCH & DEVELOPMENT	
Toxics Substances Research.....	TS-8
Scientific Assessment.....	TS-14
Monitoring Systems and Quality Assurance.....	TS-15
Health Effects.....	TS-16
Environmental Engineering and Technology.....	TS-17
Environmental Processes and Effects.....	TS-19
ABATEMENT & CONTROL	
Toxic Substances Financial Assistance.....	TS-21
Asbestos-in-Schools Loans and Grants.....	TS-23
Asbestos-in-Schools Program Administration.....	TS-24
Asbestos-in-Schools Contractor and Inspector Certification.....	TS-25
Toxic Substances Strategies.....	TS-26
Chemical Testing.....	TS-29
Existing Chemical Review.....	TS-30
New Chemical Review.....	TS-32
OPTS - Title III.....	TS-34
ENFORCEMENT	
Toxic Substances Enforcement.....	TS-36
Toxic Substances Enforcement.....	TS-39
Toxic Substances Enforcement Grants.....	TS-41
OPTS Enforcement - Title III.....	TS-42
 <u>ENERGY</u>	 E-1
RESEARCH & DEVELOPMENT	
Multi-Media Energy.....	E-5
Acid Rain.....	E-10
Environmental Engineering and Technology.....	E-11
Environmental Processes and Effects.....	E-12

Table of Contents

(Continued)

MANAGEMENT & SUPPORT

MS-1

PROGRAM MANAGEMENT

Program Management.....	MS-8
Program Management - Air & Radiation.....	MS-12
Program Management - Water.....	MS-13
Program Management - Enforcement & Compliance Monitoring.....	MS-13
Program Management - External Affairs.....	MS-14
Program Management - Pesticides & Toxic Substances.....	MS-15
Program Management - General Counsel.....	MS-15
Program Management - Research & Development.....	MS-16
Program Management - Solid Waste & Emergency Response.....	MS-17

AGENCY MANAGEMENT

Office of the Administrator/Executive Offices.....	MS-19
Immediate Office of the Administrator.....	MS-24
Office of Regional Operations.....	MS-25
Office of Executive Support.....	MS-25
Administrator's Representation Fund.....	MS-26
Office of International Activities.....	MS-26
Office of Civil Rights.....	MS-27
Science Advisory Board.....	MS-28
Office of Administrative Law Judges.....	MS-29
Office of Small & Disadvantaged Business Utilization.....	MS-29
Office of Inspector General.....	MS-31
Office of Inspector General	MS-32
Office of General Counsel.....	MS-34
General Counsel.....	MS-35
Office of External Affairs.....	MS-37
Office of Legislative Analysis.....	MS-41
Office of Congressional Liaison.....	MS-42
Office of Public Affairs.....	MS-42
Office of Community and Intergovernmental Relations.....	MS-43
Office of Federal Activities.....	MS-43
Office of Policy, Planning & Evaluation.....	MS-45
Program Management - Policy, Planning & Evaluation.....	MS-49
Integrated Environmental Management Program.....	MS-49
Office of Policy Analysis.....	MS-50
Office of Standards & Regulations.....	MS-52
Office of Management Systems & Evaluation.....	MS-53
Office of Administration & Resources Management.....	MS-55
Program Management - Administration.....	MS-60
Financial Management - Headquarters.....	MS-61
Office of the Comptroller.....	MS-61
Contracts & Grants Management.....	MS-62
Personnel & Organization Services.....	MS-63
Facilities & Management Services.....	MS-64
Information Systems & Services.....	MS-65
Administrative Management - Title III.....	MS-65
Office of Human Resources Management.....	MS-66

REGIONAL MANAGEMENT

Regional Management.....	MS-69
Resource Management - Regions	MS-72
Financial Management - Regions.....	MS-73
Personnel Management - Regions.....	MS-73
Administrative Management - Regions.....	MS-74
Regional Management.....	MS-75
Regional Counsel.....	MS-75
Planning, Evaluation & Analysis - Regions.....	MS-76

Table of Contents

(continued)

MANAGEMENT & SUPPORT (Continued)

SUPPORT COSTS

Support Costs.....	MS-79
Professional Training.....	MS-82
Nationwide Support Services.....	MS-82
Headquarters Support Services.....	MS-83
Regional Support Services.....	MS-83
Automated Data Processing Support Costs.....	MS-84
Automated Data Processing Support - Title III.....	MS-85
Lab Support - Research & Development.....	MS-85
Lab Support - Air & Radiation.....	MS-86
Lab Support - Pesticides & Toxic Substances.....	MS-86

BUILDINGS & FACILITIES

BF-1

Buildings & Facilities.....	BF-4
New Facilities.....	BF-5
Repairs & Improvements.....	BF-6

CONSTRUCTION GRANTS

CG-1

Construction Grants.....	CG-2
--------------------------	------

SUPERFUND

SF-1

RESEARCH AND DEVELOPMENT

Hazardous Substance Research.....	SF-10
Scientific Assessment.....	SF-16
Monitoring Systems and Quality Assurance.....	SF-17
Health Effects.....	SF-18
Environmental Engineering and Technology.....	SF-19
Environmental Processes and Effects.....	SF-21
Exploratory Research.....	SF-22
Technical Information and Liaison.....	SF-23

HAZARDOUS SUBSTANCE RESPONSE

Hazardous Substance Response.....	SF-25
Hazardous Spill & Site Response.....	SF-26
Hazardous Substance Response - Support.....	SF-29
Hazardous Substance Response - Office of Water.....	SF-31
Hazardous Substance Response - Office of Air and Radiation.....	SF-33
Hazardous Substance Response - Interagency.....	SF-34
Department of Health & Human Services.....	SF-38
United States Coast Guard.....	SF-39
Department of Justice.....	SF-40
Federal Emergency Management Agency.....	SF-40
National Oceanic & Atmospheric Administration.....	SF-41
Department of the Interior.....	SF-41
Occupational Safety & Health Administration.....	SF-42

ENFORCEMENT

Hazardous Substance Response - Enforcement.....	SF-44
Hazardous Substance Technical Support - Office of Enforcement & Compliance Monitoring.....	SF-48

Table of Contents

(Continued)

SUPERFUND (Continued)

Hazardous Substance Technical Enforcement.....	SF-49
Hazardous Substance Legal Enforcement.....	SF-51
Hazardous Substance Criminal Investigations.....	SF-53
MANAGEMENT & SUPPORT	
Hazardous Substance Management and Support.....	SF-56
Hazardous Substance Financial Management - Headquarters.....	SF-63
Hazardous Substance Financial Management - Regions.....	SF-64
Hazardous Substance Administrative Management - Headquarters.....	SF-65
Hazardous Substance Administrative Management - Regions.....	SF-65
Hazardous Substance Support Services - Headquarters.....	SF-66
Hazardous Substance Support Services - Regions.....	SF-67
Hazardous Substance Computer Services.....	SF-67
Hazardous Substance Legal Services - Headquarters.....	SF-68
Hazardous Substance Legal Services - Regions.....	SF-68
Hazardous Substance-Office of the Inspector General.....	SF-69
Hazardous Substance-Office of Policy, Planning & Evaluation.....	SF-70
Hazardous Substance-Office of the Comptroller.....	SF-71
Hazardous Substance-Office of External Affairs.....	SF-72
Hazardous Substance-Office of Research and Development- Lab Support.....	SF-72

LEAKING UNDERGROUND STORAGE TANKS

L-1

RESEARCH AND DEVELOPMENT

LUST Technical Support.....	L-6
-----------------------------	-----

Environmental Engineering and Technology.....	L-7
---	-----

ABATEMENT & CONTROL

LUST Guidelines and Implementation.....	L-10
---	------

ENFORCEMENT

LUST Enforcement-Office of Enforcement & Compliance Monitoring.....	L-14
---	------

MANAGEMENT & SUPPORT

Management & Support.....	L-18
---------------------------	------

Policy & Analysis - Office of Policy, Planning and Evaluation.....	L-20
---	------

Administrative Management - Office of Administration and Resources Management.....	L-21
---	------

Legal Services - Office of General Counsel.....	L-21
---	------

SPECIAL ANALYSES

SA-1

ENVIRONMENTAL PROTECTION AGENCY

1989 Budget Estimate

Subject Index by Media

AIR

Page

Air Quality Monitoring.....	A-16,17,53
Air Toxics.....	A-4,15-17,19,21,27, 29,43
Compliance Monitoring Inspections.....	A-43,62
Emission Waivers.....	A-66
Enforcement	A-61,66
Fuel Economy.....	A-37
Fuel Programs.....	A-36,66
Global Climate Change.....	A-22
Health Effects Institute.....	A-17
Indoor Air.....	A-13-19,29
Inspection and Maintenance Program.....	A-35
In-use Emission Factors.....	A-35
Motor Vehicle Emissions Laboratory.....	A-36
Municipal Waste Incineration.....	A-27
National Ambient Air Quality Standards (NAAQS).....	A-15-18,20,21,28
National Crop Loss Assessment Network (NCLAN).....	A-20
National Emission Standards for Hazardous Air Pollutants (NESHAPs).....	A-26
New Source Performance Standards (NSPS).....	A-16,19,20,21,26
Ozone.....	A-3,15,19,20,22,30, 35,42,48
Particulate Matter.....	A-3,16,20,30,43,48, 53,61,66
Prevention of Significant Deterioration.....	A-30,42
Recall of In-Use Vehicles.....	A-66
Regional Programs.....	A-48,53,61
Selective Enforcement Audits.....	A-60
State Grants.....	A-42
State Implementation Plans (SIPs).....	A-16,19,20,21,30, 42,48
Stationary Source Enforcement.....	A-61
Stratospheric Ozone Depletion.....	A-22,29
Tampering and Fuel Switching.....	A-67

WATER QUALITY

Advanced Wastewater Treatment Reviews.....	WQ-60,61
Aquatic Life Research.....	WQ-19
Biomonitoring.....	WQ-16,36,70,71
Chesapeake Bay Program.....	WQ-28-30
Clean Lakes.....	WQ-35,47
Coastal Environment Management.....	WQ-51-54
Construction Grants Management.....	WQ-59-62;CG-3,4,5
Corps of Engineers.....	WQ-42-45,59-61
Effluent Guidelines.....	WQ-32,33
Emergency Response.....	WQ-46,47
Enforcement.....	WQ-7,65-68

Subject Index by Media

(Continued)

WATER QUALITY (Continued)

Page

Great Lakes Program.....	WQ-20,26-28
Indian Tribes.....	WQ-25,26,36,37,42, 47,60,61,71
International Pollution Control Agreements.....	WQ-3,20,24,26,27,41
Marine Outfalls - Section 301(h).....	WQ-51-54
National Estuary Program.....	WQ-4,51-54
Near Coastal Waters.....	WQ-4,51,52
Nonpoint Sources.....	WQ-5,25-30,36
NPDES Permits.....	WQ-36,37,52,65-67, 70-72
Ocean Disposal.....	WQ-4,5,44-46
Ocean Disposal Fee.....	WQ-5,44,45
Operations and Maintenance.....	WQ-61,62
Operator Training.....	WQ-61,62
Pretreatment.....	WQ-6,18,36,37,65-68 70-72
Quality Assurance Fees.....	WQ-16
Sludge Management.....	WQ-17,18,36,37,47,48, 61,71,72
State Clean Water Strategies.....	WQ-3,4,25,37,42,47, 55,56
State Grants.....	WQ-24-26,35-37
State Revolving Funds.....	WQ-6,59-61;CG-3-5
Toxic Pollutant Controls.....	WQ-5-6,15-20,27-30, 32,33,36,37,47, 48,55,56,60,70-72
Wastewater Treatment Compliance.....	WQ-61,62,65-67
Water Quality Permit Issuance.....	WQ-36,37,70-72
Wetlands (Section 404).....	WQ-4,19,42-44

DRINKING WATER

Enforcement.....	DW-42-45
Epidemiology.....	DW-16
Ground-Water Activities.....	DW-3,5,37-40
Ground-Water Research Activities.....	DW-6,15,18
Health Advisories.....	DW-4,12,15,17
Health Effects.....	DW-3,16,21
Indian Tribes.....	DW-4,25-28,32-36, 38-40,43,44
National Primary Drinking Water Regulations.....	DW-3,4,15,16,21-23, 26,33,34
National Rural Water Association.....	DW-28,29
Public Water Systems Supervision.....	DW-4,21,32,34
Quality Assurance Fees.....	DW-15,16
Small Systems Engineering Research.....	DW-17
State Grants.....	DW-25-29
Underground Injection Control.....	DW-3,5,18,21-23,32, 34-36
Wellhead Protection.....	DW-3,5,18,38,39,40

Subject Index by Media

(Continued)

HAZARDOUS WASTE

Page

Air Emission Standards.....	HW-27
Community Right-to-know.....	HW-43
Compliance Inspections.....	HW-47,48
Corrective Action.....	HW-25,28,46,48
Dioxin.....	HW-13,14,19,26
Domestic Sewage Study.....	HW-28
Enforcement.....	HW-29,34,46
Financial Responsibility.....	HW-26,30
Ground Water Monitoring.....	HW-16,26
Hazardous Spills Research.....	HW-15,18
Incineration.....	HW-13,14,16,17,25,41
Innovative/Alternatives Technologies.....	HW-13,17
Land Banning Activities.....	HW-25-27,39
Land Disposal Facilities.....	HW-13,17,25,26
Listing/Delisting.....	HW-13,16,25,26
Mining Waste.....	HW-25,26,39,40
Monitoring Methods.....	HW-15
Municipal Waste Incineration.....	HW-13,14,16,17,46
Municipal Wastewater Lagoon Study.....	HW-29
Permitting.....	HW-26,39
Policy and Guidance.....	HW-25,26,40,46
POTW Requirements.....	HW-28
Quality Assurance.....	HW-14,15
Regulations Development.....	HW-25-28
Reports to Congress.....	HW-26,29,44
Risk Assessment.....	HW-13,14,18,25
State Authorizations.....	HW-25,26,39,40
State Grants.....	HW-33-36
Subtitle D Criteria.....	HW-25,40
Surface Impoundments.....	HW-28,40
Title III.....	HW-40
Treatment Standards.....	HW-25,26
Tufts University.....	HW-19
UIC Requirements (RCRA).....	HW-28
Underground Storage Tanks-Regulations and Guidelines.....	HW-30
Underground Storage Tanks Grants.....	HW-36
Waste Characterization.....	HW-16,47
Waste Minimization.....	HW-26,39

PESTICIDES

Biotechnology.....	P-5,6,13,16,17,23-25
Certification and Training.....	P-32-35,37,38
Data Call-In.....	P-28-30
Disposal.....	P-3-5,16,17,28,30
Emergency Exemptions.....	P-3,6,22,24,25
Endangered Species.....	P-4,23,35
Enforcement.....	P-4-6,32-38
Experimental Use Permit.....	P-3,6,22,24,25
Farmworker Safety.....	P-5,23,35
Ground Water.....	P-3-5,23,29,30,35
Lab/Data Integrity.....	P-36

Subject Index by Media

(Continued)

PESTICIDES (Continued)

Page

Nebraska and Colorado Enforcement Program.....	P-35,38
Registration.....	P-3,4,6,20-25
Registration Fees.....	P-23,24
Registration Standards.....	P-4,6,28-30
Reregistration.....	P-3,4,6,28-30
Risk Assessment.....	P-3,5,14,16,17
Special Review (RPAR).....	P-4,6,28-30
State Grants.....	P-4,5,32-38
Tolerances.....	P-3,6,20-22,25,26

RADIATION

Airborne Radionuclide Standards.....	R-15,19
Environmental Radiation Ambient Monitoring System.....	R-23
Nevada Nuclear Test Site.....	R-10,11
Radiological Emergency Response Plans.....	R-19,23
Radon Mitigation Research.....	R-11,12,26,29
Uranium Mill Tailing Standards.....	R-16

INTERDISCIPLINARY

Case Referrals.....	I-5
Compliance Monitoring.....	I-29
Criminal Investigations.....	I-32,33
Enforcement.....	I-28
Enforcement Operations.....	I-30,31
Enforcement Policy.....	I-30
Environmental Review and Coordination.....	I-20
Evidence Audits.....	I-29
Exploratory Research.....	I-15,16
Federal Agencies Compliance.....	I-21
Indians Programs.....	I-21
Integrated Risk Information System.....	I-13
Interdisciplinary Training Grants.....	I-24
Litigation.....	I-30
National Enforcement Investigation Center (NEIC).....	I-29
NEPA Compliance Program.....	I-21
Office of Enforcement and Compliance Monitoring.....	I-28
Quality Assurance.....	I-14,15
Reduction of Uncertainties in Risk Assessment (RURA).....	I-16,17
Regulatory Support.....	I-14
Risk Assessment Guidelines.....	I-13
Small Business Innovation Research.....	I-16
Technical Information.....	I-13,14
Visiting Scientists Program.....	I-16

TOXIC SUBSTANCES

Asbestos Hazard and Emergency Response Act (AHERA).....	TS-23,24,25
Asbestos in Public Buildings.....	TS-24,25
Asbestos Regulations.....	TS-23,24,31,32
Asbestos Research.....	TS-15,17

Subject Index by Media

(Continued)

	<u>Page</u>
<u>TOXIC SUBSTANCES</u> (Continued)	
Asbestos School Hazard Abatement Act (ASHAA).....	TS-23,24,25
Asbestos Technical Assistance.....	TS-23,24,25
Biotechnology.....	TS-3,4,14,15,17,18, 32,33
Chemical Assessment Desk.....	TS-32
Comprehensive Assessment Information Rule (CAIR).....	TS-30
Enforcement.....	TS-3,39-41,43-45
Existing Chemical Review.....	TS-30-32
Expedited New Chemical Follow-up.....	TS-32,33
Interagency Testing Committee (ITC).....	TS-28,29,30
Lab/Data Integrity.....	TS-39,40
Polychlorinated Biphenyls (PCB).....	TS-3,4,31,39,40
Premanufacture Notice Fees.....	TS-33
Regional Asbestos Information and Training Centers.....	TS-24,25
Risk Assessment.....	TS-4,13-15
SARA Title III Emissions Inventory Reporting.....	TS-3,4,29,34,35,43-45
SARA Title III Section 110 Toxicological Profiles.....	TS-29,32
Significant New Use Rule (SNUR).....	TS-32,33
Structure Activity Relationships.....	TS-4,16,18
Test Guidelines.....	TS-13-15,30
Test Rules.....	TS-28-31

ENERGY

Acid Rain	E-10
Limestone Injection Multistage Burner (LIMB).....	E-12
National Surface Water Survey.....	E-10

MANAGEMENT AND SUPPORT

Audits and Investigations.....	MS-35,36
Automated Data Processing (ADP).....	MS-65,74,84,85
Fiscal Integrity.....	MS-61,62,73
Human Resources Management.....	MS-66,67
International Activities.....	MS-26,27
Legal Advice.....	MS-29
Legislation/Congressional Liaison Activities.....	MS-41,42
Maintenance and Repair Projects.....	MS-2-6
Management Systems Integrated.....	MS-61,62
Managing for Environmental Results.....	MS-53,54
Office of General Counsel.....	MS-35,36
Regulatory Reform - OPPE.....	MS-52,53
Support Services.....	MS-79-87
Global Climate Change.....	MS-50,51

SUPERFUND

Alternative Technologies.....	SF-16,19-21
Cost Recovery - Superfund.....	SF-49,51
Criminal Investigations.....	SF-53
Emergency Response.....	SF-26
Enforcement.....	SF-47

Subject Index by Media

(Continued)

	<u>Page</u>
<u>SUPERFUND (Continued)</u>	
Environmental Response Team.....	SF-27
Health Research.....	SF-15,18,19,38
Interagency.....	SF-36
Management.....	SF-62-66
Office of Inspector General.....	SF-69
Remedial Response.....	SF-27,31
Research and Development.....	SF-15-23
SITE Program.....	SF-19-21
Support Services.....	SF-66,67
University Research Centers.....	SF-16,22

LEAKING UNDERGROUND STORAGE TANK

Cooperative Agreements.....	L-3,11,12,15,16
Corrective Action.....	L-11,12
Cost Recovery.....	L-11,12
Enforcement.....	L-3,11,12,15,16
Financial Responsibility Requirements.....	L-3,11,12
Guidelines.....	L-11,12
Management.....	L-4,20-22
Technical Support.....	L-4,7,20-22

ENVIRONMENTAL PROTECTION AGENCY

1989 Budget Estimate

Alphabetical Subject Index

<u>A</u>	<u>Page</u>
Acid Rain.....	E-10
Advanced Wastewater Treatment Reviews.....	WQ-60,61
Air Emission Standards (Hazardous Waste).....	HW-27
Air Quality Monitoring.....	A-16,17,53
Air Toxics.....	A-4,15-17,19,21,27, 29,43
Airborne Radionuclide Standards.....	R-15,19
Alternative Technologies.....	SF-16,19-21
Aquatic Life Research.....	WQ-19
Asbestos Hazard and Emergency Response Act (AHERA).....	TS-23-25
Asbestos in Public Buildings.....	TS-24,25
Asbestos Regulations.....	TS-23,24,31,32
Asbestos Research.....	TS-15,17
Asbestos School Hazard Abatement Act (ASHAA).....	TS-23,24,25
Asbestos Technical Assistance.....	TS-23,24,25
Audits and Investigations.....	MS-35,36
Automated Data Processing (ADP).....	MS-65,74,84,85
 <u>B</u>	
Biomonitoring.....	WQ-16,36,70,71
Biotechnology.....	P-5,6,13,16,17,23-25; TS-3,4,14,15,17,18, 32,33
 <u>C</u>	
Case Referrals.....	I-5
Certification and Training.....	P-32-35,37,38
Chemical Assessment Desk.....	TS-32
Chesapeake Bay Program.....	WQ-28-30
Clean Lakes.....	WQ-35,47
Coastal Environment Management.....	WQ-51-54
Community Right-to-Know.....	HW-43
Compliance Inspections - Hazardous Waste.....	HW-47,48
Compliance Monitoring Inspections - Air.....	A-43,62
Compliance Monitoring - Interdisciplinary.....	I-29
Comprehensive Assessment Information Rule (CAIR).....	TS-30
Construction Grants Management.....	WQ-59-62; CG-3-5
Cooperative Agreements.....	L-3,11,12,15,16
Corps of Engineers.....	WQ-42-45,59-61
Corrective Action.....	HW-25,26,46,48; L-11,12
Cost Recovery - Superfund and LUST.....	SF-49,51; L-11,12
Criminal Investigations.....	I-32,33; SF-53
 <u>D</u>	
Data Call-In.....	P-28-30
Dioxin.....	HW-13,14,19,26
Disposal.....	P-3-5,16,17,28,30
Domestic Sewage Study.....	HW-28

Alphabetical Subject Index

(Continued)

E

Page

Effluent Guidelines.....	WQ-32,33
Emergency Exemptions.....	P-3,6,22,24,25
Emergency Response.....	WQ-46,47; SF-26
Emission Waivers.....	A-66
Endangered Species.....	P-4,23,35
Enforcement - Legal:	
Office of Enforcement and Compliance Monitoring.....	I-28; L-3,11,12, 15,16
Enforcement Policy and Operations.....	I-28,30,31
Criminal Investigations.....	I-32,33
National Enforcement Investigation Center (NEIC).....	I-29
General Counsel.....	MS-35,36
Regional Counsel.....	MS-35,36
Enforcement - Technical:	
Air Mobile Source Enforcement.....	A-61,66
Air Stationary Source Enforcement.....	A-61
Drinking Water Enforcement.....	DW-42,45
Hazardous Waste Enforcement.....	HW-29,34,46
LUST Enforcement.....	L-3,11,12,15,16
Pesticides Enforcement.....	P-4-6,32-38
Toxic Substances Enforcement.....	TS-3,39-41,43-45
Water Quality Enforcement.....	WQ-7,65-68
Water Quality Permit Issuance.....	WQ-36,37,70-72
Superfund Enforcement.....	SF-47
Environmental Radiation Ambient Monitoring System.....	R-23
Environmental Response Team.....	SF-27
Environmental Review and Coordination.....	I-20
Epidemiology.....	DW-16
Evidence Audits.....	I-29
Existing Chemical Review.....	TS-30-32
Expedited New Chemical Follow-up.....	TS-32,33
Experimental Use Permit.....	P-3,6,22,24,25
Exploratory Research.....	I-15,16

F

Farmworker Safety.....	P-5,23,35
Federal Agencies Compliance.....	I-21
Financial Responsibility Requirements.....	L-3,11,12; HW-26,30
Fiscal Integrity.....	MS-61,62,73
Fuel Economy.....	A-37
Fuel Programs.....	A-36,66

G

Global Climate Change.....	A-22; MS-50,51
Great Lakes Program.....	WQ-20,26-28
Ground Water.....	P-3-5,23,29,30,35
Ground-water Activities.....	DW-3,5,37-40
Ground-water Monitoring.....	HW-16,26
Ground-water Research Activities.....	DW-6,15,18
Guidelines for LUST.....	L-11,12

Alphabetical Subject Index

(Continued)

<u>H</u>	<u>Page</u>
Hazardous Spills Research.....	HW-15,18
Health Advisories.....	DW-4,12,15,17
Health Effects.....	DW-3,16,21
Health Effects Institute.....	A-17
Health Research.....	SF-15,18,19,38
Human Resources Management.....	MS-66,67
 <u>I</u>	
Incineration.....	HW-13,14,16,17,25,41
Indian Programs.....	I-21
Indian Tribes.....	WQ-25,26,36,37,42,47, 60,61,71; DW-4, 25-28,32-36, 38-40,43,44
Indoor Air.....	A-13-19,29
Innovative and Alternative Technologies.....	HW-13,17
Inspection and Maintenance Program.....	A-35
Integrated Risk Information System.....	I-13
Interagency - Superfund.....	SF-36
Interagency Testing Committee (ITC).....	TS-28,29,30
Interdisciplinary Training Grants.....	I-24
International Activities.....	MS-26,27
International Pollution Control Agreements.....	WQ-3,20,24,26,27,41
In-use Emission Factors.....	A-35
 <u>L</u>	
Lab/Data Integrity.....	TS-39,40; P-36
Land Banning Activities.....	HW-25-27,39
Land Disposal Facilities.....	HW-13,17,25,26
Legal Advice.....	MS-29
Legislation/Congressional Liaison Activities.....	MS-41,42
Limestone Injection Multi-stage Burner (LIMB).....	E-12
Listing/Delisting.....	HW-13,16,25,26
Litigation.....	I-30
 <u>M</u>	
Maintenance & Repair Projects.....	BF-2-6
Management - Leaking Underground Storage Tanks.....	L-4,20-22
Management - Superfund.....	SF-62-65
Management Systems Integrated.....	MS-61,62
Managing for Environmental Results.....	MS-53,54
Marine Outfalls - Section 301(h).....	WQ-51-54
Mining Waste.....	HW-25,26,39,40
Monitoring Methods.....	HW-15
Motor Vehicle Emissions Laboratory.....	A-36
Municipal Waste Incineration.....	A-27; HW-13,14,16, 17,46
Municipal Wastewater Lagoon Study.....	HW-29

Alphabetical Subject Index

(Continued)

<u>N</u>	<u>Page</u>
National Ambient Air Quality Standards (NAAQS).....	A-15-18,20,21,28
National Crop Loss Assessment Network (NCLAN).....	A-20
National Emission Standards for Hazardous Air Pollutants (NESHAPs).....	A-26
National Enforcement Investigation Center (NEIC).....	I-29
National Estuary Program.....	WQ-4,51-54
National Primary Drinking Water Regulations.....	DW-3,4,15,16,21-23 26,33,34
National Rural Water Association.....	DW-28,29
National Surface Water Survey.....	E-12
Near Coastal Waters	WQ-4,51,52
Nebraska and Colorado Enforcement Program.....	P-35,38
NEPA Compliance Program.....	I-21
Nevada Nuclear Test Site.....	R-10,11
New Source Performance Standards (NSPS).....	A-16,19-21,30,42,48
Nonpoint Sources.....	WQ-5,25-30,36
NPDES Permits.....	WQ-36,37,52,65-67, 70-72
<u>O</u>	
Ocean Disposal.....	WQ-4,5,44-46
Ocean Disposal Fee.....	WQ-5,44,45
Operations and Maintenance.....	WQ-61,62
Operator Training.....	WQ-61,62
Ozone.....	A-3,15,19,20,22, 30,35,42,48
<u>P</u>	
Particulate Matter.....	A-3,16,20,30,43, 48,53,61,66
Permitting - Hazardous Waste.....	HW-26,39
Policy and Guidance - Hazardous Waste.....	HW-25,26,40,46
Polychlorinated Biphenyls (PCB).....	TS-3,4,31,39,40
POTW Requirements.....	HW-28
Premanufacture Notice Fees.....	TS-33
Pretreatment.....	WQ-6,18,36,37,65-68, 70-72
Prevention of Significant Deterioration.....	A-30,42
Public Water Systems Supervision.....	DW-4,21,32,34
<u>Q</u>	
Quality Assurance.....	I-14,15; HW-14,15
Quality Assurance Fees.....	DW-15,16; WQ-16
<u>R</u>	
Radiological Emergency Response Plans.....	R-19,23
Radon Mitigation Research.....	R-11,12,26,29
Recall of In-Use Vehicles.....	A-66
Reduction of Uncertainties in Risk Assessment (RURA).....	I-16,17
Regional Asbestos Information and Training Centers.....	TS-24,25

Alphabetical Subject Index

(Continued)

<u>R</u>	<u>Page</u>
Regional Programs.....	A-48,53,61
Registration.....	P-3,4,6,20-25
Registration Fees.....	P-23,24
Registration Standards.....	P-4,6,28-30
Regulations Development - Hazardous Waste.....	HW-25-28
Regulatory Reform - OPPE.....	MS-52,53
Regulatory Support.....	I-14
Remedial Response.....	SF-27,31
Reports to Congress.....	HW-26,29,44
Reregistration.....	P-3,4,6,28-30
Risk Assessment.....	HW-13,14,18,25; P-3,5,14,16,17; TS-4,13-15
Risk Assessment Guidelines.....	I-13
<u>S</u>	
SARA Title III Emissions Inventory Reporting.....	TS-3,4,29,34,35, 43-45
SARA Title III Section 110 Toxicological Profiles.....	TS-29,32
Selective Enforcement Audits.....	A-60
Significant New Use Rules (SNURs).....	TS-32,33
SITE Program.....	SF-19-21
Sludge Management.....	WQ-17,18,36,37,47, 48,61,71,72
Small Business Innovation Research.....	I-16
Small Systems Engineering Research.....	DW-17
Special Review (RPAR) - Pesticides.....	P-4,6,28-30
State Authorizations - Hazardous Waste.....	HW-25,26,39,40
State Clean Water Strategies.....	WQ-3,4,25,37,42, 47,55,56
State Grants:	
Air.....	A-60
Water Quality.....	WQ-24-26,35-37
Clean Lakes.....	WQ-35,47
Hazardous Waste.....	HW-33-36
Pesticides.....	P-4,5,32-38
Drinking Water.....	DW-25-29
State Implementation Plans (SIPs).....	A-16,19,20,21,30 42,48
State Revolving Funds.....	WQ-6,59-61; CG-3-5
Stationary Source Enforcement.....	A-61
Stratospheric Ozone Depletion.....	A-22,29
Structure Activity Relationships	TS-4,16,18
Subtitle D Criteria.....	HW-25,40
Superfund Interagency Funds.....	SF-36
Superfund Research and Development.....	SF-15-23
Support Services.....	MS-79-87
Support Services - Superfund.....	SF-66,67
Surface Impoundments.....	HW-28,40
<u>T</u>	
Tampering and Fuel Switching.....	A-67
Technical Information.....	I-13,14

Alphabetical Subject Index

(Continued)

<u>I</u>	<u>Page</u>
Technical Support.....	L-4,7,20-22
Test Guidelines.....	TS-13-15,30
Test Rules.....	TS-28-31
Title III - Hazardous Waste.....	HW-40
Tolerances.....	P-3,6,20-22,25,26
Toxic Pollutant Controls.....	WQ-5,6,15-20,27-30 32,33,36,37,47, 55,56-60,70
Treatment Standards.....	HW-25,26
Tufts University.....	HW-19
 <u>U</u>	
UIC Requirements (RCRA).....	HW-28
Underground Injection Control (UIC).....	DW-3,5,18,21-23, 32,34-36
Underground Storage Tanks Grants.....	HW-36
Underground Storage Tanks - Regulations and Guidelines.....	HW-30
University Research Centers.....	SF-16,22
Uranium Mill Tailing Standards.....	R-16
 <u>V</u>	
Visiting Scientists Program.....	I-16
 <u>W</u>	
Waste Characterization.....	HW-16,47
Waste Minimization.....	HW-26,39
Wastewater Treatment Compliance.....	WQ-61,62,65-67
Water Quality Permit Issuances.....	WQ-36,37,70-72
Wellhead Protection.....	DW-3,5,18,38,39,40
Wetlands (Section 404).....	WQ-4,19,42-44

ENVIRONMENTAL PROTECTION AGENCY

Justification of Appropriation Estimates for the Committee on Appropriations

Fiscal Year 1989

BUDGET SUMMARY

The President's request for the Environmental Protection Agency's 1989 Budget totals \$4,779,000,000 supported by 14,570 total workyears. These resources include \$1,629,000,000 and 11,730 workyears for the Agency's operating programs, \$1,600,000,000 and 2,750 workyears for the Superfund program, \$50,000,000 and 90 workyears for the Leaking Underground Storage Tank (LUST) program, and \$1,500,000,000 for the Construction Grants program. When compared to the Agency's 1988 current estimate, the President's request represents an overall increase of \$160,000,000 and 122 total workyears to Superfund, LUST, and the operating programs. The request for Construction Grants represents a decrease of \$804,000,000 from the 1988 level, which is in keeping with the President's \$12 billion phaseout of the program. The following chart provides a summary of budget authority for EPA's seven appropriation accounts.

EPA's Budget Authority by Appropriation Account

	1988 Current Estimate	1989 President's Request	Increase + Decrease - 1988 vs 1989
Salaries & Expenses.....	\$765,000,000	\$800,000,000	+\$35,000,000
Abatement, Control & Compliance..	606,192,300	624,000,000	+17,807,700
Research & Development.....	186,350,000	197,000,000	+10,650,000
Buildings & Facilities.....	23,500,000	8,000,000	-15,500,000
Operating Programs Subtotal..	\$1,581,042,300	\$1,629,000,000	+\$47,957,700
Hazardous Substance Response			
Trust Fund (Superfund).....	\$1,499,499,800 ^a	\$1,600,000,000 ^a	+\$100,500,200
Leaking Underground Storage			
Tank Trust Fund.....	\$39,400,000 ^b	\$50,000,000	+\$10,600,000
Construction Grants.....	\$2,304,000,000	\$1,500,000,000	-\$804,000,000
Agency Total.....	\$5,423,942,100	\$4,779,000,000	-\$644,942,100

^a The total shown for 1988 represents \$1,128,000,000 in new budget authority and \$371,499,800 in carryover of previous year funds. The 1989 request shown for Superfund is for new budget authority only. For 1989 the Agency is anticipating a carryover of \$100,000,000 from 1988 which would bring the total operating plan for Superfund to \$1,700,000,000.

^b The total shown for LUST in 1988 represents \$14,400,000 in new budget authority and \$25,000,000 in carryover of previous year funds.

The 1989 budget was developed within the targets established by the Bipartisan Budget Agreement between the Administration and Congress. Despite the reality of limited Federal resources, increases have been provided for Superfund, LUST, and operating programs, as shown in the above chart, to reaffirm the President's commitment to provide the resources necessary to protect human health and the environment.

The following briefly describes the 1989 request, the purpose, and the major changes from the Agency's 1988 estimates for each of EPA's seven appropriations. Taken together, the first four appropriations (Salaries and Expenses; Abatement, Control and Compliance; Research and Development; and Buildings and Facilities) constitute the operating programs portion of the Agency's budget.

SALARIES AND EXPENSES

EPA's 1989 request of \$800,000,000 represents an increase of \$35,000,000 (5%) over the 1988 enacted level for Salaries and Expenses. This appropriation finances salaries and related costs associated with administering the operating programs within the Agency. It incorporates all costs exclusive of grant programs and program-specific contractual agreements, and also provides funding for repair and improvement projects under \$25,000. The additional funding requested for 1989 represents the amount necessary to continue Agency activities at the 1988 authorized level for personnel.

ABATEMENT, CONTROL AND COMPLIANCE

The Agency is requesting \$624,000,000 for the Abatement, Control and Compliance appropriation, an increase of \$17,807,700 (3%) over the 1988 enacted level. This appropriation finances contracts, grants and cooperative agreements for pollution abatement, control and compliance activities. The 1989 request includes an increase of \$51,600,000 for the transportation, storage and disposal of cancelled/suspended pesticides. Also, the Agency is requesting a reduction of \$39,200,000 in funding for the asbestos-in-schools program as previous Federal funding has already greatly reduced the problem, and many States have initiated active asbestos management or contractor accreditation programs for schools and should be able to continue these activities.

RESEARCH AND DEVELOPMENT

For 1989 EPA is requesting \$197,000,000 for the Research and Development appropriation, an increase of \$10,600,000 (6%) over the 1988 enacted level. This appropriation finances research grants, contracts and agreements with universities and private industry, as well as in-house research, to produce the scientific knowledge and tools necessary for regulating, preventing and abating pollution. The Agency plans to direct major increases in 1989 toward reducing uncertainties in risk assessments, thereby increasing the Agency's ability to make effective decisions on the nature and extent of environmental risks, and for research on stratospheric ozone depletion.

BUILDINGS AND FACILITIES

The Agency is requesting \$8,000,000 for the Buildings and Facilities appropriation, a decrease of \$15,500,000 (66%) from the 1988 enacted level. This appropriation finances the construction of new facilities and the repair, improvement, alteration, and purchase of fixed equipment for facilities which the Agency currently leases or owns. In 1988 this appropriation contained funding for an unusually large new facilities construction plan which was primarily a one-time cost. The President's 1989 request contains \$1,900,000 for the construction plan for a facility in Gulf Breeze, Florida, and \$6,100,000 for repairs and improvements to existing EPA facilities to continue to ensure healthy and safe working conditions.

HAZARDOUS SUBSTANCE RESPONSE TRUST FUND

This appropriation finances the cleanup of inactive hazardous waste sites and spills of hazardous substances. EPA's 1989 request of \$1,600,000,000 represents an increase of \$100,500,200 (7%) over the 1988 current estimate for Superfund. In addition to this request, the Agency is anticipating a carryover of \$100,000,000 in prior year funds, thus providing a total of \$1,700,000,000 (+14%) for Superfund in 1989. The Agency is requesting 2,750 total workyears to support this funding, an increase of 117 workyears over the 1988 ceiling. The requested increases reflect the Agency's intention to sustain the momentum regained after the reauthorization of the Superfund program in 1986, and would provide for an increased number of site designs and constructions in 1989, increased enforcement actions, more technical oversight of responsible party remedial response actions, and expanded research to improve cleanup technology.

LEAKING UNDERGROUND STORAGE TANK (LUST) TRUST FUND

The Agency is requesting \$50,000,000 supported by 90 total workyears in 1989, an increase of \$10,600,000 (27%) and 5 workyears over the 1988 current estimate. This appropriation establishes a response program for the prevention and cleanup of releases from leaking underground petroleum storage tanks. The requested increase will support increased funding of State Cooperative Agreements, the primary mechanism for implementing response actions and cleanups under this program.

CONSTRUCTION GRANTS

This appropriation finances grants to local public agencies for construction of municipal wastewater treatment facilities, thereby assisting States and localities in attaining EPA established water quality standards. The President's request of \$1,500,000,000 for the Construction Grants appropriation in 1989 represents a decrease of \$804,000,000 (35%) from the 1988 enacted level. This decrease is in line with the President's plan for a \$12 billion phaseout of the Construction Grants program by 1993. A key component of this plan is the transition from grants to State Revolving Funds, a transition which is already underway. Of the funds requested for 1989, \$750,000,000 would be for construction grants and \$750,000,000 would go toward State Revolving Funds.

ENVIRONMENTAL PROTECTION AGENCY

Summary of Budget Authority,
Obligations, Outlays, and Workyears
By Appropriation
(dollars in thousands)

	Actual 1987	Budget Estimate 1988	Enacted 1988	Current Estimate 1988	Request 1989
Salaries and Expenses					
Budget Authority.....	\$ 727,107.0	\$ 772,955.0	\$ 765,000.0	\$ 765,000.0	\$ 800,000.0
Obligations.....	723,315.4	772,955.0	765,000.0	765,000.0	800,000.0
Outlays.....	674,379.0	754,434.0	748,859.0	748,859.0	791,500.0
Permanent Workyears.....	10,841.0	10,603.0	10,967.0	10,967.0	10,969.0
Total Workyears.....	11,176.0	11,459.7	11,664.0	11,664.0	11,668.0
Research and Development					
Budget Authority.....	\$ 197,500.0	\$ 187,600.0	\$ 186,350.0	\$ 186,350.0	\$ 197,000.0
Obligations.....	201,486.7	187,902.0	184,771.0	184,771.0	196,756.0
Outlays.....	206,239.1	197,981.0	195,328.0	195,328.0	170,506.0
Abatement, Control, and Compliance					
Budget Authority.....	\$ 609,685.0	\$ 515,085.3	\$ 606,192.3	\$ 606,192.3	\$ 624,000.0
Obligations.....	612,828.6	516,611.0	607,556.0	607,556.0	624,192.0
Outlays.....	576,419.5	582,592.0	593,927.3	593,927.3	631,631.0
Buildings and Facilities					
Budget Authority.....	\$ 7,500.0	\$ 6,000.0	\$ 23,500.0	\$ 23,500.0	\$ 8,000.0
Obligations.....	13,261.7	5,880.0	26,218.0	26,218.0	8,364.0
Outlays.....	5,059.9	7,733.0	9,995.0	9,995.0	18,110.0
SUBTOTAL, OPERATING PROGRAMS					
Budget Authority.....	\$1,541,792.0	\$1,481,640.3	\$1,581,042.3	\$1,581,042.3	\$1,629,000.0
Obligations.....	1,550,892.4	1,483,348.0	1,583,545.0	1,583,545.0	1,629,312.0
Outlays.....	1,462,097.5	1,542,740.0	1,548,109.3	1,548,109.3	1,611,747.0
Permanent Workyears.....	10,841.0	10,603.0	10,967.0	10,967.0	10,969.0
Total Workyears.....	11,176.0	11,459.7	11,664.0	11,664.0	11,668.0

	Actual 1987	Budget Estimate 1988	Enacted 1988	Current Estimate 1988	Request 1989
Hazardous Substance Superfund					
Budget Authority.....	\$1,411,300.0	\$1,198,422.0	\$1,128,000.0	\$1,499,499.8 ^a	\$1,600,000.0
Obligations.....	1,050,748.9	1,578,600.0	1,499,500.0	1,499,500.0	1,700,000.0
Outlays.....	541,305.0	875,000.0	778,000.0	778,000.0	1,205,000.0
Permanent Workyears.....	2,078.0	2,716.0	2,156.0	2,156.0	2,219.0
Total Workyears.....	2,174.0	2,716.0	2,673.0	2,633.0	2,750.0
LUST Trust Fund					
Budget Authority.....	\$ 50,000.0 ^b	\$ 0.0	\$ 14,400.0	\$ 39,400.0 ^b	\$ 50,000.0
Obligations.....	20,324.4	25,000.0	44,076.0	44,076.0	50,000.0
Outlays.....	1,330.0	17,500.0	23,330.2	23,330.0	31,820.0
Permanent Workyears.....	46.0	85.0	80.0	80.0	85.0
Total Workyears.....	27.0	85.0	85.0	85.0	90.0
Construction Grants					
Budget Authority.....	\$2,361,000.0	\$2,000,000.0	\$2,304,000.0	\$2,304,000.0	\$1,500,000.0
Obligations.....	2,168,797.0	1,999,999.0	2,604,000.0	2,604,000.0	2,100,000.0
Outlays.....	2,920,339.0	2,320,000.0	2,566,000.0	2,566,000.0	2,377,500.0
Scientific Activities Overseas					
Obligations.....	\$ 25.5	\$ 0.0	\$ 1,007.0	\$ 1,007.0	\$ 1,007.0
Outlays.....	163.0	275.0	275.0	275.0	275.0
Operations, Research and Facilities					
Obligations.....	\$ 948.0	\$ 500.0	\$ 151.0	\$ 151.0	\$ 0.0
Outlays.....	89.0	500.0	1,050.0	1,050.0	250.0

	Actual 1987	Budget Estimate 1988	Enacted 1988	Current Estimate 1988	Request 1989
<u>Revolving Fund</u>					
Obligations..... \$	997.0	\$ 1,000.0	\$ 1,000.0	\$ 1,000.0	\$ 1,000.0
Outlays.....	(422.0)	(500.0)	(500.0)	(500.0)	(500.0)
<u>Misc. Contrib. Funds</u>					
Obligations..... \$	4.0	\$ 10.0	\$ 45.0	\$ 45.0	\$ 30.0
Outlays.....	23.0	50.0	50.0	50.0	10.0
<u>Reimbursements - S&E</u>					
Obligations..... \$	25,508.0	\$ 20,000.0	\$ 20,000.0	\$ 20,000.0	\$ 20,000.0
Permanent Workyears.....	60.0	56.0	62.0	62.0	58.0
Total Workyears.....	65.0	62.0	66.0	66.0	62.0
<u>Reimbursements-Superfund</u>					
Obligations..... \$	13,074.0	\$ 52,000.0	\$ 30,000.0	\$ 30,000.0	\$ 30,000.0
<u>TOTAL, EPA</u>					
Budget Authority.....	\$5,364,092.0	\$4,680,062.3	\$5,027,442.3	\$5,423,942.1	\$4,779,000.0
Obligations.....	4,831,319.2	5,160,457.0	5,783,324.0	5,783,324.0	5,531,349.0
Outlays.....	4,924,924.5	4,755,565.0	4,916,314.5	4,916,314.3	5,226,102.0
Permanent Workyears.....	13,025.0	13,460.0	13,265.0	13,265.0	13,331.0
Total Workyears.....	13,442.0	14,322.7	14,488.0	14,448.0	14,570.0
	=====	=====	=====	=====	=====

a/ Includes planned prior year funds.

b/ Of the \$50,000,000 appropriated for FY 1987,
the Agency planned to obligate \$25,000,000 in 1987
and to carry over \$25,000,000 into FY 1988.

ENVIRONMENTAL PROTECTION AGENCY

Summary of Budget Authority, Obligations, Outlays, and Workyears By Media (dollars in thousands)

	Actual 1987	Budget Estimate 1988	Enacted 1988	Current Estimate 1988	Request 1989
<hr/>					
Air					
<hr/>					
Budget Authority.....	\$ 247,252.9	\$ 247,163.3	\$ 246,278.4	\$ 245,589.5	\$ 256,666.9
Obligations.....	246,521.6	246,958.8	244,081.8	243,399.0	255,319.0
Outlays.....	250,774.1	238,619.8	220,690.7	220,023.1	232,208.4
Permanent Workyears.....	1,676.2	1,633.9	1,637.4	1,663.7	1,643.2
Total Workyears.....	1,706.9	1,765.7	1,747.9	1,747.9	1,747.9
 Water Quality					
<hr/>					
Budget Authority.....	\$ 266,925.1	\$ 236,778.3	\$ 258,874.8	\$ 261,005.5	\$ 265,784.6
Obligations.....	270,955.7	235,563.5	256,453.3	258,563.0	263,301.0
Outlays.....	239,387.9	254,739.1	264,975.2	267,156.2	272,328.3
Permanent Workyears.....	1,987.4	1,965.8	2,121.0	2,098.5	2,101.7
Total Workyears.....	2,112.4	2,124.6	2,245.3	2,245.3	2,235.3
 Drinking Water					
<hr/>					
Budget Authority.....	\$ 102,660.3	\$ 114,850.1	\$ 108,103.3	\$ 107,583.3	\$ 103,480.5
Obligations.....	102,531.5	113,661.6	106,984.6	106,470.0	102,525.0
Outlays.....	97,284.1	114,490.2	95,690.0	95,229.7	98,666.4
Permanent Workyears.....	679.2	696.6	699.7	695.3	700.9
Total Workyears.....	691.6	752.7	746.1	746.1	746.1
 Hazardous Waste					
<hr/>					
Budget Authority.....	\$ 255,544.3	\$ 254,305.4	\$ 262,826.2	\$ 259,105.1	\$ 262,427.6
Obligations.....	256,401.0	254,838.6	262,293.5	258,580.0	261,559.0
Outlays.....	251,921.7	241,089.1	246,907.9	243,412.2	251,030.4
Permanent Workyears.....	1,360.9	1,374.1	1,415.8	1,386.2	1,402.9
Total Workyears.....	1,413.2	1,485.4	1,492.9	1,492.9	1,492.9

	Actual 1987	Budget Estimate 1988	Enacted 1988	Current Estimate 1988	Request 1989
Pesticides					
Budget Authority.....	\$ 71,526.3	\$ 75,846.9	\$ 84,309.2	\$ 84,231.8	\$ 137,420.0
Obligations.....	71,278.0	75,592.3	84,026.2	83,949.0	136,531.0
Outlays.....	69,183.1	76,403.7	76,802.7	76,732.2	115,605.0
Permanent Workyears.....	789.0	757.1	777.6	805.5	782.1
Total Workyears.....	796.9	818.2	831.7	831.7	831.7
Radiation					
Budget Authority.....	\$ 15,561.3	\$ 14,046.7	\$ 18,148.9	\$ 20,438.1	\$ 20,799.9
Obligations.....	15,413.2	13,884.5	17,939.3	20,247.0	20,607.0
Outlays.....	18,200.5	17,511.4	15,591.6	17,558.2	18,960.8
Permanent Workyears.....	162.9	153.7	168.9	174.4	172.2
Total Workyears.....	177.3	166.7	183.2	183.2	183.2
Noise					
Budget Authority.....	\$ 0.0	\$ 0.0	\$ 0.0	\$ 0.0	\$ 0.0
Obligations.....	0.0	0.0	0.0	0.0	0.0
Outlays.....	50.1	223.7	227.7	227.7	148.6
Interdisciplinary					
Budget Authority.....	\$ 55,642.5	\$ 56,776.6	\$ 60,699.3	\$ 61,668.0	\$ 69,825.4
Obligations.....	56,187.5	56,482.9	60,385.3	61,349.0	69,476.0
Outlays.....	61,122.5	61,209.7	60,288.2	61,250.3	61,890.5
Permanent Workyears.....	553.7	556.7	573.6	587.8	585.7
Total Workyears.....	583.5	602.2	623.5	623.5	623.5
Toxic Substances					
Budget Authority.....	\$ 138,787.5	\$ 86,096.2	\$ 130,444.1	\$ 130,225.7	\$ 95,007.6
Obligations.....	135,520.7	90,459.9	137,055.5	136,826.0	101,633.0
Outlays.....	127,369.5	119,591.9	151,367.1	151,113.7	131,748.8
Permanent Workyears.....	809.3	777.2	820.3	845.6	821.6
Total Workyears.....	815.8	839.6	873.6	873.6	873.6

	Actual 1987	Budget Estimate 1988	Enacted 1988	Current Estimate 1988	Request 1989
Energy					
Budget Authority.....	\$ 58,157.3	\$ 55,718.8	\$ 55,783.1	\$ 55,620.3	\$ 55,457.5
Obligations.....	62,636.1	55,967.9	56,032.5	55,869.0	55,867.0
Outlays.....	55,652.7	58,538.5	55,560.5	55,398.3	51,289.9
Permanent Workyears.....	78.0	76.3	78.0	79.0	74.6
Total Workyears.....	84.1	82.6	80.6	80.6	79.1
Management and Support					
Budget Authority.....	\$ 322,234.5	\$ 334,058.0	\$ 332,075.0	\$ 332,075.0	\$ 354,130.0
Obligations.....	320,185.4	334,058.0	332,075.0	332,075.0	354,130.0
Outlays.....	286,091.4	352,589.9	350,012.7	350,012.7	359,759.9
Permanent Workyears.....	2,744.4	2,611.6	2,673.7	2,631.0	2,684.1
Total Workyears.....	2,794.3	2,822.0	2,839.2	2,839.2	2,854.7
Buildings and Facilities					
Budget Authority.....	\$ 7,500.0	\$ 6,000.0	\$ 23,500.0	\$ 23,500.0	\$ 8,000.0
Obligations.....	13,261.7	5,880.0	26,218.0	26,218.0	8,364.0
Outlays.....	5,059.9	7,733.0	9,995.0	9,995.0	18,110.0
SUBTOTAL, OPERATING PROGRAMS					
Budget Authority.....	\$1,541,792.0	\$1,481,640.3	\$1,581,042.3	\$1,581,042.3	\$1,629,000.0
Obligations.....	1,550,892.4	1,483,348.0	1,583,545.0	1,583,545.0	1,629,312.0
Outlays.....	1,462,097.5	1,542,740.0	1,548,109.3	1,548,109.3	1,611,747.0
Permanent Workyears.....	10,841.0	10,603.0	10,967.0	10,967.0	10,969.0
Total Workyears.....	11,176.0	11,459.7	11,664.0	11,664.0	11,668.0
Hazardous Substance Superfund					
Budget Authority.....	\$1,411,300.0	\$1,198,422.0	\$1,128,000.0	\$1,499,499.8a	\$1,600,000.0
Obligations.....	1,050,748.9	1,578,600.0	1,499,500.0	1,499,500.0	1,700,000.0
Outlays.....	541,305.0	875,000.0	778,000.0	778,000.0	1,205,000.0
Permanent Workyears.....	2,078.0	2,716.0	2,156.0	2,156.0	2,219.0
Total Workyears.....	2,174.0	2,716.0	2,673.0	2,633.0	2,750.0

	Actual 1987	Budget Estimate 1988	Enacted 1988	Current Estimate 1988	Request 1989
LUST Trust Fund					
Budget Authority.....	\$ 50,000.0b	\$ 0.0	\$ 14,400.0	\$ 39,400.0b	\$ 50,000.0
Obligations.....	20,324.4	25,000.0	44,076.0	44,076.0	50,000.0
Outlays.....	1,330.0	17,500.0	23,330.2	23,330.0	31,820.0
Permanent Workyears.....	46.0	85.0	80.0	80.0	85.0
Total Workyears.....	27.0	85.0	85.0	85.0	90.0
Construction Grants					
Budget Authority.....	\$2,361,000.0	\$2,000,000.0	\$2,304,000.0	\$2,304,000.0	\$1,500,000.0
Obligations.....	2,168,797.0	1,999,999.0	2,604,000.0	2,604,000.0	2,100,000.0
Outlays.....	2,920,339.0	2,320,000.0	2,566,000.0	2,566,000.0	2,377,500.0
Scientific Activities Overseas					
Obligations.....	\$ 25.5	\$ 0.0	\$ 1,007.0	\$ 1,007.0	\$ 1,007.0
Outlays.....	163.0	275.0	275.0	275.0	275.0
Operations, Research and Facilities					
Obligations.....	\$ 948.0	\$ 500.0	\$ 151.0	\$ 151.0	\$ 0.0
Outlays.....	89.0	500.0	1,050.0	1,050.0	250.0
Revolving Fund					
Obligations.....	\$ 997.0	\$ 1,000.0	\$ 1,000.0	\$ 1,000.0	\$ 1,000.0
Outlays.....	(422.0)	(500.0)	(500.0)	(500.0)	(500.0)
Misc. Contrib. Funds					
Obligations.....	\$ 4.0	\$ 10.0	\$ 45.0	\$ 45.0	\$ 30.0
Outlays.....	23.0	50.0	50.0	50.0	10.0

	Actual 1987	Budget Estimate 1988	Enacted 1988	Current Estimate 1988	Request 1989
<u>Reimbursements - S&E</u>					
Obligations.....	\$ 25,508.0	\$ 20,000.0	\$ 20,000.0	\$ 20,000.0	\$ 20,000.0
Permanent Workyears.....	60.0	56.0	62.0	62.0	58.0
Total Workyears.....	65.0	62.0	66.0	66.0	62.0
<u>Reimbursements-Superfund</u>					
Obligations.....	\$ 13,074.0	\$ 52,000.0	\$ 30,000.0	\$ 30,000.0	\$ 30,000.0
<u>TOTAL, EPA</u>					
Budget Authority.....	\$5,364,092.0	\$4,680,062.3	\$5,027,442.3	\$5,423,942.1	\$4,779,000.0
Obligations.....	4,831,319.2	5,160,457.0	5,783,324.0	5,783,324.0	5,531,349.0
Outlays.....	4,924,924.5	4,755,565.0	4,916,314.5	4,916,314.3	5,226,102.0
Permanent Workyears.....	13,025.0	13,460.0	13,265.0	13,265.0	13,331.0
Total Workyears.....	13,442.0	14,322.7	14,488.0	14,448.0	14,570.0
	=====	=====	=====	=====	=====

a/ Includes planned prior year funds.

b/ Of the \$50,000,000 appropriated in FY 1987,
the Agency planned to obligate \$25,000,000 in FY 1987
and to carry over \$25,000,000 into FY 1988.

AIR

ENVIRONMENTAL PROTECTION AGENCY

1989 Budget Estimate

Table of Contents

	<u>Page</u>
<u>AIR</u>	A-1
RESEARCH & DEVELOPMENT	
Air Quality Research.....	A-8
Scientific Assessment.....	A-15
Monitoring Systems and Quality Assurance.....	A-16
Health Effects.....	A-17
Environmental Engineering and Technology.....	A-18
Environmental Processes and Effects.....	A-19
Characterization, Transport and Fate.....	A-20
Stratospheric Modification.....	A-21
ABATEMENT & CONTROL	
Air Quality & Stationary Source Planning & Standards.....	A-24
Emission Standards & Technology Assessment.....	A-27
Pollutant Strategies & Air Standards Development.....	A-28
State Program Policy Guidelines & Regulations Development.....	A-30
Mobile Source Air Pollution Control & Fuel Economy.....	A-32
Emission Standards, Technical Assessment & Characterization.....	A-34
Testing, Technical & Administrative Support.....	A-36
Emissions & Fuel Economy Compliance.....	A-37
State Programs Resource Assistance.....	A-40
Control Agency Resource Supplementation (Section 105 Grants).....	A-42
Training.....	A-45
Air Quality Management Implementation.....	A-46
Trends Monitoring & Progress Assessment.....	A-51
Ambient Air Quality Monitoring.....	A-53
Air Quality & Emissions Data Management & Analysis	A-55
ENFORCEMENT	
Stationary Source Enforcement.....	A-59
Mobile Source Enforcement.....	A-64

AIR

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988

(DOLLARS IN THOUSANDS)						
APPROPRIATION						

Salaries & Expenses	\$84,701.5	\$91,419.6	\$88,608.3	\$88,608.3	\$90,310.5	\$1,702.2
Abatement Control and Compliance	\$124,181.5	\$116,224.3	\$117,892.7	\$117,592.7	\$121,224.3	\$3,631.6
Research & Development	\$37,638.6	\$39,519.4	\$39,777.4	\$39,388.5	\$45,132.1	\$5,743.6
TOTAL, Air	\$246,521.6	\$247,163.3	\$246,278.4	\$245,589.5	\$256,666.9	\$11,077.4
PERMANENT WORKYEARS	1,676.2	1,633.9	1,637.4	1,663.7	1,643.2	-20.5
TOTAL WORKYEARS	1,706.9	1,765.7	1,747.9	1,747.9	1,747.9	
OUTLAYS	\$250,774.1	\$238,619.8	\$220,690.7	\$220,023.1	\$232,208.4	\$12,185.3
AUTHORIZATION LEVELS	Authorization for the Clean Air Act expired September 30, 1981. Reauthorization is pending.					

OVERVIEW AND STRATEGY

The Clean Air Act authorizes a nationwide program of air quality planning, regulation, enforcement, and research for control of air pollution. The EPA strategy for implementing the nationwide program is based on six major goals: (1) achieve National Ambient Air Quality Standards (NAAQSs) to protect public health; (2) reduce the risk of exposure to air toxics; (3) increase the capacity and improve the effectiveness of State and local air quality agencies; (4) determine the policy alternatives and strategy options available to address stratospheric ozone depletion, indoor air pollution and acid deposition; (5) develop and support programs to maintain improvements in air quality; and (6) conduct research to provide a strong scientific and technical basis for regulatory programs.

Achieve NAAQSs Nationwide

The establishment of NAAQSs at levels that protect public health and prevent other adverse effects has been the keystone of the national air quality program. The need to revise the NAAQSs is based on regular assessment of the most accurate and up-to-date scientific data available on the health and other effects of the various pollutants. In 1989, EPA plans to promulgate revised or reaffirmed NAAQSs for sulfur dioxide and propose revised or reaffirmed NAAQSs for lead.

EPA's strategy for achieving the NAAQS centers on working with States to complete and enforce the State Implementation Plans (SIPs) required by the Clean Air Act. Although air quality has generally improved as a result of the measures in SIPs, many of the SIPs have proven inadequate to meet NAAQSs by statutory deadlines.

The NAAQS for ozone has proven to be the most difficult standard to meet. It is estimated that over 50 large urban areas, with an affected population of over 80 million, failed to meet the standard by December 1987, the target date specified in the Clean Air Act. In 1987 EPA published a proposed new policy for dealing with areas that failed to meet the ozone and carbon monoxide standards by the statutory deadline in order to sustain progress towards meeting the standards.

The promulgation of the primary and secondary NAAQSs for size-specific particulate matter (PM₁₀) in 1987 began a major restructuring of the existing programs for the measurement and control of particulates. EPA and State and local agencies will continue a number of new activities during 1989 to implement the revised NAAQSs.

A continued reduction in emissions from motor vehicles will be a major factor in meeting NAAQSs, particularly the standards for ozone, carbon monoxide, and nitrogen dioxide. To help ensure that manufacturers design and produce vehicles that meet emission standards throughout their useful lives, EPA will maintain a comprehensive Federal compliance program. This program includes preproduction certification of emission control systems, selective enforcement audits at manufacturers' facilities, and recalls of insufficiently controlled vehicles. In 1989 EPA will promulgate revised light-duty truck hydrocarbon emission standards.

Tampering with vehicle emission control systems and failing to properly maintain engines greatly increase pollutant emissions. Federal efforts alone cannot effectively address these problems. EPA will continue to work with State and local governments to establish and maintain effective vehicle inspection and maintenance programs and anti-tampering programs. At the beginning of the 1988 calendar year, 60 inspection and maintenance programs and 36 anti-tampering programs were in operation.

In addition to remedying SIPs still inadequate to meet NAAQSs and ensuring compliance of in-use vehicles, the States and EPA will carry out a vigorous, comprehensive program aimed at achieving continuous compliance by stationary sources, particularly major sources in or affecting areas not meeting the health-related NAAQSs. The program will emphasize implementation of the "timely and appropriate" guidance, and the Federally reportable violations guidance. In the enforcement of SIPs, sources of VOCs affecting ozone levels in areas not meeting standards will receive particular attention. Emissions from these sources are of concern, not only because they contribute to unhealthy ozone levels, but also because their components may be air toxics.

Reduce Risk of Exposure to Air Toxics

In 1989 EPA will continue to implement a comprehensive national strategy, first announced in June 1985, for addressing both routine and accidental releases of air toxics. The strategy includes an enhanced and refocused Federal air toxics program to address problems that are national in scope, a new program to help State and local governments strengthen their capabilities to deal with air toxics problems within their boundaries, and an expanded effort to devise strategies to reduce risk from urban multi-source, multi-pollutant problems.

As part of the Federal air toxics program, EPA will list and regulate toxic air pollutants under Section 112 of the Clean Air Act. Decisions for Federal regulatory actions will be made for 10-12 chemicals or source categories in 1989. EPA will also continue to develop and promulgate National Emission Standards for Hazardous Air Pollutants (NESHAPs) for both new and existing sources. In 1989 EPA will have NESHAPs under development for 12 hazardous pollutants. In addition, EPA will promulgate regulations for controlling toxic air emissions from seven types of hazardous waste treatment, storage, and disposal facilities. EPA's Regional air program staff will provide support in delegating NESHAPs implementation to States, in addressing air quality problems associated with Superfund sites on the National Priority List, and in issuing the permits required by the Resource Conservation and Recovery Act.

EPA has determined that vehicle emissions are a major contributor to public health risks from air toxics. In 1989 EPA will increase efforts to control toxic emissions from motor vehicles and vehicle fuels. The success of the program for reducing lead in vehicle fuels has prompted the makers of fuels to add new components and additives. In 1989 EPA will take active steps to ensure that substitutes for lead do not contribute to emissions of hazardous air pollutants or degrade the operation of motor vehicle emission controls. EPA will also give high priority to technology assessments for new particulate control requirements for heavy-duty diesel vehicle engines that become effective starting with the 1988 model year. The technology assessments are particularly important to help ensure that manufacturers meet the technology-forcing standards that apply to buses beginning in 1991 and to other vehicles beginning in 1994.

As part of the program to help State and local governments strengthen their toxics programs, EPA will continue to negotiate State and local agencies multi-year air toxic program development plans and provide support in the development and implementation of these plans. EPA will also begin to stress implementation of previous State and local commitments and to evaluate the effectiveness of selected programs. In addition, EPA will review State and local compliance programs to evaluate their effectiveness in addressing air toxic problems. Finally, EPA will continue to provide support for improving the understanding and control of urban multi-pollutant, multi-source toxics problems.

Strengthen State and Local Programs

EPA will continue to support State and local air pollution control programs by identifying obstacles to program effectiveness, providing direct program assistance, facilitating information exchange, and maintaining national monitoring and data management systems. The National Air Audit System, used to identify obstacles to State and local control agency effectiveness and to help EPA define more efficient and meaningful national programs, will continue on the biennial cycle begun in 1986. During 1988, selected State and key local agencies are being evaluated using national criteria for five major program areas: air quality planning, new source review, compliance assurance, air quality monitoring, and vehicle inspection, maintenance, and anti-tampering. The results of the national audit were used to identify both the problems of individual State and local agencies and more generic national problems.

During 1989, State and key local agencies, with the support of EPA Regional Offices, will initiate the actions necessary to address the problems identified by previous audits. Nationally, EPA will use the results of the summary reports from previous audits to review and adjust priorities and resources to better support State and local needs and achieve the desired environmental results.

Address Stratospheric Ozone Depletion, Indoor Air Pollution, and Acid Deposition

Section 157 of the Clean Air Act requires EPA to issue regulations to reduce chlorofluorocarbon (CFC) emissions if the Administrator of EPA determines that the emissions endanger public health and the environment. In response to a suit brought by the Natural Resources Defense Council, EPA developed and adopted a comprehensive CFC action strategy. To carry out this strategy, EPA will focus on developing a national and international consensus on the nature and magnitude of the CFC problem. In 1989 EPA will work to implement decisions on regulatory actions needed to control CFCs as outlined by the international protocol signed in 1987.

Research by EPA and others indicates that health risks result from indoor exposure to air pollutants, as well as ambient exposures. Although more research is needed to better characterize the contribution of indoor air pollution to adverse health effects, EPA is analyzing the policy issues associated with addressing the problem. In 1989 EPA will continue to examine how existing EPA programs can be adjusted to reduce total exposure, indoor and ambient, to unhealthy air quality and take appropriate follow-up actions. A report to Congress will summarize these findings.

In 1989 EPA will continue an acid deposition program that includes accelerated research and analyses of policy and implementation issues. The EPA Office of Research and Development will continue to develop the scientific and technical information required to respond to policy issues. The Office of Air and Radiation will ensure that research efforts are focused on policy information needs and will review new research results for their policy implications. EPA will also continue in 1989 to work with States to analyze possible implementation issues associated with enactment of an acid rain control program.

Maintain Air Quality

EPA, States, and local agencies must protect the gains made in improving environmental quality. In 1989 EPA will continue to develop national, technology-based New Source Performance Standards (NSPSs) for all major source categories. A total of five NSPSs will be promulgated. Work on one NSPS will continue and developmental work will be initiated for one of the six remaining NSPS source categories.

Continue Research to Support Regulatory Programs

In 1989, the Office of Research and Development will continue to provide health and ecological effects data, monitoring methods and support, models, assessments, emission reduction technologies, and quality assurance in support of the regulatory and public information needs of the air program. Two significant changes are reflected in this submission: a major increase in research on stratospheric ozone depletion and an increase in Regional ozone modeling.

The Agency is proposing a major initiative for stratospheric ozone research as part of a coordinated interagency effort to fill the knowledge gaps associated with depletion of stratospheric ozone and resulting high levels of ultraviolet light at ground level. The primary focus of this program will be on ecological effects of ultraviolet light in the 290 to 320 nanometer waveband (UV-B). Research on the effects of UV-B on food crops will be expanded and a new effort will be initiated to study UV-B effects in various ecosystems.

The other major focus of the Agency's 1989 program is to increase compliance with the National Ambient Air Quality Standard for ozone. Two research products are essential to meet this goal. The first is improved models for predicting the formation and transport of ozone over long distances. This area has been expanded to refine existing models and increase their applicability to diverse areas of the country. The second area of critical research is improved technology to control emissions of nitrogen oxides, VOCs, and other precursors of ozone. This program will remain stable in 1989.

ENVIRONMENTAL PROTECTION AGENCY

1989 Budget Estimate

Table of Contents

<u>AIR</u>	<u>Page</u>
RESEARCH & DEVELOPMENT	
Air Quality Research.....	A-8
Scientific Assessment.....	A-15
Monitoring Systems and Quality Assurance.....	A-16
Health Effects.....	A-17
Environmental Engineering and Technology.....	A-18
Environmental Processes and Effects.....	A-19
Characterization, Transport and Fate.....	A-20
Stratospheric Modification.....	A-21

AIR
Air Quality Research

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988
----- (DOLLARS IN THOUSANDS) -----						
PROGRAM -----						
Scientific Assessment - Air						
Salaries & Expenses	\$3,061.8	\$2,983.1	\$2,840.4	\$2,840.4	\$2,902.6	\$62.2
Research & Development	\$2,330.2	\$2,468.3	\$2,167.3	\$2,067.3	\$2,067.3	
TOTAL	\$5,392.0	\$5,451.4	\$5,007.7	\$4,907.7	\$4,969.9	\$62.2
Monitoring Systems And Quality Assurance - Air						
Salaries & Expenses	\$6,552.1	\$7,024.6	\$6,677.3	\$6,677.3	\$6,823.5	\$146.2
Research & Development	\$10,354.4	\$9,093.0	\$8,960.0	\$8,656.2	\$7,923.3	-\$732.9
TOTAL	\$16,906.5	\$16,117.6	\$15,637.3	\$15,333.5	\$14,746.8	-\$586.7
Health Effects - Air						
Salaries & Expenses	\$7,855.3	\$8,926.4	\$8,474.9	\$8,474.9	\$8,660.5	\$185.6
Research & Development	\$12,228.7	\$12,675.5	\$12,977.5	\$12,893.6	\$12,441.8	-\$451.8
TOTAL	\$20,084.0	\$21,601.9	\$21,452.4	\$21,368.5	\$21,102.3	-\$266.2
Environmental Engineering And Technology - Air						
Salaries & Expenses	\$3,476.7	\$3,651.8	\$3,388.0	\$3,388.0	\$3,462.2	\$74.2
Research & Development	\$2,882.2	\$3,188.5	\$3,378.5	\$3,337.0	\$2,937.0	-\$400.0
TOTAL	\$6,358.9	\$6,840.3	\$6,766.5	\$6,725.0	\$6,399.2	-\$325.8
Environmental Processes And Effects - Air						
Salaries & Expenses	\$727.8	\$821.1	\$756.5	\$756.5	\$773.1	\$16.6
Research & Development	\$861.6	\$1,976.7	\$1,676.7	\$1,451.0	\$1,451.0	
TOTAL	\$1,589.4	\$2,797.8	\$2,433.2	\$2,207.5	\$2,224.1	\$16.6

AIR
Air Quality Research

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988
----- (DOLLARS IN THOUSANDS)						
Characterization, Transport And Fate - Air						
Salaries & Expenses	\$3,644.6	\$4,032.6	\$3,806.6	\$3,806.6	\$3,890.0	\$83.4
Research & Development	\$7,059.5	\$7,243.3	\$7,243.3	\$7,336.7	\$7,336.7	
TOTAL	\$10,704.1	\$11,275.9	\$11,049.9	\$11,143.3	\$11,226.7	\$83.4
Stratospheric Modification Program						
Salaries & Expenses	\$179.9	\$165.1	\$418.0	\$418.0	\$854.3	\$436.3
Research & Development	\$1,922.0	\$2,874.1	\$3,374.1	\$3,646.7	\$10,975.0	\$7,328.3
TOTAL	\$2,101.9	\$3,039.2	\$3,792.1	\$4,064.7	\$11,829.3	\$7,764.6
TOTAL:						
Salaries & Expenses	\$25,498.2	\$27,604.7	\$26,361.7	\$26,361.7	\$27,366.2	\$1,004.5
Research & Development	\$37,638.6	\$39,519.4	\$39,777.4	\$39,388.5	\$45,132.1	\$5,743.6
Air Quality Research TOTAL	\$63,136.8	\$67,124.1	\$66,139.1	\$65,750.2	\$72,498.3	\$6,748.1

PERMANENT WORKYEARS

Scientific Assessment - Air	49.4	54.3	54.3	53.4	53.4
Monitoring Systems And Quality Assurance - Air	115.1	118.0	118.0	115.1	115.1
Health Effects - Air	109.7	126.8	126.8	122.6	122.6
Environmental Engineering And Technology - Air	58.2	60.3	60.3	58.7	58.7

AIR
Air Quality Research

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988
----- (DOLLARS IN THOUSANDS) -----						
Environmental Processes And Effects - Air	11.0	14.3	14.3	14.1	14.1	
Characterization, Transport And Fate - Air	57.2	60.0	60.0	57.5	57.5	
Stratospheric Modification Program	1.9	3.0	3.0	7.0	14.0	7.0
TOTAL PERMANENT WORKYEARS	402.5	436.7	436.7	428.4	435.4	7.0
TOTAL WORKYEARS -----						
Scientific Assessment - Air	53.3	54.3	54.3	53.4	53.4	
Monitoring Systems And Quality Assurance - Air	116.3	118.0	118.0	115.1	115.1	
Health Effects - Air	120.1	126.8	126.8	122.6	122.6	
Environmental Engineering And Technology - Air	59.2	60.3	60.3	58.7	58.7	
Environmental Processes And Effects - Air	12.2	14.3	14.3	14.1	14.1	
Characterization, Transport And Fate - Air	62.9	60.0	60.0	57.5	57.5	

AIR
Air Quality Research

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988

	(DOLLARS IN THOUSANDS)					
Stratospheric Modification Program	2.1	3.0	3.0	7.0	14.0	7.0
TOTAL WORKYEARS	426.1	436.7	436.7	428.4	435.4	7.0

AIR

Air Research

Principal Outputs by Objective

Objective 1. Provide Scientific Support to Develop and Review Primary and Secondary National Ambient Air Quality Standards (NAAQS)

- 1989: ° Final Air Quality Criteria Document for Carbon Monoxide (Scientific Assessment)
 - ° Publication of a comprehensive research plan to determine the effects of ozone on U.S. forests (Environmental Processes)
- 1988: ° Report on pulmonary function response of normal subjects and individuals with sensitive or diseased airways to ozone and nitrogen dioxide (Health)
 - ° Final report on the NCLAN national scientific meeting (Environmental Processes)
- 1987: ° User's Guide: Visibility module which converts aerosol concentration to visibility parameters (Characterization)
 - ° Journal articles on the effects of ozone and nitrogen dioxide on the pulmonary host defenses of animals (Health)

Objective 2. Provide Scientific Support to Develop New Source Performance Standards (NSPS) and State Implementation Plans (SIPs)

- 1989: ° Report on the development of the Advacate process for control of acid gases from combustion sources (Engineering)
 - ° Report on recommended modifications to the Complex Terrain Dispersion Model (Characterization)
- 1988: ° Report, recommendations, and supporting evidence on chemical mechanisms for use in regional ozone modeling (Characterization)
- 1987: ° Report on field measurements of background volatile organic compounds (Monitoring)
 - ° User's Guide for PEM-2 Pollution Episodic Model -- Version 2 (Characterization)

Objective 3. Provide Scientific Support to Develop Regulations for Hazardous Air Pollutants (HAPs)

- 1989: ° Journal article on the comparative mutagenicity and carcinogenicity of combustion source emissions (Health)
 - ° Report on identities of HAPs produced in the atmosphere from ubiquitous innocuous pollutants (Characterization)
- 1988: ° Journal article on the dosimetry of volatile organic compounds (Health)
 - ° Journal article on the assessment of HAPs from light-duty vehicles (Characterization)
- 1987: ° Report on the development, evaluation, and validation of source emission monitoring methods for HAPs (Monitoring)

Objective 4. Provide Scientific Support for the Mobile Source Regulatory Program

- 1989: ° Status report on population exposure to mobile source pollutants for 1988 (Monitoring)
 - ° Journal article on evaluation of emissions from diesels equipped with advanced emission control technology (Characterization)
- 1988: ° Composition and rate of emissions during refueling: impact of control technology (Characterization)
- 1987: ° Evaluation of methods for characterizing evaporative canister adsorbed organics (Characterization)

Objective 5. Provide Scientific Data Necessary to Determine Sources, Exposures, Health Effects, and Control Strategies Associated with Indoor Pollutants

- 1989: ° Report on human clinical studies of effects associated with exposure to volatile organic compounds (Health)
 - ° Produce personal computer model for evaluating indoor air quality control options (Engineering)
- 1988: ° Report on indoor air monitoring methods development (Monitoring)
 - ° Report on the use of biochemical and bioassay markers of exposure to environmental tobacco smoke in children (Health)
- 1987: ° Report on organic emissions from kerosene heaters (Engineering)

Objective 6. Provide Scientific Data Necessary to Determine the Effects of Stratospheric Ozone Depletion and Develop Control Strategies

- 1989: ° Status report on solutions to stratospheric ozone depletion (Strat Mod)
- 1988: ° Long-term research plan for stratospheric ozone and UV-B effects (Strat Mod)
- 1987: ° Biennial report to Congress on stratospheric ozone modification (Strat Mod)
 - ° Report on the effect of UV-B radiation on energy and carbon cycling through plankton species to important economic species (Strat Mod)

Objective 7. Provide Scientific Data Necessary to Determine the Effects of Global Warming and Develop Control Strategies

- 1989: ° Implementation plan for global climate change research program (Stratospheric Modification)
- 1988: ° Draft long-range research plan for global climate change research program (Stratospheric Modification)
- 1987: ° Initiate research program on global climate change (Stratospheric Modification)

Objective 8. Provide Scientific Data and Support to the National Health and Nutrition Examination Survey (NHANES-III)

- 1989: ° Status report on NHANES-III cooperative research (Health)
- 1988: ° Initiate cooperative research project under NHANES-III (Health)

AIR

Air Quality Research

Budget Request

The Agency requests a total of \$72,498,300 supported by 435.4 total workyears for 1989, an increase of \$6,748,100 and 7.0 total workyears from 1988. Of the request, \$27,366,200 will be for the Salaries and Expenses appropriation and \$45,132,100 will be for the Research and Development appropriation, increases of \$1,004,500 and \$5,743,600, respectively. The indoor air research program will be funded at \$3,598,200 in 1989.

Program Description

This research program provides the research and technical support necessary to enable the Agency to carry out its regulatory and information transfer responsibilities under the Clean Air Act. The following objectives support these efforts:

Objective 1. Provide Scientific Support to Develop and Review Primary and Secondary NAAQS. This research program provides the scientific data needed to issue and revise national standards for emissions of criteria air pollutants.

Objective 2. Provide Scientific Support to Develop NSPS and SIPs. This research supports issuance and revision of New Source Performance Standards and State Implementation Plans through development of models and monitoring techniques for air pollutants and engineering studies of control technologies.

Objective 3. Provide Scientific Support to Develop Regulations for Hazardous Air Pollutants (HAPs). Under this objective EPA conducts research to identify and control emissions of air pollutants from a variety of sources that are hazardous to human health but are not already regulated as criteria air pollutants.

Objective 4. Provide Scientific Support for the Mobile Source Regulatory Program. This research evaluates emissions, exposure patterns and health effects of mobile source pollutants.

Objective 5. Provide Scientific Data Necessary to Determine Sources, Exposures, Health Effects, and Control Strategies Associated with Indoor Pollutants. Research conducted under this objective supports the Agency's efforts to inform the public about hazards associated with indoor air pollutants and to develop methods to control air emissions from major sources.

Objective 6. Provide Scientific Data Necessary to Determine the Effects of Stratospheric Ozone Depletion and Develop Control Strategies. This research program is primarily concerned with providing necessary data on the effects of stratospheric ozone depletion and resulting increases in harmful (UV-B) radiation on plants, ecosystems, and air quality.

Objective 7. Provide Scientific Data Necessary to Determine the Effects of Global Warming and Develop Control Strategies. This objective addresses the research needed to determine the impact of global climate change, to help understand the regional consequences of global climate trends, and to develop and test predictive source and sink models for important trace gases.

Objective 8. Provide Scientific Data and Support to the National Health and Nutrition Examination Survey (NHANES-III). Activities in support of this objective provide data on exposure to pollutants, body burdens, and health effects, through NHANES-III.

SCIENTIFIC ASSESSMENT

1989 Program Request

The Agency requests a total of \$4,969,900 supported by 53.4 total workyears for this program, of which \$2,902,600 will be for the Salaries and Expenses appropriation and \$2,067,300 will be for the Research and Development appropriation. This represents an increase of \$62,200 in the Salaries and Expenses appropriation and no change in the Research and Development appropriation or total workyears. The increase in the Salaries and Expenses appropriation reflects a general enhancement of inhouse support for assessing risks from air pollutants.

Provide Scientific Support to Develop and Review Primary and Secondary NAAQS. Evaluations of the NAAQS for ozone, and other photochemical oxidants and lead will be provided to the program office in preparation for the next mandated revision of these standards. Work on revising the criteria document for CO will be conducted and new information will be gathered to support revision of the PM₁₀/SO_x criteria document.

Provide Scientific Support to Develop Regulations for Hazardous Air Pollutants. Final comprehensive Health Assessment Documents (HADs) will be completed for two chemicals, External Review Drafts (ERD) will be prepared for one to three chemicals and Tier 1 screening documents will be completed for four to six chemicals to provide the Office of Air and Radiation (OAR) with data to evaluate hazardous air pollutants. Technical assistance will be provided to the Regions and States on issues related to air toxics. The new Health Risk Information Center, initiated in 1988, will be expanded. Work on mobile source pollutants and inhalation reference doses for air toxics will be conducted.

Provide Scientific Data Necessary to Determine Sources, Exposures, Health Effects and Control Strategies Associated with Indoor Pollutants. In support of the Agency's indoor air implementation plan, researchers will develop and refine methods to determine the effects of indoor air pollution on human health. Research will include exposure assessments, risk analyses and literature searches.

1988 Program

In 1988, the Agency is allocating a total of \$4,907,700 supported by 53.4 total workyears for this program, of which \$2,840,400 is from the Salaries and Expenses appropriation and \$2,067,300 is from the Research and Development appropriation. Work on revising the PM₁₀/SO_x and CO criteria documents is being conducted. An issue paper on the health effects of acid aerosols is being prepared. Final HADs for two chemicals, ERDs for three to six chemicals, and Tier 1 screening documents for four to six chemicals are being prepared. In addition, a new source-category document to assist in determining risks and a Health Risk Information Center are being initiated.

1987 Accomplishments

In 1987, the Agency obligated a total of \$5,392,000 supported by 53.3 total workyears for this program, of which \$3,061,800 was from the Salaries and Expenses appropriation and \$2,330,200 was from the Research and Development appropriation. An addendum to the PM₁₀/SO_x criteria document was completed and work began on an issue paper on the health effects of acid aerosols. One HAD, three ERDs, and 12 Tier I documents were completed.

MONITORING SYSTEMS AND QUALITY ASSURANCE

1989 Program Request

The Agency requests a total of \$14,746,800 supported by 115.1 total workyears for this program, of which \$6,823,500 will be for the Salaries and Expenses appropriation and \$7,923,300 will be for the Research and Development appropriation. This represents an increase of \$146,200 in the Salaries and Expenses appropriation, a decrease of \$732,900 in the Research and Development appropriation, and no change in total workyears. The increase in the Salaries and Expenses appropriation reflects a general enhancement of inhouse support for the monitoring program. The reduction in the Research and Development appropriation indicates a decrease in the effort devoted to evaluation and development of ambient and source monitoring methods, particularly for hazardous air pollutants (HAPs). Given the remaining base program in air monitoring and the emphasis in recent years on methods development, this decrease will not seriously affect the Agency's ability to accurately measure levels of air pollutants.

Provide Scientific Support to Develop and Review Primary and Secondary NAAQS. To further enhance the Agency's ability to measure levels of criteria air pollutants, ambient monitoring systems will be evaluated, improved, and standardized. Emphasis will be placed on improving methods to monitor ambient concentrations of particulate matter to support the new PM₁₀ standard and visibility studies in the eastern U.S.

Provide Scientific Support to Develop NSPS and SIPs. Monitoring and measurement methods will be developed for new standards, to assess long-term needs and to determine effects on health and welfare. Quality assurance will be provided and certified reference materials will be distributed to users.

Provide Scientific Support to Develop Regulations for Hazardous Air Pollutants. Development and evaluation of ambient, source and personal monitoring systems for potential HAPs will support the Agency's responsibilities under the Clean Air Act to identify hazardous air pollutants. The Toxic Air Monitoring System (TAMS) will also provide data on HAPs. Total Exposure Assessment Methodology (TEAM) studies will be conducted in one urban area to determine levels and major sources of human exposure to about 20-25 potential HAPs. As part of a multi-disciplinary effort to characterize and assess risks from complex urban air mixtures, advanced monitoring methods will be developed. In addition, quality assurance support and monitoring support to the Integrated Air Cancer Project (IACP) will be provided.

Provide Scientific Support to the Mobile Source Regulatory Program. Work to extend the CO human exposure modeling methodology to benzene, NO₂, formaldehyde, and other mobile source-related pollutants will be conducted. Human activity exposure models will be developed, refined and field-tested. Monitoring exposures of drivers and passengers to toxic chemicals while traveling will also begin.

Provide Scientific Data Necessary to Determine Sources, Exposures, Health Effects, and Control Strategies Associated with Indoor Pollutants. In support of the Agency's indoor air implementation plan, additional exposure assessment studies in homes and office buildings will be initiated and area monitors will be developed and refined. In addition, based on earlier field study results, survey and measurement methods will be refined and used to relate indoor air quality to exposure.

1988 Program

In 1988, the Agency is allocating a total of \$15,333,500 supported by 115.1 total workyears for this program, of which \$6,677,300 is from the Salaries and Expenses appropriation and \$8,656,200 is from the Research and Development appropriation. Ambient and source monitoring systems, including remote sensing and personal monitors, are being evaluated and improved. The TAMS is supporting efforts to

determine the presence and concentrations of hazardous air pollutants. Results of three TEAM studies are being analyzed to determine human exposure to volatile organic compounds. In the indoor air monitoring program, exposure to indoor pollutants is being determined.

1987 Accomplishments

In 1987, the Agency obligated a total of \$16,906,500 supported by 116.3 total workyears for this program, of which \$6,552,100 was from the Salaries and Expenses appropriation and \$10,354,400 was from the Research and Development appropriation. An interim report on visibility was completed. Methods for measuring non-methane organic compounds were developed. TEAM and TAMS were used extensively in support of ORD's interdisciplinary program to study complex mixtures of urban pollutants and a four-volume report on the TEAM study was published.

HEALTH EFFECTS

1989 Program Request

The Agency requests a total of \$21,102,300 supported by 122.6 total workyears for this program, of which \$8,660,500 will be for the Salaries and Expenses appropriation and \$12,441,800 will be for the Research and Development appropriation. This represents an increase of \$185,600 in the Salaries and Expenses appropriation and a decrease of \$451,800 in the Research and Development appropriation, with no change in total workyears. The increase in the Salaries and Expenses appropriation reflects a general enhancement of inhouse support for the health effects research program and the decrease in the Research and Development appropriation reflects a reduction in health effects research on criteria and hazardous air pollutants. This reduction will have minimal programmatic impact given the remaining base programs for HAPS and NAAQS health effects research. Of the total request, \$3,000,000 will be provided to the Health Effects Institute (HEI).

Provide Scientific Support to Develop and Review Primary and Secondary NAAQS. Acute and subchronic exposure to criteria air pollutants will be studied, with emphasis on determining the respiratory and immunological effects of O₃, NO₂, SO₂ and inhalable particles. Work on the development of theoretical models of respiratory tract deposition, with the goal of providing more accurate estimates of pollutant dose to the lung, will improve animal to man extrapolation estimates. Health risks to susceptible subpopulations such as children and asthmatics, epidemiology studies on chronic cardiopulmonary effects of ambient and indoor combinations of pollutants, and the cardiovascular effects of chronic low-level exposure to CO will also be investigated. The Health Effects Institute will study the effects of NAAQS pollutants. Data from the case-control study of lung cancer in China will also be analyzed.

Provide Scientific Support to Develop Regulations for Hazardous Air Pollutants. Tier bioassays will continue to assess the mutagenic and carcinogenic effects of vapor phase mixtures. Dose-response studies will continue for several compounds, to be decided based upon the results of initial screening assays. These studies will determine the effects of acute exposures. Using the data from the Boise study and pilot studies conducted to date, new research under the IACP likely will focus on mobile source emissions and residential oil combustion emissions.

Provide Scientific Support to the Mobile Source Regulatory Program. The Health Effects Institute will study the human health effects of mobile source emissions. Studies on the health effects of motor vehicle fuels and additives, including methanol, will also be conducted.

Provide Scientific Data Necessary to Determine Sources, Exposures, Health Effects, and Control Strategies Associated with Indoor Pollutants. In support of the indoor air implementation plan, health effects research will emphasize combustion products, the sick building syndrome, volatile organic compounds, and environmental tobacco smoke. Results of these studies will be used to develop health risk assessments. In addition to these studies, research to compare neurological, respiratory, and mutagenic potencies of selected indoor pollutants will be conducted and dose-response studies will begin.

Provide Scientific Support to the National Health and Nutrition Examination Survey (NHANES-III). The National Health and Nutrition Survey (NHANES-III) will begin to gather new data on the health and nutritional status of the U.S. population late in calendar year 1988. In support of NHANES-III, final development and pilot testing of field and laboratory test protocols will be completed. These protocols will be used to obtain national baseline data on exposure, body burden, and health effects of common environmental pollutants, such as lead and cadmium. Trend analysis of the NHANES exposure and dose measurements data will provide the Agency with beneficial information on the progress being achieved by various Agency programs.

1988 Program

In 1988, the Agency is allocating a total of \$21,368,500 supported by 122.6 total workyears for this program, of which \$8,474,900 is from the Salaries and Expenses appropriation and \$12,893,600 is from the Research and Development appropriation. The respiratory, metabolic, and immune system effects of acute and sub-chronic exposures to criteria pollutants are being studied. Species sensitivity and dosimetry studies are being conducted to support the extrapolation program. The toxicity of criteria pollutants and mobile source pollutants are being studied by the Health Effects Institute. Studies of the health effects of indoor air pollutants are being expanded, to focus on improving biomarkers and to determine the health effects of volatile organic compounds. Support for the third National Health and Nutrition Examination Survey (NHANES-III) is being provided.

1987 Accomplishments

In 1987, the Agency obligated a total of \$20,084,000 supported by 120.1 total workyears for this program, of which \$7,855,300 was from the Salaries and Expenses appropriation and \$12,228,700 was from the Research and Development appropriation. Clinical studies conducted to support revision of the one-hour NAAQS for ozone indicated significant symptoms and pulmonary function changes following exposure to low concentrations of ozone for extended periods of time. In the Integrated Air Cancer Program, the genotoxic components of an air-shed containing large amounts of wood smoke were isolated.

ENVIRONMENTAL ENGINEERING AND TECHNOLOGY

1989 Program Request

The Agency requests a total of \$6,399,200 supported by 58.7 total workyears for this program, of which \$3,462,200 will be for the Salaries and Expenses appropriation and \$2,937,000 will be for the Research and Development appropriation. This represents an increase of \$74,200 in the Salaries and Expenses appropriation and a decrease of \$400,000 in the Research and Development appropriation, with no change in total workyears. The increase in the Salaries and Expenses appropriation reflects a general enhancement of inhouse support for air engineering research. The reduction in the Research and Development appropriation reflects the completion of a one-year study on methanol in power plants.

Provide Support to Develop NSPS and SIPs. To support attainment of the ozone standard, control technology research on NO_x, an ozone precursor, will emphasize the demonstration of reburning using a cyclone boiler as a means of control. In addition, since recent research indicates that acid aerosols have the potential to cause adverse effects on human health and the environment, the control technology program will work on development of improved sorbents for spray drying and dry injection flue gas desulfurization systems to curb emissions of SO_x, a precursor to the formation of acid aerosols.

Provide Scientific Support to Develop Regulations for Hazardous Air Pollutants. Given the wide variety of hazardous air pollutants present in the environment, there is a pressing need to develop and evaluate technologies to control emissions of these pollutants. In order to protect the public health from HAP emissions, additional resources will be provided to support the Agency's Air Toxics Control Implementation Strategy including rapid-response engineering and laboratory investigations. Focused control assessments and technology development will continue for key air toxic sources. A control strategy for volatile organic compounds will be developed jointly with OAR to deal with ozone nonattainment.

Provide Scientific Data Necessary to Determine Sources, Exposures, Health Effects, and Control Strategies Associated with Indoor Pollutants. In support of the Agency's indoor air implementation plan, research on source characterization and control technology will be conducted. The emphasis will be on determining the contribution of various sources to indoor pollution and on developing and validating mitigation methods. Methods to measure ventilation systems will be developed, materials used in buildings will be surveyed, and the performance of air cleaners and ventilation systems will be evaluated.

1988 Program

In 1988, the Agency is allocating a total of \$6,725,000 supported by 58.7 total workyears for this program, of which \$3,388,000 is from the Salaries and Expenses appropriation and \$3,337,000 is from the Research and Development appropriation. SO₂ and NO_x control technologies are being researched. Technical support for NSPS compliance and new source control evaluation is being provided to Regions and States. Control assessments and technology development are being done for key air toxics sources. An initial survey is underway to determine the engineering needs, especially VOC control and ozone attainment. Indoor air source characterization and control technology studies are being expanded.

1987 Accomplishments

In 1987, the Agency obligated a total of \$6,358,900 supported by 59.2 total workyears for this program, of which \$3,476,700 was from the Salaries and Expenses appropriation and \$2,882,200 was from the Research and Development appropriation. In the indoor air program, source characterization procedures were developed and emission rates were measured from a number of building materials and kerosene space heaters. A promising new sorbent technology for SO₂ removal from stack emissions was developed. To provide rapid-response air toxics control technology support, the Control Technology Center was established. Field testing of woodstoves uncovered emissions technology problems under conditions of home use.

ENVIRONMENTAL PROCESSES AND EFFECTS

1989 Program Request

The Agency requests a total of \$2,224,100 supported by 14.1 total workyears for this program, of which \$773,100 will be for the Salaries and Expenses appropriation and \$1,451,000 will be for the Research and Development appropriation. This

represents an increase of \$16,600 in the Salaries and Expenses appropriation, with no change in the Research and Development appropriation or total workyears. The increase in the Salaries and Expenses appropriation reflects a general enhancement of inhouse support for determining the effects of air pollutants on the environment.

Provide Scientific Support to Develop and Review Primary and Secondary NAAQS. Based on recent research, EPA has determined that tropospheric ozone is a major contributor to forest damage. Therefore, in response to this research and to support the development of secondary ozone standards, a new program to study the effects of ozone on forests, begun in 1988, will be significantly enhanced. This comprehensive, long-term study will focus on several commercial forest species and will include preliminary dose-response studies, exposure scenarios, and risk evaluations.

1988 Program

In 1988, the Agency is allocating a total of \$2,207,500 supported by 14.1 total workyears for this program, of which \$756,500 is from the Salaries and Expenses appropriation and \$1,451,000 is from the Research and Development appropriation. Studies of crop exposure dynamics, based on data generated through the National Crop Loss Assessment Network, will be completed. A new program to study the effects of ozone on forests will be initiated.

1987 Accomplishments

In 1987, the Agency obligated a total of \$1,589,400 supported by 12.2 total workyears for this program, of which \$727,800 was from the Salaries and Expenses appropriation and \$861,600 was from the Research and Development appropriation. An international workshop was held to summarize, analyze, and disseminate the findings of the National Crop Loss Assessment Network (NCLAN). A study of crop exposure dynamics, using data generated by NCLAN, was initiated.

CHARACTERIZATION, TRANSPORT, AND FATE

1989 Program Request

The Agency requests a total of \$11,226,700 supported by 57.5 total workyears for this program, of which \$3,890,000 will be for the Salaries and Expenses appropriation and \$7,336,700 will be for the Research and Development appropriation. This represents an increase of \$83,400 in the Salaries and Expenses appropriation, with no change to the Research and Development appropriation or total workyears. The increase in the Salaries and Expenses appropriation reflects a general enhancement of inhouse support for development of models to predict the existence and movement of air pollutants.

Provide Scientific Support to Develop and Review Primary and Secondary NAAQS. Attainment of the PM₁₀ standard is an emerging issue. In support of PM₁₀ attainment, modeling techniques will be developed to assess the contribution of fine particles to visibility reduction in the atmosphere, with emphasis on various components of fine particles such as sulfates, organics, and carbon soot. Work on developing air pollutant damage functions will be performed. Specifically, air quality data obtained through field studies will be used to develop risk assessments for particulate matter damage to materials.

Provide Scientific Support to Develop NSPS and SIPs. In view of emerging needs related to ozone attainment, special mechanistic studies will be conducted to increase the accuracy of air quality models to predict ozone levels. A non-attainment city will be chosen for a case study. The Regional Oxidant Model will be extensively used to determine the impact of a variety of VOC and NO_x emission abatement strategies for ozone control, with emphasis on the northeast. Chemistry

and dispersion components of urban scale particulate models will be completed with emphasis on the atmospheric chemistry of nitrate and organic aerosols. Work will be initiated to assess the impact of lower level emitting sources of particulate matter in stagnant valleys. Version 7 of UNAMAP will be completed, thus providing the user community with updated air quality models.

Provide Scientific Support to Develop Regulations for Hazardous Air Pollutants. In order to increase the Agency's understanding of how HAPs are formed and to estimate their expected lifetime in the atmosphere, laboratory and field studies will be conducted to determine the atmospheric reaction rates and transformation products of HAPs under Agency review. HAP chemistry will be studied under conditions that simulate atmospheric conditions. Studies will be conducted to identify potential HAPs produced in air from innocuous pollutants. As part of ORD's Integrated Air Cancer Project, studies will be conducted to examine the formation, stability, and transformation of volatile and aerosol bound organics and potentially carcinogenic materials in the atmosphere. This research will help identify those HAPs which warrant further study.

Provide Scientific Support to the Mobile Source Regulatory Program. As a result of recent data indicating that emissions from gasoline pumps may present a substantial risk to human health, research on mobile source control technologies for evaporative emissions will be evaluated. Studies will also be conducted to develop analytical procedures for characterizing motor vehicle emissions and to develop procedures for laboratory simulation of roadway driving conditions. Tailpipe, evaporative, and refueling emissions will be characterized, to include both regulated and selected unregulated emissions. The emissions associated with the use of alternative fuels, such as methanol blends, will be characterized.

1988 Program

In 1988, the Agency is allocating a total of \$11,143,300 supported by 57.5 total workyears for this program, of which \$3,806,600 is from the Salaries and Expenses appropriation and \$7,336,700 is from the Research and Development appropriation. Research to improve air quality models continues, with emphasis on regional ozone modeling and urban and regional modeling of inhalable particles. Visibility reduction due to fine particles and the impact of pollutants on important materials including paint are being studied. The model to assess the dispersion of SO₂ on the windward side of mountains is being completed. Studies are being conducted to determine the levels of hazardous air pollutants found in urban atmospheres. Mobile source emissions are being characterized from vehicles equipped with new emission control devices.

1987 Accomplishments

In 1987, the Agency obligated a total of \$10,704,100 supported by 62.9 total workyears for this program, of which \$3,644,600 was from the Salaries and Expenses appropriation and \$7,059,500 was from the Research and Development appropriation. Studies were completed on the emission rates of gaseous hydrocarbons during vehicle refueling. Other studies investigated the impact of fuel volatility and methanol fuel on evaporative emissions. A computer model which quantitatively describes the formation and removal of ambient particulate matter was developed.

STRATOSPHERIC MODIFICATION

1989 Program Request

The Agency requests a total of \$11,829,300 supported by 14.0 total workyears for this program, of which \$854,300 will be for the Salaries and Expenses appropriation and \$10,975,000 will be for the Research and Development appropriation. This

represents increases of \$436,300 and \$7,328,300 respectively, and an increase of 7.0 total workyears. Stratospheric Modification research will be significantly expanded in 1989 to support the Administration's initiative on stratospheric ozone. The recent Montreal Protocol focused international attention on the problem of stratospheric ozone depletion and set deadlines for decisions on tightening existing controls on ozone depleting CFCs by 1994. The resource increases will provide for an expanded research program on the effects of ozone depletion and the resulting increases in UV-B radiation on human health and the environment. The results of this research will be used by Agency policymakers before recommending any additional controls in 1994.

Provide Scientific Data Necessary to Determine the Effects of Stratospheric Ozone Depletion and Develop Control Technologies. One outcome of the Montreal Protocol on stratospheric ozone depletion was the commitment that initial decision-making regarding tightened controls of chlorofluorocarbons (CFCs) will be made by 1994. In view of this short time frame, ORD will significantly increase its efforts to determine the ecological effects of ultraviolet light in the 290-320 nanometer wave band (UV-B). One goal of this research will be to determine the effects of UV-B on aquatic ecosystems including impacts on shellfish and finfish. Specific aquatic ecosystems will be chosen following completion in 1988 of a long-range research plan for stratospheric ozone. In addition to the ecological effects research, ORD will evaluate CFC and halon control technologies; conduct research on immune and other human health effects resulting from increased levels of UV-B radiation; monitor the effects of increased UV-B on other tropospheric pollutants; and conduct decision support research to assess and integrate the data collected.

Provide Scientific Data Necessary to Determine the Effects of Global Warming and Develop Control Strategies. Due to increasing national and international concern over the potential for global climate change resulting from pollutants in the troposphere and stratosphere, ORD initiated a global climate research program in 1988 which will continue in 1989. Ecological system sensitivities to climate changes will be studied and regional maps of the projected consequences of climate change will be developed. Ecological methods development will focus on estimating the potential changes in such major resources as croplands, forests, and surface water availability and quality. Atmospheric modeling will expand to include estimates of regional consequences of tropospheric and stratospheric air quality changes. This research will be developed and conducted in close coordination with the National Aeronautics and Space Administration, the National Oceanic and Atmospheric Administration, and other relevant Federal agencies.

1988 Program

In 1988, the Agency is allocating a total of \$4,064,700 supported by 7.0 total workyears for this program, of which \$418,000 is from the Salaries and Expenses appropriation and \$3,646,700 is from the Research and Development appropriation. Long-term plans for global climate change research and stratospheric ozone research are being developed. Ongoing research on the effects of UV-B on cereal grain crops forests and commercial marine fisheries will continue. ORD will provide technical support to the Agency in developing policies on global warming and control of CFCs.

1987 Accomplishments

In 1987, the Agency obligated a total of \$2,101,900 supported by 2.1 total workyears for this program, of which \$179,900 was from the Salaries and Expenses appropriation and \$1,922,000 was from the Research and Development appropriation. Research on the effects of UV-B radiation on crops including wheat and soybeans and on aquatic species was conducted. A report was prepared on progress-to-date in studying the ecological effects of UV-B radiation and a report was also prepared on control options analyses for CFC user industries. In response to growing concerns, the Agency initiated a global warming research program.

ENVIRONMENTAL PROTECTION AGENCY

1989 Budget Estimate

Table of Contents

<u>AIR</u>	<u>Page</u>
ABATEMENT & CONTROL	
Air Quality & Stationary Source Planning & Standards.....	A-24
Emission Standards & Technology Assessment.....	A-27
Pollutant Strategies & Air Standards Development.....	A-28
State Program Policy Guidelines & Regulations Development.....	A-30
Mobile Source Air Pollution Control & Fuel Economy.....	A-32
Emission Standards, Technical Assessment & Characterization.....	A-34
Testing, Technical & Administrative Support.....	A-36
Emissions & Fuel Economy Compliance.....	A-37
State Programs Resource Assistance.....	A-40
Control Agency Resource Supplementation (Section 105 Grants).....	A-42
Training.....	A-45
Air Quality Management Implementation.....	A-46
Trends Monitoring & Progress Assessment.....	A-51
Ambient Air Quality Monitoring.....	A-53
Air Quality & Emissions Data Management & Analysis	A-55

AIR
Air Quality & Stationary Source Planning & Standards

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988	
----- (DOLLARS IN THOUSANDS) -----							
PROGRAM -----							
Emission Standards & Technology Assessment							
Salaries & Expenses	\$5,177.7	\$5,657.9	\$5,356.7	\$5,356.7	\$4,645.8	-\$710.9	
Abatement Control and Compliance	\$8,757.4	\$7,579.7	\$7,579.7	\$7,279.7	\$5,699.7	-\$1,580.0	
TOTAL	\$13,935.1	\$13,237.6	\$12,936.4	\$12,636.4	\$10,345.5	-\$2,290.9	
Pollutant Strategies & Air Standards Development							
Salaries & Expenses	\$4,409.5	\$4,693.5	\$4,654.3	\$4,654.3	\$5,043.0	\$388.7	
Abatement Control and Compliance	\$7,207.0	\$2,935.0	\$6,935.0	\$6,407.9	\$5,277.9	-\$1,130.0	
TOTAL	\$11,616.5	\$7,628.5	\$11,589.3	\$11,062.2	\$10,320.9	-\$741.3	
State Program Policy Guidelines & Regulations Development							
Salaries & Expenses	\$2,565.4	\$2,616.9	\$2,844.5	\$2,844.5	\$3,456.9	\$612.4	
Abatement Control and Compliance	\$870.6	\$477.7	\$477.7	\$766.6	\$1,376.6	\$610.0	
TOTAL	\$3,436.0	\$3,094.6	\$3,322.2	\$3,611.1	\$4,833.5	\$1,222.4	
TOTAL:							
Salaries & Expenses	\$12,152.6	\$12,968.3	\$12,855.5	\$12,855.5	\$13,145.7	\$290.2	
Abatement Control and Compliance	\$16,835.0	\$10,992.4	\$14,992.4	\$14,454.2	\$12,354.2	-\$2,100.0	
Air Quality & Stationary Source Planning & Standards	TOTAL	\$28,987.6	\$23,960.7	\$27,847.9	\$27,309.7	\$25,499.9	-\$1,809.8

AIR
Air Quality & Stationary Source Planning & Standards

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988
----- (DOLLARS IN THOUSANDS) -----						
PERMANENT WORKYEARS -----						
Emission Standards & Technology Assessment	96.1	105.5	105.5	101.9	87.5	-14.4
Pollutant Strategies & Air Standards Development	75.6	92.4	92.4	87.8	87.8	
State Program Policy Guidelines & Regulations Development	50.1	47.9	47.9	52.4	63.3	10.9
TOTAL PERMANENT WORKYEARS	221.8	245.8	245.8	242.1	238.6	-3.5
TOTAL WORKYEARS -----						
Emission Standards & Technology Assessment	99.7	105.5	105.5	101.9	87.5	-14.4
Pollutant Strategies & Air Standards Development	79.9	92.4	92.4	87.8	87.8	
State Program Policy Guidelines & Regulations Development	51.2	47.9	47.9	52.4	63.3	10.9
TOTAL WORKYEARS	230.8	245.8	245.8	242.1	238.6	-3.5

AIR

Air Quality and Stationary Source Planning and Standards

Budget Request

The Agency requests a total of \$25,499,800 supported by 238.6 total workyears for 1989, a decrease of \$809,900 and 3.5 total workyears from 1988. Of the request, \$13,145,600 will be for the Salaries and Expenses appropriation and \$12,354,200 will be for the Abatement, Control and Compliance appropriation, an increase of \$290,100 in the Salaries and Expenses appropriation and a decrease of \$1,100,000 in the Abatement, Control and Compliance appropriation.

Program Description

The program areas under this subactivity include:

Emission Standards and Technology Assessment -- This program provides for the establishment, review, and revision of national emission standards for stationary sources under Sections 111 and 112 of the Clean Air Act. Section 111 requires EPA to establish New Source Performance Standards (NSPSs). Section 112 authorizes National Emission Standards for Hazardous Air Pollutants (NESHAPs).

NSPSs reflect the performance of the best demonstrated control systems for reducing emissions. The standards are set taking into consideration technical feasibility and cost, as well as economic, energy, and environmental impacts. The background information published as part of the process for setting NSPSs provides useful data for State agencies in defining best available control technology, which must be done under other sections of the Clean Air Act.

NESHAPs are set at levels to protect the public from hazardous pollutants that cause or contribute to air pollution that results in an increase in mortality or an increase in serious irreversible or incapacitating illness.

Pollutant Strategies and Air Standards Development -- The major activities of this program include: (1) regular review and revision, as appropriate, of all existing National Ambient Air Quality Standards (NAAQSs); (2) identification and assessment of potential hazardous air pollutants, including the determination as to the appropriateness of a listing under Section 112 of the Clean Air Act; and (3) the overall coordination, development, and review of air policies and strategies including work on air toxics and on emerging issues such as acid deposition, stratospheric ozone depletion, and indoor air pollution.

State Program Policy Guidelines and Regulations -- This program includes: (1) development of guidelines and regulations that set forth requirements for air pollution control programs implemented by the States under the Clean Air Act; and (2) overview of the development and implementation of State and local air pollution control programs. The State and local programs provide for the attainment and maintenance of NAAQSs, reduction of air toxics, prevention of significant deterioration of air quality in clean air areas, and the protection of visibility in national parks and wilderness areas. The national program management carried out under this program helps ensure consistency among EPA Regional Offices, States, and local agencies in carrying out the requirements of the Clean Air Act.

EMISSION STANDARDS AND TECHNOLOGY ASSESSMENT

1989 Program Request

The Agency requests a total of \$10,345,500 supported by 87.5 total workyears for this program, of which \$4,645,800 will be for the Salaries and Expenses appropriation and \$5,699,700 will be for the Abatement, Control and Compliance appropriation. This represents decreases of \$710,900 and \$1,580,000, respectively, and a decrease of 14.4 total workyears. These decreases reflect the completion of some of the preliminary NESHAPs development activities underway in 1988 and the shifting of resources to support ozone strategy implementation.

The major program emphasis in 1989 will continue to be reductions in air toxics, including NESHAPs development and use of other regulatory authorities to control toxics emissions; source assessments to support Section 112 listing decisions for potentially hazardous pollutants; and implementation support to State air toxics programs, especially through the Control Technology Center. During 1989, promulgations will include NESHAPs for coke ovens (wet charging and topside leaks), asbestos revision (demolition and renovation), and benzene, as well as regulations under the Toxics Substances Control Act (TSCA) for chromium from comfort cooling. NESHAPs proposals include chromium (electroplating, cooling towers), ethylene oxide (commercial sterilizers), hazardous organics, degreasing, and perchloroethylene (dry cleaning). An NSPS and 111(d) guideline for landfills will be proposed. Continuing regulatory work includes further development of new NESHAPs for sources of methylene chloride, trichloroethylene (machinery manufacturing and rebuilding); a new NSPS and 111(d) guideline for municipal waste combustion; five source category assessments in support of regulatory decisions; and reassessment of promulgated NESHAPs in response to the vinyl chloride litigation and benzene remand. The program increases support for the anticipated expansion of the Air Toxics Control Technology Center.

In 1989 NSPS development will continue. This includes promulgation of eight NSPSs covering eight additional priority list categories. One new NSPS will be proposed.

Technology assessment in 1989 provides implementation support for State air pollution programs, primarily those to reduce ozone and size-specific particulate matter (PM10). Implementation support will be provided for the woodstove NSPS through laboratory certification and methods evaluation.

1988 Program

In 1988 the Agency is allocating a total of \$12,636,400 supported by 101.9 total workyears to this program, of which \$5,356,700 is from the Salaries and Expenses appropriation and \$7,279,700 is from the Abatement, Control and Compliance appropriation.

In 1988 NSPS development continues. One proposal and ten promulgations covering seven additional priority list source categories are scheduled for 1988. In addition, one NSPS review is being completed. Other activities include litigation work relating to particulate matter and nitrogen oxides (NOx) emissions from industrial boilers, developmental work for four NSPSs, and implementation support to States for ozone and PM10 State Implementation Plan (SIP) development.

Proposals for two NESHAPs (asbestos demolition and renovation revision and benzene coke by-product plants) are scheduled in 1988. The woodstoves NSPS will be promulgated. Source assessments are being completed to support listing decisions in 1989. Ongoing NESHAPs work includes development of standards for

sources of the eight intent to list pollutants, municipal incinerators, and proposed response to a voluntary remand on benzene. Controls for chromium comfort cooling are scheduled to be proposed. Consistent with the National Air Toxics Strategy, implementation support is also being provided to State air toxic pollutant control programs. This support is being provided through the Air Toxics Control Technology Center in cooperation with the Office of Research and Development to provide direct engineering support to State and local agencies in solving air toxics control problems. Activities include provision of control technology documents, workshops, and special engineering analyses.

1987 Accomplishments

In 1987 the Agency obligated a total of \$13,935,100 supported by 99.7 total workyears, of which \$5,177,700 was from the Salaries and Expenses appropriation and \$8,757,400 was from the Abatement, Control and Compliance appropriation. The contract resources were used to continue work related to setting standards for NSPSs and NESHAPs.

In 1987 work continued on setting NSPSs for source categories on EPA's priority list. NSPS activity included proposal of seven new standards and promulgation of four standards covering three additional priority list source categories.

A revision to the NESHAPs for mercury was promulgated during 1987. One NESHAPs for benzene (coke oven wet charging) was proposed in 1987. Source assessments for twenty chemical compounds were completed.

POLLUTANT STRATEGIES AND AIR STANDARDS DEVELOPMENT

1989 Program Request

The Agency requests a total of \$10,320,900 supported by 87.8 total workyears for this program, of which \$5,043,000 will be for the Salaries and Expenses appropriation and \$5,277,900 will be for the Abatement, Control and Compliance appropriation. This represents an increase of \$388,700 in the Salaries and Expenses appropriation and a decrease of \$1,130,000 in the Abatement, Control and Compliance appropriation. The increase reflects increased personnel and support costs and replacement of worn-out equipment. The decrease reflects anticipated completion of global climate studies in 1988.

Promulgation of revised or reaffirmed NAAQSs for sulfur dioxide is planned for 1989. Also in 1989, revised or reaffirmed NAAQSs for lead are scheduled to be proposed. Work on the review of the NAAQSs for ozone will be nearing completion and the next round of reviews of the carbon monoxide and nitrogen dioxide NAAQSs will be underway in 1989. Work will also be underway on a new fine particle secondary NAAQS.

The program will continue to provide a key role in implementing the National Air Toxics Strategy. Preliminary screening and assessment of new pollutants will continue and regulatory decisions will be published for 10-12 new compounds or source categories in 1989. The program will also continue to support NESHAPs development by providing health, exposure, and risk analyses. Efforts will continue to assess pollutants with noncarcinogenic effects. The program will also continue its lead role in development and implementation of the Agency's policies on air toxics control, including intra-agency toxics coordination and use of non-CAA authorities to reduce air toxics. These activities implement the direct Federal regulatory program set forth in the National Air Toxics Strategy and will focus on pollutants and source categories that pose significant public health risks. Also in 1989, continued support will be provided to States and local agencies through the operation and enhancement of the National Air Toxics Information Clearinghouse and provision of materials, guidance, and assistance. In 1989, EPA will fully implement the Health Risk Information Center to provide risk assessment expertise, guidance, and support to developing State and local air toxics programs.

Other activities include the overall coordination, development, and review of air policies and strategies, including continued analyses of acid rain policy and implementation issues and implementation and follow-up on pending domestic and international actions needed to protect stratospheric ozone. Development of regulatory options for the remaining fully halogenated fluorocarbons will be initiated. EPA will also continue its indoor air effort in 1989 to provide policy coordination and information dissemination as well as partial implementation of recommendations in its report to Congress.

1988 Program

In 1988 the Agency is allocating a total of \$11,062,200 supported by 87.8 total workyears to this program, of which \$4,654,300 is from the Salaries and Expenses appropriation and \$6,407,900 is from the Abatement, Control and Compliance appropriation.

In 1988 EPA is examining the need for a fine particulate secondary NAAQS. Revised or reaffirmed NAAQSs for sulfur dioxide will be proposed and review of the staff paper for the lead NAAQSs is being completed. Pollutant assessment activities are expected to result in regulatory decisions for eight to ten potentially toxic air pollutants. Other activities include: operation of the Air Toxics Clearinghouse; initiation of the Health Risk Information Center; preparation of health, exposure, and risk analyses for the NESHAPs program; and continuing implementation of the National Air Toxics Strategy, including support to State and local programs on air toxics problems.

Work is also continuing on acid rain policy and implementation issues, on implementation of actions needed to protect stratospheric ozone, and on development of the framework for an indoor air program. In 1988 EPA will complete the regulatory action, required by court order, to regulate CFCs. EPA will also begin developing the program for implementing the regulatory action and the analysis and data for implementing the international protocol. In addition, EPA will complete the Report to Congress on the long-term Federal role in indoor air quality.

In the area of global climate change, the Office of Policy Analysis is continuing work on the two draft reports to Congress on the Environmental Effects of Climate Change and on Policy Options for Stabilizing Climate, on developing an initial framework for estimates of future concentrations of trace gases and global temperatures, and on completing analyses of the impact of climate change on California, the Great Plains, Southeast, and Great Lakes.

1987 Accomplishments

In 1987 the Agency obligated a total of \$11,616,500 supported by 79.9 total workyears, of which \$4,409,500 was from the Salaries and Expenses appropriation and \$7,207,000 was from the Abatement, Control and Compliance appropriation.

During 1987 EPA promulgated the revised NAAQSs for PM₁₀ and published an advance notice of proposed rulemaking for a fine particulate secondary NAAQS. EPA continued review of the sulfur dioxide, lead, and ozone NAAQSs. In the pollutant assessment area, EPA continued the health and risk assessments for potentially toxic air pollutants to determine the need for regulations. Regulatory decisions were published for five compounds or source categories. Other activities included the operation of the Air Toxics Clearinghouse and health, exposure, and risk analyses for NESHAPs development. Work also continued on acid rain policy and implementation issues and exploration of the extent and causes of stratospheric ozone depletion, as well as the framework needed to address the indoor air problem. Global climate change work focused on starting the two reports to Congress, on building the framework for analysis of options to stabilize the atmosphere, and providing technical support for bilateral activities on climate.

STATE PROGRAM POLICY GUIDELINES AND REGULATIONS DEVELOPMENT

1989 Program Request

The Agency requests a total of \$4,833,500 supported by 63.3 total workyears for this program, of which \$3,456,900 will be for the Salaries and Expenses appropriation and \$1,376,600 will be for the Abatement, Control and Compliance appropriation. This represents increases of \$612,400 and \$610,00 respectively, and an increase of 10.9 total workyears. The increases will support a more active management role in the development and preparation of the ozone/CO SIPs and the review of PM₁₀ SIPs to ensure technical integrity of SIP submittals and improve the interface between toxics control, ozone, and particulate control programs.

In 1989 EPA will continue to provide national direction, management, and assistance to the national air quality management effort for the attainment of NAAQSs and prevention of significant deterioration (PSD). EPA will also develop program and technical guidance for State and local agencies to address PM₁₀ sulfur dioxide, and ozone. Management of the SIP process will continue with emphasis on the post-1987 ozone/CO attainment program and PM₁₀ SIPs. Special attention will be given to the adoption of regionally consistent regulations for the control of VOCs including assistance to States in identifying, adopting, and implementing measures that will directly involve the public. EPA will review PM₁₀ SIPs developed in areas needing substantial SIP revisions to meet the new PM₁₀ NAAQSs. Key actions in 1989 will also include providing guidance and oversight of State efforts to develop fugitive source and nontraditional source control measures; preparing periodic national reports on the status of State progress toward the development and submission of PM₁₀ SIPs to EPA; reviewing regionally forwarded PM₁₀ SIPs for consistency with all requirements; and expediting the EPA Headquarters review and decisions on the adequacy of State-submitted SIPs and completing necessary rulemaking actions.

In 1989 State and local air toxics programs will be further enhanced with the implementation and revision of multi-year plans. Activities to improve the interface between toxics control and ozone and particulate control will be expanded. The New Source Review (NSR) program will provide guidance and assistance to Regions and States permitting new sources and support to national litigation over current regulations. Regulatory work will be completed on the development of PSD increments for PM₁₀ and nitrogen oxides. Also in 1989, EPA will expand its program to follow

up on the results of State audits and needed corrective actions, thereby improving interregional and interstate consistency, addressing critical air pollution infrastructure needs, and resolving current program weaknesses. Air toxics program development will be added to the national air audit program.

1988 Program

In 1988 the Agency is allocating a total of \$3,611,100 supported by 52.4 total workyears to this program, of which \$2,844,500 is from the Salaries and Expenses appropriation and \$766,600 is from the Abatement, Control and Compliance appropriation.

In 1988 the major priorities are promulgation and implementation of the post-1987 strategy for ozone and CO, review of SIPs developed to meet the new PM₁₀ NAAQSs, and continued support to State/local air toxics programs. In 1988 EPA is scheduled to propose the post-1987 nonattainment policy for ozone and CO. EPA is also planning to prepare regulatory support documents for implementing the new PM₁₀ NAAQS. The NSR program is continuing to provide permit assistance and litigation support, including rulemaking adding surface coal mines to NSR regulations and including fugitive emissions in determining NSR applicability. Efforts to establish PSD increments for nitrogen oxides and PM₁₀ are also continuing.

The National Air Audit System is starting another two-year cycle (1988-1989) to evaluate and review State air programs. Consistent with the State enhancement portion of the National Air Toxics Strategy, guidance to improve State/local program capability through multi-year development plans is being provided, including the design of programs to address high-risk point source and urban air toxics problems. Studies and workshops are being conducted to document exemplary practices and facilitate information exchange.

1987 Accomplishments

In 1987 the Agency obligated a total of \$3,436,000 supported by 51.2 total workyears, of which \$2,565,400 was from the Salaries and Expenses appropriation and \$870,600 was from the Abatement, Control and Compliance appropriation.

National management and evaluation of all major SIP programs continued in 1987. Program guidance, policy papers and technical information were developed on a variety of issues, including promulgation of the PM₁₀ SIP development strategy and the holding of four national PM₁₀ implementation workshops. New source review program guidance was provided and management of the National Air Audit System was continued, including coordinating the audits of 31 agencies, compiling the results for inclusion in a national audit report and evaluating the program to address 1988 air program objectives. Guidance was also provided for the development of State/local multi-year air toxics plans and programs. Rulemaking activities included proposal of (1) Federal regulations to correct deficient SIPs involving sources causing visibility impairment and (2) alternative policies to address rural fugitive dust areas.

AIR
Mobile Source Air Pollution Control & Fuel Economy

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988	
----- (DOLLARS IN THOUSANDS) -----							
PROGRAM -----							
Emission Standards, Technical Assessment & Characterization							
Salaries & Expenses	\$3,734.7	\$4,369.3	\$4,392.0	\$4,392.0	\$4,435.9	\$43.9	
Abatement Control and Compliance	\$2,964.0	\$3,038.9	\$3,038.9	\$2,938.9	\$3,488.9	\$550.0	
TOTAL	\$6,698.7	\$7,408.2	\$7,430.9	\$7,330.9	\$7,924.8	\$593.9	
Testing, Technical & Administrative Support							
Salaries & Expenses	\$5,501.2	\$5,319.2	\$5,209.9	\$5,209.9	\$5,262.0	\$52.1	
Abatement Control and Compliance	\$900.0	\$850.2	\$850.2	\$850.2	\$850.2		
TOTAL	\$6,401.2	\$6,169.4	\$6,060.1	\$6,060.1	\$6,112.2	\$52.1	
Emissions & Fuel Economy Compliance							
Salaries & Expenses	\$1,649.0	\$1,761.9	\$1,818.5	\$1,818.5	\$1,836.7	\$18.2	
Abatement Control and Compliance	\$24.8	\$33.1	\$33.1	\$33.1	\$33.1		
TOTAL	\$1,673.8	\$1,795.0	\$1,851.6	\$1,851.6	\$1,869.8	\$18.2	
TOTAL:							
Salaries & Expenses	\$10,884.9	\$11,450.4	\$11,420.4	\$11,420.4	\$11,534.6	\$114.2	
Abatement Control and Compliance	\$3,888.8	\$3,922.2	\$3,922.2	\$3,822.2	\$4,372.2	\$550.0	
Mobile Source Air Pollution Control & Fuel Economy	TOTAL	\$14,773.7	\$15,372.6	\$15,342.6	\$15,242.6	\$15,906.8	\$664.2

AIR
Mobile Source Air Pollution Control & Fuel Economy

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988

(DOLLARS IN THOUSANDS)						
PERMANENT WORKYEARS						

Emission Standards, Technical Assessment & Characterization	72.9	77.9	77.9	77.3	77.3	
Testing, Technical & Administrative Support	93.6	93.6	93.6	92.9	92.9	
Emissions & Fuel Economy Compliance	32.7	33.3	33.3	33.1	33.1	
TOTAL PERMANENT WORKYEARS	199.2	204.8	204.8	203.3	203.3	
TOTAL WORKYEARS						

Emission Standards, Technical Assessment & Characterization	77.5	77.9	77.9	77.3	77.3	
Testing, Technical & Administrative Support	96.8	93.6	93.6	92.9	92.9	
Emissions & Fuel Economy Compliance	33.8	33.3	33.3	33.1	33.1	
TOTAL WORKYEARS	208.1	204.8	204.8	203.3	203.3	

AIR

Mobile Source Air Pollution Control and Fuel Economy

Budget Request

The Agency requests a total of \$15,906,800 supported by 203.3 total workyears for 1989, an increase of \$664,200 and no change in total workyears from 1988. Of the request, \$11,534,600 will be for the Salaries and Expenses appropriation and \$4,372,200 will be for the Abatement, Control and Compliance appropriation. This represents an increase of \$114,200 in the Salaries and Expenses appropriation and an increase of \$550,000 in the Abatement, Control and Compliance appropriation.

Program Description

This subactivity includes the following mobile source programs:

Emission Standards, Technical Assessment, and Characterization -- This program provides the standards development and analysis required for the control of mobile source emissions under the Clean Air Act. Work is also carried out to improve fuel economy testing procedures and evaluate fuel economy retrofit devices, as required by the Motor Vehicle Information and Cost Savings Act. This program is responsible for developing both light-duty vehicle and heavy-duty engine standards for the control of evaporative and exhaust emissions. Other major program activities include: characterization of toxic emissions; assessment of emissions control technology; technical assistance to the States for implementation of local control programs; assessment of actual emissions levels from in-use vehicles; analysis of the current and prospective impacts of motor vehicle emissions on air quality; and assessment of alternative fuels and technologies as a means of reducing air pollution from mobile sources.

Testing, Technical, and Administrative Support -- This program provides basic testing, technical, and administrative support to the mobile source operating programs of EPA.

Emissions and Fuel Economy Compliance -- This program implements the emissions certification and compliance requirements of the Clean Air Act as well as the fuel economy information and compliance requirements of the Motor Vehicle Information and Cost Savings Act. As part of this program, EPA makes fuel economy information available to the consumer through the mile per gallon values which are published in the Gas Mileage Guide and displayed on new vehicle labels to ensure that EPA's responsibilities are met under the Corporate Average Fuel Economy (CAFE) compliance program.

EMISSION STANDARDS, TECHNICAL ASSESSMENT, AND CHARACTERIZATION

1989 Program Request

The Agency requests a total of \$7,924,800 supported by 77.3 total workyears for this program, of which \$4,435,900 will be for the Salaries and Expenses appropriation and \$3,488,900 will be for the Abatement, Control and Compliance appropriation. This is an increase of \$43,900 for the Salaries and Expenses appropriation and \$550,000 for the Abatement, Control and Compliance appropriation. The increase in the Salaries and Expenses appropriation reflects increased personnel and support costs. The increase in the Abatement, Control and Compliance appropriation will support additional work related to the use of alternative fuels,

supporting the initiative established by the Vice President's Task Force, as well as attainment measures for ozone and carbon monoxide (CO) standards. The increase will also be used to address CO emission problems under cold temperature conditions.

In 1989 the standards program will continue to emphasize control of ozone precursors and air toxics. Standards development will focus on fuel and fuel additive testing protocols mandated by the Clean Air Act to assure identification of substances suspected of contributing to air toxics health effects prior to the introduction of the substances into widespread use. This effort will result in a proposed rule during 1989. Work will also ensure implementation support to the new methanol emission standards as well as to the on-board refueling regulations. The latter is expected to reduce hydrocarbon emissions by an additional two percent. Specific technology assessment work will focus on the implementation of the post-1987 ozone/CO attainment strategy. In addition, the emissions impact of alternative fuels, such as oxygenated blends and Compressed Natural Gas (CNG), will be investigated. Additional testing of in-use vehicles will assess the effectiveness of emission control technologies in controlling CO emissions under cold temperature conditions.

Implementation of the on-board refueling emissions control rule will require significant effort to bring a standard test procedure on line. The Agency will begin to define the requirements (based on experience gained in the development and promulgation of the rule) and implement a test procedure at the Motor Vehicle Emissions Laboratory (MVEL).

A Notice of Proposed Rulemaking (NPR) for controlling diesel fuel composition consistent with toxics particulate control will be published. Also, an NPR for heavy-duty emissions banking and trading will be considered for publication. In-use vehicle testing will continue to assess the emissions performance of the in-use fleet. Revised light-duty truck hydrocarbon standards will be promulgated. Work will continue on the assessment of heavy-duty diesel trap technology. Additional work will be done to insure the effectiveness of the enhanced vehicle inspection and maintenance (I/M) programs put into place by State and local jurisdictions. In addition, 15 audits and follow-ups of State and local I/M programs will be completed.

1988 Program

In 1988 the Agency is allocating a total of \$7,330,900 supported by 77.3 total workyears for this program, of which \$4,392,000 is from the Salaries and Expenses appropriation and \$2,938,900 is from the Abatement, Control and Compliance appropriation.

In 1988 the standards program is continuing to emphasize control of ozone precursors and air toxics. The regulatory program is continuing to concentrate on control of evaporative and refueling emissions, excess hydrocarbon emissions, formaldehyde, methanol, and particulates. Final emission standards and test procedures for methanol vehicles are being promulgated. Revised light-duty truck hydrocarbon standards are being proposed. Testing of in-use vehicles is continuing to assess the emissions performance of the in-use fleet. Work is continuing on the assessment of heavy-duty diesel trap technology with the implementation of a prototype electric trap regeneration system. Support to the development of State Implementation Plans is continuing with emphasis on I/M programs for in-use vehicles. A total of 15 formal audits and follow-ups of State and local I/M programs are being completed.

1987 Accomplishments

In 1987 the Agency obligated a total of \$6,698,700 supported by 77.5 total workyears, of which \$3,734,700 was from the Salaries and Expenses appropriation and \$2,964,000 was from the Abatement, Control and Compliance appropriation.

In support of the Agency's on-going ozone control efforts, the program proposed hydrocarbon emission standards for the refueling of automobiles and also fuel volatility standards. The program provided implementation assistance and review of State Implementation Plans, particularly I/M programs. In 1987 eight I/M audits were completed and 10 follow-up audits were carried out to assess the effectiveness of State and local efforts. Four new I/M programs were begun in 1987, bringing the total number of urban areas with inspection programs to 60.

In support of the Agency's air toxics control strategy, the regulatory program continued work on control of formaldehyde and particulate matter. Characterization of emissions from vehicles powered by alternative fuels also continued, including work on a rulemaking setting standards and test procedures for methanol-fueled vehicles. With the implementation of lead phasedown, additional work was directed towards alternatives to leaded gasoline. A systematic review of the heavy-duty standards for hydrocarbons, carbon monoxide, and particulate matter continued for potential future revision.

TESTING, TECHNICAL AND ADMINISTRATIVE SUPPORT

1989 Program Request

The Agency requests a total of \$6,112,200 supported by 92.9 total workyears for this program, of which \$5,262,200 will be for the Salaries and Expenses appropriation and \$850,200 will be for the Abatement, Control and Compliance appropriation. This represents an increase of \$52,100 in the Salaries and Expenses appropriation and no change in total workyears from 1988. The increase in the Salaries and Expenses appropriation reflects increased personnel and support costs.

This program will provide testing, technical, and administrative support to the operating programs of the Office of Mobile Sources at the MVEL located in Ann Arbor, Michigan. Approximately 1,000 tests will be performed on prototype vehicles, and 1,300 tests on in-use vehicles in support of the emissions factors and recall programs. In addition, 100 tests on new and in-use heavy-duty engines will be provided to support the implementation and enforcement of the standards for these engines. General activities that will be supported include recall, tampering and fuel switching, standard-setting, emissions characterization, technology assessment, fuel economy, in-use vehicle emissions assessment, and motor vehicle emission certification. The support that will be provided includes: automated data processing (ADP) timesharing services, laboratory data acquisition, and computer operations; testing of motor vehicles to measure emissions and fuel economy; quality assurance and control and correlation services for EPA and industry testing programs; maintenance and engineering design of emission testing equipment; and personnel, administrative, safety, and facilities support services. Testing and analysis of approximately 11,000 fuel samples collected for enforcement purposes will continue.

1988 Program

In 1988 the Agency is allocating a total of \$6,060,100 supported by 92.9 total workyears for this program, of which \$5,209,900 is from the Salaries and Expenses appropriation and \$850,200 is from the Abatement, Control and Compliance appropriation.

The 1988 program continues to focus on increasing the efficiency of the testing, technical, and administrative support operations while maintaining or expanding the quality and quantity of outputs.

Testing support to the certification, fuel economy, and in-use compliance and assessment programs continues with a total of approximately 2,300 tests scheduled for these programs in 1988. Testing activities supported at the MVEL range from performing standard, well-established engineering tests to the development and performance of new test procedures to accommodate new program needs or changing technology.

Routine testing and analysis of 11,000 fuel samples collected in the field for enforcing fuels regulations continues. Correlation programs to maintain equivalent test procedures between manufacturers and EPA continue. Test equipment maintenance, calibration, and repair services are being provided. The adequacy of existing procedures and equipment to test newer technology vehicles is being evaluated. If necessary, new equipment and procedures will be designed. In addition, personnel, facility support services, safety, ADP, and administrative management functions are provided at the MVEL.

1987 Accomplishments

In 1987 the Agency obligated a total of \$6,401,200 supported by 96.8 total workyears for this program, of which \$5,501,200 was from the Salaries and Expenses appropriation and \$900,000 was from the Abatement, Control and Compliance appropriation.

In 1987 a total of 980 tests were conducted for certification, fuel economy labeling, and compliance programs. Testing in support of the recall, surveillance, tampering/fuel switching programs; the development of emission factors; and the assessment of the effectiveness of new emissions control technology in maintaining the emission standards in-use resulted in 1,400 tests on 475 vehicles in 1987. Routine testing and analysis of 10,708 fuel samples (collected in the field) were performed in 1987 to enforce fuel regulations.

Basic personnel and administrative management functions, including ADP management were provided. Also, safety and facility services, aimed at maintaining a high level of occupational safety and health, were provided.

EMISSIONS AND FUEL ECONOMY COMPLIANCE

1989 Program Request

The Agency requests a total of \$1,869,800 supported by 33.1 total workyears for this program, of which \$1,836,700 will be for the Salaries and Expenses appropriation and \$33,100 will be for the Abatement, Control and Compliance appropriation. This represents an increase of \$18,200 in the Salaries and Expenses appropriation and no change in total workyears from 1988. The increase in the Salaries and Expenses appropriation reflects increased personnel and support costs.

The emissions certification program will continue to assess the validity of the applications for certification of approximately 100 original equipment manufacturers of light-duty vehicles, heavy-duty engines, and motorcycles. Participation in the certification program by importers reselling vehicles is expected to continue to increase as a result of new rules published in 1987. Approximately 40 certificate holders will be bringing non-conforming imports into compliance. In 1989, the in-use program will continue to stress the examination of control technology effectiveness at high mileage. Alternatives for improving the effectiveness of

the certification program in reducing high mileage in-use noncompliance will be identified, as will the possibilities for further cost reductions. Work will continue on suspected problems with manufacturers' alleged use of defeat devices and more testing will be done under non-Federal Test Procedure conditions to assess the degree to which emission control devices control emissions only on the standard test cycle and do not do so in actual on-road use. On-board refueling certification implementation will be started, including work on a certification standard test facility for compliance testing of manufacturers' prototype certification vehicles in order to assure that the two percent reduction of volatile organic compound (VOC) emissions associated with the rules is achieved. Also in 1989, the program plans to propose mobile source user fees.

The statutory fuel economy information program will be carried out, with the provision of 1,000 labels, 50 CAFE calculations, and data for the Gas Mileage Guide. Guidance to manufacturers on implementing changes required by revisions to the fuel economy regulations will continue.

1988 Program

In 1988 the Agency is allocating a total of \$1,851,600 supported by 33.1 total workyears for this program, of which \$1,818,500 is from the Salaries and Expenses appropriation and \$33,100 is from the Abatement, Control and Compliance appropriation.

The emissions certification program is continuing to issue certificates of compliance to approximately 100 original equipment manufacturers of light-duty vehicles, heavy-duty engines, and motorcycles. Participation in the certification program by importers reselling vehicles will begin to increase resulting from new rules being promulgated. Streamlined procedures for handling these new certificate holders will be developed. In 1988 the in-use program is placing further emphasis on assessment of high mileage vehicle control technology and the precise nature of failures to meet standards at high mileage. Work is also focusing on suspected problems with manufacturers' use of defeat devices, as well as on emissions under conditions different from the Federal Test Procedure. This additional engineering analysis will help assess the degree to which emission control devices differ relative to the standard test cycle versus actual on-road operational conditions. Procedures for certifying aftermarket parts will be promulgated. Also, the program is working towards development of a proposal for mobile source user fees.

The statutory fuel economy information program is being carried out, with 1,000 labels, 50 CAFE calculations, and data for the Gas Mileage Guide being produced. Guidance to manufacturers on implementing changes required by revisions to the fuel economy regulations is continuing.

1987 Accomplishments

In 1987 the Agency obligated a total of \$1,673,800 supported by 33.8 total workyears for this program, of which \$1,649,000 was from the Salaries and Expenses appropriation and \$24,800 was from the Abatement, Control and Compliance appropriation.

The emissions certification program issued certificates of compliance to approximately 100 original equipment manufacturers of light-duty vehicles, heavy-duty engines, and motorcycles. Certification engineering review continued to deter the production of vehicle designs not capable of meeting emission standards. Participation in the certification program by importers reselling vehicles continued to increase. In addition, a final rule revising and streamlining procedures

for the importation of non-conforming vehicles was developed. A regulation for aftermarket parts certification was proposed. The fuel economy program generated 1,170 fuel economy labels, verified 76 CAFE calculations, and compiled data for the Gas Mileage Guide. The in-use technology assessment program examined durability of control technology at high mileage.

AIR
State Programs Resource Assistance

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988
<hr/>						
(DOLLARS IN THOUSANDS)						

PROGRAM

Control Agency Resource
Supplementation
(Section 105 Grants)
Abatement Control and
Compliance

	\$94,570.1	\$95,000.0	\$92,668.4	\$92,603.4	\$95,000.0	\$2,396.6
TOTAL	\$94,570.1	\$95,000.0	\$92,668.4	\$92,603.4	\$95,000.0	\$2,396.6

Training
Salaries & Expenses

	\$250.3	\$258.0	\$250.2	\$250.2	\$252.7	\$2.5
TOTAL	\$250.3	\$258.0	\$250.2	\$250.2	\$252.7	\$2.5

TOTAL:

Salaries & Expenses
Abatement Control and
Compliance

	\$250.3	\$258.0	\$250.2	\$250.2	\$252.7	\$2.5
	\$94,570.1	\$95,000.0	\$92,668.4	\$92,603.4	\$95,000.0	\$2,396.6

State Programs
Resource Assistance

TOTAL	\$94,820.4	\$95,258.0	\$92,918.6	\$92,853.6	\$95,252.7	\$2,399.1
-------	------------	------------	------------	------------	------------	-----------

PERMANENT WORKYEARS

Training

4.0	4.0	4.0	4.0	4.0
-----	-----	-----	-----	-----

TOTAL PERMANENT WORKYEARS

4.0	4.0	4.0	4.0	4.0
-----	-----	-----	-----	-----

AIR
State Programs Resource Assistance

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988
<hr/>						
(DOLLARS IN THOUSANDS)						
<hr/>						
TOTAL WORKYEARS						
Training	4.2	4.0	4.0	4.0	4.0	
TOTAL WORKYEARS	4.2	4.0	4.0	4.0	4.0	

AIR

State Programs Resource Assistance

Budget Request

The Agency requests a total of \$95,252,700 supported by 4.0 total workyears for 1989, an increase of \$2,399,100 from 1988. Of the request, \$252,700 will be for the Salaries and Expenses appropriation and \$95,000,000 will be for the Abatement, Control and Compliance appropriation, an increase in the Salaries and Expenses appropriation of \$2,500 and an increase of \$2,396,600 in the Abatement, Control, and Compliance appropriation.

Program Description

This subactivity provides financial and training support to State and local air pollution control agencies, and to air quality programs for Indian lands for the prevention, abatement, and control of air pollution. The primary objective of this subactivity is to support the development and implementation of effective State and local programs for the attainment and maintenance of the National Ambient Air Quality Standards (NAAQSs), in accordance with provisions of the Clean Air Act.

Control Agency Resource Supplementation (Section 105 Grants) -- Direct grants to control agencies that have major roles in developing and carrying out programs under the Clean Air Act constitutes the major form of EPA resource assistance. Direct grants are supplemented by the training of State and local air pollution control personnel and the provision of services of contractors for specific tasks identified by the States and localities. The grants support State and local activities that develop State Implementation Plans (SIPs) for the attainment and maintenance of the NAAQSs; enforce source emission regulations and requirements contained within the SIPs; review and permit new sources; monitor ambient air quality for assessing environmental quality and progress; and develop data bases necessary for regulatory decisions. In addition, these funds promote the assumption and implementation of other Clean Air Act responsibilities, including those for the prevention of significant deterioration (PSD), protection of visibility, and the implementation of New Source Performance Standards (NSPSs) and National Emission Standards for Hazardous Air Pollutants (NESHAPs). Finally, these funds help control agencies to develop and enhance air toxics programs for assessing and mitigating exposures, consistent with the Agency's National Air Toxics Strategy.

Training -- Traditionally, resource assistance is further supplemented by the provision of training in specialized areas of air pollution control. New courses are developed as needed, and instructional materials are revised and updated and provided to university training centers. The EPA staff works with university centers to develop State and local self-sufficiency in training by offering courses at area training centers.

CONTROL AGENCY RESOURCE SUPPLEMENTATION (SECTION 105 GRANTS)

1989 Program Request

The Agency requests a total of \$95,000,000, all of which will be for the Abatement, Control, and Compliance appropriation. This represents an increase of \$2,396,600 to support State implementation of the post-1987 attainment policy for ozone and carbon monoxide.

In 1989, States will continue to focus on the three air pollution problems emphasized in 1988: addressing post-1987 ozone/carbon monoxide NAAQS nonattainment, meeting the revised NAAQSs for size-specific particulate matter (PM₁₀), and reducing exposure to air toxics. Efforts initiated in 1988 to correct existing regulations and programs, including the efforts to improve the inspection and compliance of sources of volatile organic compounds, will be continued. States will continue to prepare the revisions to their ozone/carbon monoxide SIPs required by the 1988 notifications, including the preparation of the required updates to baseline emission inventories. Efforts within the Northeast and Mid-Atlantic States to apply the regional oxidant model to identify transport and assess control options over large areas will be continued. States will work to prepare tracking systems for assessing emission reductions and attainment progress. For PM₁₀ States will complete and implement the required SIPs for most of the nonattainment areas (i.e., Group I Areas), perform necessary analyses and prepare SIPs, where required, for the other areas experiencing violations of the standards, and work to complete the PM₁₀ ambient monitoring network.

For toxics, States will continue to implement various elements of their multi-year plans for building and implementing programs to assess and reduce exposure to air toxic compounds. State and local agency efforts to assess and mitigate high individual risk from specific non-NESHAPs point sources will be continued. States will continue their analyses documenting exposures and sources within the 30 large urban areas. Work toward the development and review of mitigation measures within specific urban areas will proceed. Efforts to integrate air toxics considerations into regulatory programs for ozone and PM₁₀ will be strengthened. Also, States are expected to assume delegation from EPA and enforce newly promulgated NESHAPs.

Also, in 1989 States will continue to carry out key core activities essential to the operation and maintenance of effective air pollution regulatory programs. This includes the implementation of source surveillance and compliance programs aimed at assuring initial and continuous compliance by stationary sources with SIP requirements and NSPSs, providing "timely and appropriate" response to significant violations. States will operate the National Air Monitoring System (NAMS) and the State/local Air Monitoring System (SLAMS) networks and maintain quality assurance programs providing data on air quality levels, trends, and attainment status. States will continue to assume responsibility for the implementation of newly promulgated NSPSs and for the review and permitting of new sources, including those to which PSD requirements apply.

1988 Program

In 1988 the Agency is allocating a total of \$92,603,400 for this program, all of which is from the Abatement, Control, and Compliance appropriation.

In 1988 the major priorities of the program are: (1) implementation of the June 1985 National Air Toxics Strategy; (2) implementation of elements of the post-1987 ozone/CO strategy calling for correction and enhancement of existing programs in urban areas not meeting the 1987 attainment deadline; and (3) continuation of activities to implement the NAAQSs for PM₁₀ promulgated in 1987.

In 1988 States are carrying out key elements of the multi-year plans for the enhancement and implementation of air toxics programs consistent with the Air Toxics Strategy and EPA guidance. Principal activities include: (1) the enforcement of existing NESHAPs, including compliance with the asbestos demolition and renovation requirements; (2) the improvement of assessment capabilities and data bases needed to manage air toxics risks at the State and local levels; (3) the continuation of State programs for evaluating and mitigating exposures from specific

non-NESHAPs point sources causing high individual risk; (4) the assessment of complex, multi-pollutant/source air toxics problems within the 30 largest urbanized areas of the country; and (5) the review of selected mitigation measures in five urban areas.

To help attain the ozone and CO NAAQSs, States are carrying out steps to respond to the notifications issued by the Agency in 1988 of SIP inadequacies and calls for development of corrective SIPs in areas not meeting the December 1987 deadline. The steps include activities to (1) evaluate, correct, and ensure full application of existing regulations/programs; (2) improve inspection/ compliance activities for both large and small sources of volatile organic compounds (VOCs); (3) start preparing updates to baseline inventories and collecting additional ambient monitoring data, particularly for nonmethane hydrocarbons; (4) correct identified deficiencies in operating vehicle inspection/maintenance (I/M) programs; (5) expand program within the Northeast corridor and Middle Atlantic States to employ regional models where intercity transport will require controls over large geographic areas; and (6) improve staff and agency implementation capabilities. For PM₁₀, States are continuing to set up the ambient monitoring networks within the more significant PM₁₀ areas, to complete emissions inventories necessary for preparation of required SIPs, and to continue development of the required SIPs for the Group I and more significant Group II areas.

States are also carrying out inspection and source monitoring programs for assuring initial and continuous compliance by all major stationary sources, including timely and appropriate responses to violations. In addition, States are also continuing to fully operate and monitor the quality of the NAMS/SLAMS networks and to assume responsibility for newly promulgated NSPSs and NESHAPs.

1987 Accomplishments

In 1987 the Agency obligated a total of \$94,570,100 to this program, all of which was from the Abatement, Control, and Compliance appropriation.

In 1987 States continued to develop and implement the multiple regulatory programs for the attainment of the ozone and CO NAAQSs in the urban areas missing the 1982 deadlines or having extensions to 1987. States also commenced programs to review existing regulations and programs and to prepare corrections to SIPs and regulations where State/EPA reviews identified needed changes or new nonattainment problems were documented. States worked to prepare the data bases and develop PM₁₀ regulatory plans following promulgation of the NAAQSs in July 1987.

States continued to fully operate and monitor the quality of the NAMS/SLAMS networks. States continued to establish networks to collect data preparatory to regulatory decisions and the development of required PM₁₀ SIPs, including the purchase of additional monitoring equipment for determining PM₁₀ levels in probable nonattainment areas.

States carried out their inspection and source monitoring programs for assuring initial and continuous compliance by stationary sources, including the provision of timely and appropriate response to violations. Emphasis was placed on violating

sources of VOCs and sources subject to NESHAPs, including enforcement of asbestos demolition and renovation requirements. Grant resources also supported corrections to existing I/M programs and development of anti-tampering programs.

States began to carry out the key elements of their multi-year plans for the enhancement and implementation of air toxics programs consistent with the Air Toxics Strategy and EPA guidance. These included efforts to assess exposures from non-NESHAPs sources with high individual risk and identify air toxics problems in major urban areas.

TRAINING

1989 Program Request

The Agency requests a total of \$252,700 supported by 4.0 total workyears for this program, all of which will be for the Salaries and Expenses appropriation. This request represents an increase of \$2,500 in the Salaries and Expenses appropriation, reflecting increased personnel and support costs.

In 1989 EPA will continue to manage the self-study training program. Technical support will be provided to States and Regions planning workshops and training courses. In addition, existing courses will be updated, using in-house skills.

1988 Program

In 1988 the Agency is allocating a total of \$250,200 supported by 4.0 total workyears for this program, all of which is from the Salaries and Expenses appropriation.

Activities in 1988 include management of the self-study training program, technical support to States and Regions planning workshops and training courses, and updating of existing courses using in-house skills.

1987 Accomplishments

In 1987 the Agency obligated a total of \$250,300 supported by 4.0 total workyears for this program, all of which was from the Salaries and Expenses appropriation.

In 1987 a total of 35 training courses were conducted covering 20 subject areas for 864 students and six area training centers and in Regional locations. Support was also provided for eight control agency employees. In addition, three new courses were prepared and two existing courses were revised. Also, revised self-instructional correspondence and classroom courses were prepared and made available to 1,427 students.

AIR
Air Quality Management Implementation

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988
----- (DOLLARS IN THOUSANDS) -----						
PROGRAM -----						
Air Quality Management Implementation						
Salaries & Expenses	\$12,043.8	\$13,111.2	\$12,476.7	\$12,476.7	\$12,575.4	\$98.7
Abatement Control and Compliance	\$549.2	\$294.6	\$294.6	\$294.6	\$294.6	
TOTAL	\$12,593.0	\$13,405.8	\$12,771.3	\$12,771.3	\$12,870.0	\$98.7
TOTAL:						
Salaries & Expenses	\$12,043.8	\$13,111.2	\$12,476.7	\$12,476.7	\$12,575.4	\$98.7
Abatement Control and Compliance	\$549.2	\$294.6	\$294.6	\$294.6	\$294.6	
Air Quality Management TOTAL Implementation	\$12,593.0	\$13,405.8	\$12,771.3	\$12,771.3	\$12,870.0	\$98.7
PERMANENT WORKYEARS -----						
Air Quality Management Implementation	271.0	293.3	293.3	270.4	288.3	17.9
TOTAL PERMANENT WORKYEARS	271.0	293.3	293.3	270.4	288.3	17.9

AIR
Air Quality Management Implementation

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988
<hr/>						
	(DOLLARS IN THOUSANDS)					
TOTAL WORKYEARS	<hr/>					
Air Quality Management Implementation	289.0	293.3	293.3	286.6	288.3	1.7
TOTAL WORKYEARS	289.0	293.3	293.3	286.6	288.3	1.7

Air Quality Management Implementation

Budget Request

The Agency requests a total of \$12,870,000 supported by 288.3 total workyears for 1989, an increase of \$98,700 and 1.7 total workyears from 1988. Of the request, \$12,575,400 will be for the Salaries and Expenses appropriation and \$294,600 will be for the Abatement, Control and Compliance appropriation, representing an increase of \$98,700 in the Salaries and Expenses appropriation and no change in the Abatement, Control, and Compliance appropriation.

Program Description

This subactivity provides resources for the operation and maintenance of an air quality management program in each of the Agency's ten Regional Offices. Under the Clean Air Act, the States have primary responsibility for preparing attainment strategies and meeting the commitments for the development and implementation of multiple regulatory programs essential to the attainment and maintenance of National Ambient Air Quality Standards (NAAQSs). State strategies and programs have to be revised when NAAQSs are modified, new standards are established, or deficiencies within the strategies are identified. The Regional program, in partnership with State and local air pollution control agencies, has a major responsibility for implementing the requirements of the Clean Air Act and related EPA regulations governing the attainment and maintenance of the NAAQSs. The air management program provides policy guidance and technical consultation to States, helping them to prepare the strategies and regulatory programs. The program also conducts the necessary regulatory review and coordination for approval within the Federal Register of individual strategies and regulations in State Implementation plans (SIPs) submitted to EPA. The program also plays the principal role in negotiating air quality program grants to State and local control agencies and auditing the progress and effectiveness of these agencies in developing, implementing, and enforcing regulatory programs. The program has major responsibilities for helping States develop and implement programs to assess and mitigate air toxics exposures, as required by the Agency's National Air Toxics Strategy.

AIR QUALITY MANAGEMENT IMPLEMENTATION1989 Program Request

The Agency requests a total of \$12,870,000 supported by 288.3 total workyears for this program, of which \$12,575,400 will be for the Salaries and Expenses appropriation and \$294,600 will be for the Abatement, Control and Compliance appropriation. This represents an increase of \$98,700 in the Salaries and Expenses appropriation and an increase of 1.7 total workyears. The increase reflects support to States implementing the post-1987 attainment policy for ozone and carbon monoxide.

In 1989 the major focus of the program will be to assist States in the implementation of the post-1987 strategy for correcting ozone and carbon monoxide nonattainment problems; the NAAQSs for size-specific particulate matter (PM₁₀) and the national strategy for air toxics. For ozone and carbon monoxide, efforts initiated in 1988 to assess, correct, and improve existing regulations and programs will be continued. Regions will provide detailed guidance and support to

the more serious nonattainment areas to help them develop necessary baseline inventories and prepare required revisions to the SIPs on schedule. In addition, efforts to apply the regional oxidant model in the Northeast and Mid-Atlantic States will continue in 1989. Regions will continue to review and prepare rulemaking actions on State submissions from the Group I and Group II PM₁₀ areas.

States will proceed to implement the various elements of their multi-year plans for improving and conducting air toxics programs. Regions will assist and periodically review and document State progress in meeting plan commitments. Efforts within urban areas will move more toward the identification of specific measures to mitigate urban exposures and expand the number of areas initiating actions. The Regions will work with State and local agencies to identify and integrate toxics considerations into current programs for the review and permitting of new sources and regulatory programs for ozone and PM₁₀ to maximize potential mitigation of air toxics exposures.

The National Air Audit system will be implemented. Programs to oversee State implementation of delegated programs for the regulation of new sources will be improved. Performance-based grants will be negotiated and oversight maintained. Major SIPs will be reviewed and processed as expeditiously as possible. Efforts to improve the processing of SIPs consistent with the Agency's newly developed strategy will be carried out. Extramural dollars will continue to support interagency agreements with the National Oceanic and Atmospheric Administration for detail to three Regional Offices of meteorologists who provide modeling expertise to the Region and States.

1988 Program

The Agency is allocating a total of \$12,771,300 supported by 286.6 total workyears for this program, of which \$12,476,700 is from the Salaries and Expenses appropriation and \$294,600 is from the Abatement, Control and Compliance appropriation.

In 1988 the major priorities are assisting and overseeing State programs for: (1) correction of existing SIPs and control measures in areas not meeting the 1987 attainment deadline for the ozone and carbon monoxide NAAQSs; (2) implementation of the NAAQSs for PM₁₀; and (3) implementation of the June 1985 National Air Toxics Strategy.

Consistent with the post-1987 strategy for ozone and carbon monoxide, Regions are notifying States of needed revisions to current State Implementation Plans (SIPs). The Regions are guiding States developing SIPs required by the EPA notifications within the post-1987 nonattainment areas. Regions are working with States to update baseline inventories and data bases and to develop appropriate corrective SIPs and control measures. Regions are working with the States in the Northeast corridor and Mid-Atlantic region to employ the regional oxidant model where intercity transport will require controls over large geographic areas. Major guidance and support is also being provided to help States complete SIPs to meet the NAAQSs for PM₁₀ within the 180 Group I and II areas. Regions are to commence review and rulemaking actions on the PM₁₀ plans submitted by the States.

Consistent with the National Air Toxics Strategy, programs are being undertaken to significantly help States implement multi-year plans for improving and conducting air toxics programs. Efforts in 1988 are focusing on helping States to: (1) improve assessment capabilities and data bases to manage air toxics risks; (2) improve efforts in the agencies having plan commitments to evaluate and mitigate exposures

from non-NESHAPs point sources with high individual risk; (3) complete initial screening programs to identify and assess complex air toxics problems within 30 large urban areas; and (4) continue pilot programs for mitigating toxics exposures within five selected urban areas.

A new cycle for the biennial National Air Audit System is commencing in 1988. Regions will work with States to identify key deficiencies in State programs in order to improve program performance. Regions are also negotiating grant agreements with States, implementing Agency policy on performance-based grants and overseeing grantee performance in meeting commitments and schedules.

1987 Accomplishments

In 1987 the Agency obligated a total of \$12,593,000 supported by 289.0 total workyears for this program, of which \$12,043,800 was from the Salaries and Expenses appropriation and \$549,200 was from the Abatement, Control, and Compliance appropriation.

During 1987 the Regional air management program continued to focus on the implementation of the Agency's post-1982 attainment policy for remedying deficient SIPs in areas violating the NAAQSs. Assistance was provided to States developing various SIPs and regulatory measures. States' SIPs were reviewed for consistency and appropriate Federal Register actions were completed. Also, guidance and technical expertise were provided to help States define requirements, assess possible problems, and prepare to respond to the NAAQSs for PM₁₀ promulgated in July 1987. Consistent with the National Air Toxics Strategy, initiatives were undertaken to help States prepare, revise, and implement multi-year plans to build and enhance air toxics programs and to gather data needed to assess specific high risk pollutant or source situations.

Other significant actions included working with the States to correct key deficiencies identified in the 1986 National Air Audits. Steps were taken to negotiate effective grant agreements with State and local agencies implementing Agency policy on performance-based grants.

AIR
Trends Monitoring & Progress Assessment

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988	

(DOLLARS IN THOUSANDS)							

PROGRAM							

Ambient Air Quality Monitoring							
Salaries & Expenses	\$3,553.7	\$3,922.5	\$3,702.6	\$3,702.6	\$3,502.6	-\$200.0	
Abatement Control and Compliance	\$224.8	\$114.2	\$114.2	\$114.2	\$114.2		
TOTAL	\$3,778.5	\$4,036.7	\$3,816.8	\$3,816.8	\$3,616.8	-\$200.0	
Air Quality & Emissions Data Management & Analysis							
Salaries & Expenses	\$3,454.6	\$3,455.1	\$3,534.6	\$3,534.6	\$3,750.4	\$215.8	
Abatement Control and Compliance	\$3,184.5	\$1,161.2	\$1,161.2	\$1,564.4	\$3,599.4	\$2,035.0	
TOTAL	\$6,639.1	\$4,616.3	\$4,695.8	\$5,099.0	\$7,349.8	\$2,250.8	
TOTAL:							
Salaries & Expenses	\$7,008.3	\$7,377.6	\$7,237.2	\$7,237.2	\$7,253.0	\$15.8	
Abatement Control and Compliance	\$3,409.3	\$1,275.4	\$1,275.4	\$1,678.6	\$3,713.6	\$2,035.0	
Trends Monitoring & Progress Assessment	TOTAL	\$10,417.6	\$8,653.0	\$8,512.6	\$8,915.8	\$10,966.6	\$2,050.8

PERMANENT WORKYEARS							

Ambient Air Quality Monitoring	81.0	92.5	92.5	85.3	87.5	2.2	

AIR
Trends Monitoring & Progress Assessment

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988

	(DOLLARS IN THOUSANDS)					
Air Quality & Emissions Data Management & Analysis	63.5	65.6	65.6	67.1	70.6	3.5
TOTAL PERMANENT WORKYEARS	144.5	158.1	158.1	152.4	158.1	5.7
TOTAL WORKYEARS	-----					
Ambient Air Quality Monitoring	87.7	92.5	92.5	92.5	87.5	-5.0
Air Quality & Emissions Data Management & Analysis	65.6	65.6	65.6	67.1	70.6	3.5
TOTAL WORKYEARS	153.3	158.1	158.1	159.6	158.1	-1.5

Trends Monitoring and Progress Assessment

Budget Request

The Agency requests a total of \$10,966,600 supported by 158.1 total workyears for 1989, reflecting an increase of \$2,050,800 and a decrease of 1.5 total workyears from 1988. Of the request \$7,253,000 will be for the Salaries and Expenses appropriation and \$3,713,600 will be for the Abatement, Control and Compliance appropriation, an increase of \$15,800 for Salaries and Expenses appropriation and an increase of \$2,035,000 in the Abatement, Control and Compliance appropriation.

Program Description

This subactivity includes the following programs:

Ambient Air Quality Monitoring -- Activities in this program include: (1) EPA's management overview of State ambient air quality monitoring networks, associated laboratory and field quality assurance activities, and implementation of air monitoring strategies described in EPA air monitoring regulations; (2) the coordination of Regional and State field investigation activities for collecting ambient air quality samples for subsequent sample analysis and related quality control; (3) the review of source emissions data; and (4) the necessary management and coordination to ensure timely storage and validation of the data collected.

Air Quality and Emissions Data Management and Analysis -- Major activities include: (1) national coordination of Regional Office, State, and local ambient monitoring, air quality modeling, and emission inventory programs; (2) issuance of new and revised regulatory requirements and related technical guidance; (3) development and operation of information management systems for storing, retrieving, and analyzing ambient air quality and emission data at the State and national level; and (4) preparation of trends analyses and related air quality and emission progress assessments for program evaluation and development and for public information needs.

AMBIENT AIR QUALITY MONITORING1989 Program Request

The Agency requests a total of \$3,616,800 supported by 87.5 total workyears for this program, of which \$3,502,600 will be for the Salaries and Expenses appropriation and \$114,200 will be for the Abatement, Control and Compliance appropriation. This represents a decrease of \$200,000 in the Salaries and Expenses appropriation, no change in the Abatement, Control and Compliance appropriation and a decrease of 5.0 total workyears. The decrease reflects the reduced frequency of audits of State and local air quality monitoring programs and the transition from total suspended particulate (TSP) monitoring to PM₁₀ monitoring only.

In 1989 the ten EPA Regional Offices will continue overview and management of State air monitoring programs. Part of the overview and management will include section 105 grants review. They will also continue the coordination of air data bases involving emission data, criteria pollutant air quality data and related precision and accuracy information necessary for quantifying data quality.

The data bases from the National Air Monitoring System (NAMS) and the State and Local Air Monitoring System (SLAMS) networks will be validated for completeness and accuracy. Any new or revised NAMS sites will be visited, evaluated, and approved. Data analyses, including air quality trend information, will be developed as input to the Regional Trends Reports. In the area of quality assurance, significant resources will be used for on-site systems audits of State networks and monitors. Regional laboratories will continue to participate in the national air audit program. The start-up of State size-specific particulate matter (PM₁₀) networks will continue with review of the NAMS/SLAMS network and site visits to verify compliance with 40 CFR 58 monitoring regulations. The reviews of PM₁₀ network descriptions begun in 1988 should be largely completed by the end of 1989, but reviews of ambient data and sampling frequency will continue at a high level to support attainment determinations and on possible control strategies in additional areas.

Regions will be involved in the implementation of the Toxics Air Monitoring System (TAMS) in cooperation with the Office of Research and Development and State/Local agencies.

Resources will also be used to provide monitoring/quality assurance support and technical assistance to States in evaluating the impact of sources of specific toxic air pollutants. The sources would be ones considered for regulation under State control programs. A high level of support will be continued to programs to upgrade and update data bases for carbon monoxide and ozone nonattainment areas. In the area of air toxics, resources will be used for management, coordination, and technical assistance necessary to develop a toxics emission data base in about 30 geographic areas. Technical assistance and support will be provided to improve the capabilities of State/local monitoring operations.

1988 Program

In 1988 the Agency is allocating a total of \$3,816,800 supported by 92.5 total workyears for this program, of which \$3,702,600 is from the Salaries and Expenses appropriation and \$114,200 is from the Abatement, Control and Compliance appropriation.

In 1988 the Regions are continuing the baseline program of overview and management of State emissions and air quality monitoring programs. The Regions are also continuing their program of on-site visits to review/audit NAMS networks and a small percentage of SLAMS networks. The validation, management, and coordination of State and local air quality and emission data bases before they are submitted to EPA central data banks also continues. In 1988 special emphasis is being placed on refining network descriptions for both NAMS and SLAMS to ensure that they meet all monitoring objectives and the criteria contained in 40 CFR 58. The Regions and States are expected to complete their analysis of the total SLAMS monitoring network needed to support PM₁₀ State Implementation Plan development and subsequent tracking of progress and trends and to continue network implementation efforts.

To support the development of post-1987 ozone/carbon monoxide State Implementation Plans (SIPs), Regional Office efforts to improve the quality and timeliness of ambient and emission data bases are being increased over 1987 levels. Quality assurance activities and State audits are continuing with additional emphasis placed on the National Air Audit System (NAAS).

1987 Accomplishments

In 1987 the Agency obligated \$3,778,500 supported by 87.7 total workyears, of which \$3,553,700 was from the Salaries and Expenses appropriation and \$224,800 was from the Abatement, Control and Compliance appropriation. Contract funds from the Abatement, Control and Compliance appropriation were used for Regional data analysis.

The SLAMS networks were reviewed and an assessment of equipment needs was made for carbon monoxide and ozone monitoring. The Regional Offices continued to work with States, through the annual review process, in identifying and eliminating air monitoring sites that have only marginal utility or are the least useful in supporting program decisions. The Regions continued their programs of site visits to evaluate and document NAMS stations, as well as a small percentage of SLAMS stations. Laboratories were evaluated for proper operating and quality assurance procedures. The management, coordination, and validation of State and local air quality and emission data before submission to EPA's central data banks also continued. In 1987, special emphasis was placed on reviewing the data bases upon which attainment status determinations will be made for the revised National Ambient Air Quality Standards (NAAQSs) for PM₁₀. The TAMS network continued to be operated in three cities, with a fourth city selected and scheduled for start-up in 1988.

AIR QUALITY AND EMISSIONS DATA MANAGEMENT AND ANALYSIS

1989 Program Request

The Agency requests a total of \$7,349,800 supported by 70.6 total workyears for this program, of which \$3,750,400 will be for the Salaries and Expenses appropriation and \$3,599,400 will be for the Abatement, Control and Compliance appropriation. This represents increases of \$215,800 in the Salaries and Expenses appropriation, \$2,035,00 in the Abatement, Control and Compliance appropriation and an increase of 3.5 total workyears. The increase in Salaries and Expenses is associated with increased personnel and support costs as well as for reprogramming for regional ozone modeling, while the increase for Abatement, Control and Compliance will allow the development of expanded retrieval and analysis capabilities for the Aerometric and Information and Retrieval (AIRS) Air Quality Subsystem, the completion of basic software for the AIRS Facility Subsystem, and training and operational support to Regional Office, State and local users of these systems. Additional resources will also allow for the development of emission factors and guidance to prepare emission inventories needed for the post-1987 ozone/carbon monoxide SIPs and for development of data bases and testing of control strategies to apply the regional oxidant model to the Northeast and Mid-Atlantic States.

The existing air data systems will be maintained and guidance provided to users. Monitoring regulations, modeling guidance, emission factors, and computer software will be modified to accommodate changes to the NAAQSs. The program will provide specialized scientific data and guidance to States developing SIPs for the revised NAAQSs for PM₁₀. The program will also develop data and technical guidance to support new and revised NAAQSs, with emphasis on rural ozone and fine particulates. Specialized analyses will also be conducted to assist in resolving remaining post-1987 nonattainment problems including efforts to develop and test strategies for controlling ozone precursors in the Northeast and Mid-Atlantic States through application of regional transport analyses, development of emission factors and inventory guidance, and provision of modeling support to States developing ozone SIPs. The modeling program will continue with active implementation of the modeling guideline; guidance and oversight of modeling applications; impact analyses to

support New Source Performance Standards (NSPSs), National Emission Standards for Hazardous Air Pollutants (NESHAPs), and NAAQSs development; and operation of the modeling clearinghouse. The program will also produce ambient and emission trends analyses and progress assessments, provide national oversight of Regional Office and State and local monitoring programs, and manage the NAMS network. Development of a fine particulate monitoring strategy will be continued. The program will also continue development of the facility subsystem of the AIRS and provide initial access provided to Regional Office and other EPA users. Support of the AIRS air quality subsystem will be provided to the initial twenty users, and arrangements for adding eight to twelve additional agencies will be initiated. A comprehensive user support program with extensive documentation and on-site training will be implemented.

In the area of air toxics, implementation of the Agency's National Air Toxics Strategy will continue with the development of guidelines on ambient monitoring and on estimating emissions and developing emissions inventories for several pollutants and/or source categories of concern to State or local agencies. The program will continue to implement the national toxic monitoring strategy. During 1989 the program will continue to provide guidance and management of State/local efforts to identify and quantify ambient air and emissions levels of toxic pollutants in 30 urban areas, manage prototype analyses in selected cities, conduct workshops on planning programs to characterize and quantify the toxics problems within a city, and develop guidance to relate volatile organic compound (VOC) species to selected toxic air pollutants. Efforts to provide guidance on the application of air quality screening models for selected toxic pollutants will be expanded.

1988 Program

In 1988 the Agency is allocating a total of \$5,099,000 supported by 67.1 total workyears for this program, of which \$3,534,600 is from the Salaries and Expenses appropriation and \$1,564,400 is from the Abatement, Control and Compliance appropriation.

During 1988 the program is focusing on five priority areas: (1) providing support to the Regional Offices and initial State users of the air quality subsystem of AIRS and continuing system design and software development for the facility subsystem of AIRS; (2) providing guidance consultation on techniques required to assess attainment of the NAAQSs for PM_{10} and on the technical procedures for design and documentation of PM_{10} networks and use of PM_{10} emission factors; (3) providing support to the post-1987 ozone/carbon monoxide program through consultation/review of model applications and inventories under development; (4) initiating a project to assess and evaluate ozone and precursor transport problems in the Northeast and Middle Atlantic States; and (5) continued national management of State/local efforts to assess and control the air toxics problem in selected urban areas.

Implementation of the toxic ambient monitoring strategy is continuing with the expansion of the TAMS network from three to four cities and with evaluation of the "urban mixtures" problem. Emission factors for toxic compounds and guidance on toxic inventories are being issued. The modeling program is being maintained. Operation of the model clearinghouse and photochemical and dispersion modeling guidance activities are continuing. Diffusion modeling is also continuing for all pollutants regulated by NAAQSs. For ozone, the models used to determine the degree of control required in nonattainment areas are being refined and procedures implemented to minimize their misapplication. The program is also continuing to provide national oversight and management of the SLAMS/NAMS networks.

1987 Accomplishments

In 1987 the Agency obligated \$6,639,100 supported by 65.6 total workyears for this program, of which \$3,454,600 was from the Salaries and Expenses appropriation and \$3,184,500 from the Abatement, Control and Compliance appropriation.

In 1987 emphasis continued on operating the existing air data systems and on providing support to 35 State and local agencies using EPA developed data systems. Other major activities included: national oversight of State and local monitoring programs including on-site audits of 22 NAMS monitors and 10 potential PM₁₀ sites, and modeling guidance and support including operation of the control strategies clearinghouse. The emissions program concentrated on issuing PM₁₀ emission factors and managing Regional Office and State efforts to develop an emissions data base for acid precipitation assessments. Diffusion modeling support continued for estimating the effect of toxic emissions on the environment as the Agency's Air Toxics Strategy was implemented. Development of the AIRS air quality subsystem continued with six States trained and brought on-line, and development of the facility subsystem continued.

ENVIRONMENTAL PROTECTION AGENCY

1989 Budget Estimate

Table of Contents

<u>AIR</u>	<u>Page</u>
ENFORCEMENT	
Stationary Source Enforcement.....	A-59
Mobile Source Enforcement.....	A-64

AIR
Stationary Source Enforcement

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988	
----- (DOLLARS IN THOUSANDS) -----							
PROGRAM -----							
Stationary Source Enforcement							
Salaries & Expenses	\$11,528.9	\$13,158.4	\$12,595.8	\$12,595.8	\$12,718.0	\$122.2	
Abatement Control and Compliance	\$3,001.0	\$2,830.1	\$2,830.1	\$2,830.1	\$3,180.1	\$350.0	
TOTAL	\$14,529.9	\$15,988.5	\$15,425.9	\$15,425.9	\$15,898.1	\$472.2	
TOTAL:							
Salaries & Expenses	\$11,528.9	\$13,158.4	\$12,595.8	\$12,595.8	\$12,718.0	\$122.2	
Abatement Control and Compliance	\$3,001.0	\$2,830.1	\$2,830.1	\$2,830.1	\$3,180.1	\$350.0	
Stationary Source Enforcement	TOTAL	\$14,529.9	\$15,988.5	\$15,425.9	\$15,425.9	\$15,898.1	\$472.2
PERMANENT WORKYEARS -----							
Stationary Source Enforcement	276.4	316.4	316.4	294.6	314.4	19.8	
TOTAL PERMANENT WORKYEARS	276.4	316.4	316.4	294.6	314.4	19.8	

AIR
Stationary Source Enforcement

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988
<hr/>						
(DOLLARS IN THOUSANDS)						
TOTAL WORKYEARS						

Stationary Source Enforcement	293.4	316.4	316.4	311.1	314.4	3.3
TOTAL WORKYEARS	293.4	316.4	316.4	311.1	314.4	3.3

AIR

Stationary Source Enforcement

Budget Request

The Agency requests a total of \$15,898,100 supported by 314.4 total workyears for 1989, an increase of \$472,200 and 3.3 total workyears from 1988. Of the request, \$12,718,000 will be for the Salaries and Expenses appropriation and \$3,180,100 will be for the Abatement, Control and Compliance appropriation, representing increases of \$122,200 and \$350,000, respectively.

Program Description

The stationary source enforcement program provides direct Federal enforcement, together with support to and coordination with State and local air pollution agencies, as required to ensure that stationary sources achieve and maintain compliance with the requirements of the Clean Air Act. The EPA Headquarters component provides national policy and guidance, while the Regional Office program implements the enforcement effort and bolsters State activity.

Stationary Source Enforcement -- This program focuses primarily on enforcement of the requirements established in State Implementation Plans (SIPs) for meeting National Ambient Air Quality Standards (NAAQSs). The enforcement program also focuses on new source programs such as New Source Performance Standards (NSPSs) and National Emission Standards for Hazardous Air Pollutants (NESHAPs).

As a result of industry efforts in controlling emissions and the effectiveness of State, local, and Federal control programs, approximately 90 percent of the more than 26,000 largest stationary sources have achieved compliance with all applicable emission limitations. Although the current rate of compliance represents a significant achievement, efforts must continue to ensure that remaining sources come into compliance with present standards, that compliance is obtained with any new or revised standards, and that compliance is maintained. EPA will continue to provide State and local agencies with technical support in their efforts to realize these goals and, where appropriate, initiate its own enforcement actions.

STATIONARY SOURCE ENFORCEMENT

1989 Program Request

The Agency requests a total of \$15,898,100 supported by 314.4 total workyears for this program, of which \$12,718,000 will be for the Salaries and Expenses appropriation and \$3,180,100 will be for the Abatement, Control and Compliance appropriation. This represents an increase of \$122,200 in the Salaries and Expenses appropriation, an increase of \$350,000 in the Abatement, Control and Compliance appropriation, and an increase of 3.3 total workyears. The increases reflect initiatives to evaluate volatile organic compound (VOC) rule effectiveness in ozone nonattainment areas.

In 1989 the stationary source compliance program will continue its compliance monitoring and enforcement efforts to ensure (in concert with the States) the compliance of SIP, NSPS, and NESHAPs sources. The focus of the program will be on addressing sources in nonattainment areas, with particular emphasis on VOC sources in ozone nonattainment areas. Implementation of the strategies for the NESHAPs for asbestos demolition and renovation program and for vinyl chloride will continue, as will initiatives to enforce the other NESHAPs. An implementation strategy for the hazardous organic compound NESHAPs program will also be developed. There are plans to conduct 60 NESHAPs inspections.

In 1989 this program will continue a comprehensive program to determine the effectiveness of VOC rules. This program will initiate a new compliance monitoring and inspection targeting program that will ensure better utilization of inspection resources. Data from VOC sources will be collected by inspections and other means and evaluated to determine efficiency of control methods, actual compliance rates, and actual size of inventory. This effort will complement the rule effectiveness evaluation initiative in the air quality management implementation program and is an integral component of the Agency's post-1987 ozone strategy. This effort will provide resources for 12 ozone nonattainment area assessments. Workshop and technical support activities will be directed at improving efforts in ozone nonattainment areas. The initiative to enhance VOC compliance in ozone nonattainment areas, including addressing small VOC sources, will continue in 1989. In the VOC program, there are plans to conduct 951 inspections, to issue 70 administrative orders, and to initiate 38 litigation referrals.

- In 1989 this program will continue to review proposed PM₁₀ SIPs for enforceability and ensure compliance by sources subject to newly promulgated PM₁₀ SIPs. In the particulate program, there are plans to conduct 521 inspections, issue 33 administrative orders, and make 19 litigation referrals. Also in 1989, enforcement of continuous emission monitoring (CEM) requirements for sulfur dioxide (SO₂) and other sources will continue. In the (SO₂) program, there are plans to conduct 328 inspections, issue 19 administrative orders, and make 16 litigation referrals.

In 1989 EPA Headquarters will develop policy guidance and planning and budgeting materials; review selected Regional activities and Regional program performance; assure the enforceability of proposed Agency regulations under NSPSs, NESHAPs, and New Source/prevention of significant deterioration (PSD) programs; respond to formal inquiries; manage the Compliance Data System (CDS); develop workshops, manuals, and pilot studies; and manage a program to provide technical analysis and case support for Regional compliance activities. In addition, Headquarters will be involved in the implementation of the woodstove NSPS program. This will involve implementing a laboratory audit program, accrediting laboratories, and overseeing woodstove certification. Approximately 250 woodstove production lines will require certification in 1989. Implementation efforts will also include conducting parameter inspections at retail outlets.

During 1989 the Federal compliance program will continue to provide assistance in selected Federal judicial referrals, consent decrees, and section 120 actions. The Regional Offices will also provide training and workshops for State inspectors and support development of local compliance strategies.

1988 Program

The Agency is allocating a total of \$15,425,900 supported by 311.1 total workyears for this program, of which \$12,595,800 is from the Salaries and Expenses appropriation and \$2,830,100 is from the Abatement, Control and Compliance appropriation.

The major focus of the stationary source program in 1988 is to ensure that noncomplying significant violators are brought into compliance. This program is continuing oversight of the Regional programs to ensure national consistency and effectiveness through a combination of a comprehensive programmatic review and a review of certain classes of enforcement actions. This program is continuing to assure the enforceability of proposed EPA regulations; manage the CDS, including CDS activities related to the development of the new Aerometric Information Retrieval System (AIRS); manage the contract support program; develop technical and program guidance; and conduct planning and budgeting activities. A major activity in 1988 is working jointly with State and local pollution control agencies to develop a compliance monitoring and inspection targeting program that allows Regional Offices and State and local agencies to better utilize their inspection resources.

In 1988 the Regional air compliance program will continue to monitor and ensure the compliance of the 26,000 largest stationary sources, the 2,500 NSPS sources, and the 1,500 nontransitory NESHAPs sources. Implementation of the NESHAPs program for asbestos demolition and renovation, addressing approximately 40,000 notifications, will continue. Efforts to improve working relationships with State and local air pollution agencies and to improve their technical capabilities are continuing. Federal enforcement actions, where required, are focusing heavily on violating sources in nonattainment areas, with particular emphasis on VOC sources. The program is developing guidance for implementing a comprehensive program to determine whether adopted VOC measures are being effectively implemented. This program will review proposed PM₁₀ SIPs for enforceability and ensuring no backsliding from existing total suspended particulate requirements and ensuring SO₂ sources meet CEM requirements.

1987 Accomplishments

In 1987 the Agency obligated a total of \$14,529,900 supported by 293.4 total workyears for this program, of which \$11,528,900 was from the Salaries and Expenses appropriation and \$3,001,000 was from the Abatement, Control, and Compliance appropriation. Extramural resources were used for enforcement case development activities, compliance monitoring, Regional data management, development of technical workshops, and manuals to enhance State and local program capabilities, and limited direct case assistance to States.

Major Headquarters accomplishments included: development of the NSPS woodstove implementation program; completion of the VOC calculation and recordkeeping guide; initiation of a comprehensive VOC training program; and completion of the small VOC source compliance strategy.

Other major Headquarters program accomplishments in 1987 included: review of proposed Agency regulations under NSPSs, NESHAPs, and new source/PSD programs; management of the CDS; support of State compliance data program development; provision of technical analysis and case support for Regional Office compliance activities, and development of technical workshops to enhance the capabilities of State and local programs. Also during 1987, EPA issued 112 administrative orders and conducted 1,680 inspections.

AIR
Mobile Source Enforcement

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988	
----- (DOLLARS IN THOUSANDS) -----							
PROGRAM -----							
Mobile Source Enforcement							
Salaries & Expenses	\$5,334.5	\$5,491.0	\$5,410.8	\$5,410.8	\$5,464.9	\$54.1	
Abatement Control and Compliance	\$1,928.1	\$1,909.6	\$1,909.6	\$1,909.6	\$2,309.6	\$400.0	
TOTAL	\$7,262.6	\$7,400.6	\$7,320.4	\$7,320.4	\$7,774.5	\$454.1	
TOTAL:							
Salaries & Expenses	\$5,334.5	\$5,491.0	\$5,410.8	\$5,410.8	\$5,464.9	\$54.1	
Abatement Control and Compliance	\$1,928.1	\$1,909.6	\$1,909.6	\$1,909.6	\$2,309.6	\$400.0	
Mobile Source Enforcement	TOTAL	\$7,262.6	\$7,400.6	\$7,320.4	\$7,320.4	\$7,774.5	\$454.1
PERMANENT WORKYEARS -----							
Mobile Source Enforcement	97.0	106.6	106.6	105.8	105.8		
TOTAL PERMANENT WORKYEARS	97.0	106.6	106.6	105.8	105.8		

AIR
Mobile Source Enforcement

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988

(DOLLARS IN THOUSANDS)						

TOTAL WORKYEARS						

Mobile Source Enforcement	102.0	106.6	106.6	105.8	105.8	
TOTAL WORKYEARS	102.0	106.6	106.6	105.8	105.8	

AIR

Mobile Source Enforcement

Budget Request

The Agency requests a total of \$7,774,500 supported by 105.8 total workyears for 1989, an increase of \$454,100 and no change in total workyears from 1988. Of the request, \$5,464,900 will be for the Salaries and Expenses appropriation and \$2,309,600 will be for the Abatement, Control and Compliance appropriation, increases of \$54,100 and \$400,000, respectively.

Program Description

The mobile source enforcement program is directed primarily at ensuring compliance with the motor vehicle emission standards and fuel regulations required by the Clean Air Act. The activities carried out as part of this program are designed to ensure that new and in-use vehicles are capable of meeting emission standards throughout their useful life, that vehicle emission control systems are not removed or rendered inoperative, that vehicles incapable of meeting emissions standards are not imported into the country, and that harmful additives are absent in gasoline. The program also includes the issuance of California and statutory emissions waivers.

MOBILE SOURCE ENFORCEMENT

1989 Program Request

The Agency requests a total of \$7,774,500 supported by 105.8 total workyears for this program, of which \$5,464,900 will be for the Salaries and Expenses appropriation and \$2,309,600 will be for the Abatement, Control and Compliance appropriation. This represents an increase of \$54,100 in the Salaries and Expenses appropriation, an increase of \$400,000 in the Abatement, Control and Compliance appropriation, and no change in total workyears. The increases reflect implementation of the Agency's ozone control strategy through enforcement of the vehicle fuel volatility rules.

In support of the ozone control policy, the recall program will investigate 15 suspect light-duty vehicle classes and seven light-duty truck classes, together with carrying out related diagnostic evaluation and remedy development work. An estimated seven emissions waiver requests from the State of California will be processed. The regulatory revision of the imports program (promulgated in 1987) will be fully implemented. Investigations into the operations of importers with resale vehicles are being expanded in order to ensure that the certification procedures are adequately implemented. The Selective Enforcement Audit (SEA) program will conduct ten audits of light-duty manufacturer facilities, six audits of heavy-duty manufacturer facilities, and three production compliance audits in support of the nonconformance penalties (NCP) program to ensure that new production vehicles and engines meet emissions and NCP requirements.

The field enforcement program will consist of inspections of vehicle fueling facilities as well as the investigation of suspected tampering and misfueling incidents. The fuels inspection effort will continue the program, which began in 1988, of sampling fuels for alcohol and other fuel additives to ensure that legal limits are not exceeded. Lead phasedown enforcement (to ensure that refineries, importers and distributors are complying with the lead phasedown rules) will involve 20 audits and the active caseload will increase to approximately 46 major violations. A total of 525 tampering investigations will result in approximately 52 notices of

violation. Audits of the incidence of tampering and fuel switching will be carried out at 15 sites primarily to gauge the effectiveness of the anti-tampering programs being implemented by the State and local jurisdictions. EPA will continue to assist with the development of State and local programs aimed at preventing tampering and fuel switching. It is anticipated that nine new programs will be implemented, thus bringing the total to 54. The fuel volatility program will provide for 5,000 inspections of retail fuel outlets, refiners, and distributors to ensure that fuels meet volatility standards. These inspections are expected to identify approximately 250 violations of the volatility limits.

1988 Program

In 1988 the Agency is allocating a total of \$7,320,400 supported by 105.8 total workyears for this program, of which \$5,410,800 is from the Salaries and Expenses appropriation and \$1,909,600 is from the Abatement, Control and Compliance appropriation.

The recall program is continuing with the investigation of 15 suspect light-duty vehicle classes and seven light-duty truck classes, together with related diagnostic evaluation and remedy development work. An estimated seven emissions waiver requests from the State of California are being processed. The regulatory revision for the imports program is being implemented. The program is processing an estimated 25,000 applications for importation of nonconforming vehicles. The SEA program is shifting focus by conducting 12 audits of light-duty manufacturer facilities and six audits of heavy-duty manufacturer facilities to ensure that new production vehicles and engines meet emission requirements. Approximately 1,200 consumer inquiries on emission warranty issues will be answered. The anti-tampering and anti-fuel switching enforcement programs are expected to result in 400 notices of violations of which approximately 34 cases will be referred to the Department of Justice for prosecution. Audits of tampering and fuel switching are being carried out at 15 sites. EPA is continuing to assist with the development of State and local programs aimed at preventing tampering and fuel switching. It is anticipated that nine new programs will be implemented, thus bringing the total to 45. Also, a study of the effects of using unleaded and low lead gasoline in farm equipment is being completed.

1987 Accomplishments

In 1987 the Agency obligated \$7,262,600 supported by 102.0 total workyears for this program, of which \$5,334,500 was from the Salaries and Expenses appropriation and \$1,928,100 was from the Abatement, Control and Compliance appropriation.

Under the recall program, 32 light-duty vehicle investigations were conducted resulting in one recall affecting nearly 1.3 million vehicles. An additional 16 voluntary recalls, completed as a result of EPA investigations, affected over 900,000 vehicles. One California waiver was issued. The SEA program conducted 18 audits of light-duty manufacturer facilities and two audits of heavy-duty manufacturer facilities to ensure that new production vehicles and engines meet emissions requirements. Inquiries and applications for the importation of nonconforming vehicles continued with the processing of 26,000 applications.

The anti-tampering and anti-fuel switching enforcement program continued. Accomplishments included the establishment of four new programs by States and localities; 9,000 fuel inspections for compliance with lead, nozzle, and label regulations; issuance of 417 notices of violation in the tampering and fuel switching programs; and evaluation of three fuel and fuel additive waiver requests. A study of the effects of the lead phasedown regulations on farm equipment was started.

ENVIRONMENTAL PROTECTION AGENCY

1989 Budget Estimate

Table of Contents

WATER QUALITY

WQ-1

RESEARCH & DEVELOPMENT

Water Quality Research.....	WQ-10
Scientific Assessment.....	WQ-15
Monitoring Systems and Quality Assurance.....	WQ-16
Health Effects.....	WQ-17
Environmental Engineering and Technology.....	WQ-18
Environmental Processes and Effects.....	WQ-19
Great Lakes.....	WQ-20

ABATEMENT & CONTROL

Water Quality and Grants Program Management.....	WQ-22
Water Quality Management.....	WQ-25
Great Lakes Program.....	WQ-26
Chesapeake Bay Program.....	WQ-28
Effluent Standards & Guidelines.....	WQ-31
Grants Assistance Programs.....	WQ-34
Clean Lakes Program.....	WQ-35
Control Agency Resource Supplementation (Section 106).....	WQ-36
Water Quality Strategies Implementation.....	WQ-38
Dredge & Fill.....	WQ-42
Ocean Disposal Permits.....	WQ-44
Environmental Emergency Response & Prevention.....	WQ-46
Standards & Regulations.....	WQ-47
Water Quality Monitoring & Analysis.....	WQ-49
Coastal Environment Management.....	WQ-51
Water Quality Monitoring & Analysis.....	WQ-54
Municipal Source Control.....	WQ-57
Municipal Waste Treatment Facility Construction.....	WQ-59
Waste Treatment Operations & Maintenance.....	WQ-61

ENFORCEMENT

Water Quality Enforcement.....	WQ-64
Water Quality Permit Issuance.....	WQ-69

WATER QUALITY

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988

(DOLLARS IN THOUSANDS)						

APPROPRIATION						

Salaries & Expenses	\$96,737.2	\$104,899.7	\$103,043.3	\$103,043.3	\$108,429.3	\$5,386.0
Abatement Control and Compliance	\$165,638.3	\$123,436.4	\$147,983.3	\$149,043.3	\$148,436.4	-\$606.9
Research & Development	\$8,578.3	\$8,442.2	\$7,848.2	\$8,918.9	\$8,918.9	
Scientific Activities	\$1.9					
Overseas						
TOTAL, Water Quality	\$270,955.7	\$236,778.3	\$258,874.8	\$261,005.5	\$265,784.6	\$4,779.1
PERMANENT WORKYEARS	1,987.4	1,965.8	2,121.0	2,098.5	2,101.7	3.2
TOTAL WORKYEARS	2,112.4	2,124.6	2,245.3	2,245.3	2,235.3	-10.0
OUTLAYS	\$239,387.9	\$254,739.1	\$264,975.2	\$267,156.2	\$272,328.3	\$5,172.1
AUTHORIZATION LEVELS	The Water Quality Act of 1987 reauthorized this program at a level of \$285,270,000 for 1988 and \$410,270,000 for 1989.					

WATER QUALITY

OVERVIEW AND STRATEGY

The Clean Water Act, as amended; Marine Protection, Research and Sanctuaries Act; and the Plastic Pollution Research and Control Act of 1987 provide the legislative basis for EPA's water quality programs. These laws direct EPA to take measures to protect the nation's waters in order to safeguard public health, recreational uses, and aquatic life.

The Water Quality Act of 1987 (WQA), which amended the Clean Water Act (CWA), expanded and strengthened the CWA through a number of changes designed to enhance water quality and improve the well-defined partnership between EPA and the States. The amended Act ratifies existing programs (e.g., technology-based and water quality-based effluent limits for point source dischargers). It also provides new tools to strengthen existing programs (e.g., administrative penalties to streamline enforcement actions); establishes new approaches to address existing water pollution problems (e.g., a new program for control of nonpoint source pollution) and funds to capitalize State revolving loan funds; and mandates requirements to address existing and emerging problems (e.g., surface water toxic control programs).

The Marine Protection, Research and Sanctuaries Act is designed to protect the ocean from unregulated dumping of material that would endanger human health, public welfare, the marine environment, or economic potential. The Act authorizes the Agency to develop criteria for ocean disposal of industrial waste, municipal sludges and other dredged materials. EPA is authorized to designate disposal sites and issue permits for all non-dredged materials. Although the Corps of Engineers is responsible for issuing permits for dredged materials, EPA must review these applications for consistency with EPA criteria.

The Plastic Pollution Research and Control Act of 1987 implements Annex V of the International Convention for the Prevention of Pollution from Ships, 1973; and establishes programs to identify and reduce the effects of plastic pollution on the marine environment. Under this law, EPA is required to submit a report to Congress on methods to reduce plastic pollution; assist the National Oceanic and Atmospheric Administration in conducting a public education program; prepare a New York Bight Restoration Plan; and submit a report to Congress on the problems associated with plastic debris in the New York Bight.

In 1989 and beyond, the most important goals for water quality programs will be to protect the nation's surface waters from toxic and hazardous point source dischargers; address the most serious water quality problems and the most valuable/threatened resources in programs such as nonpoint source management (NPS), wetlands, ground water, and estuaries/near coastal waters; and maintain the progress made to date in cleaning up and developing the infrastructure to protect our surface waters. These priorities reflect an increasing concern with risk reduction, potential environmental benefits and feasibility, and parallel activities legislated by the WQA.

EPA will actively encourage States to meet the goals and requirements of the amended CWA to the fullest extent possible, and to do so by developing State Clean Water Strategies, an open and consultative framework using the latest techniques of problem assessment and management. These Strategies are to be State plans developed through an open and integrated three-step process of waterbody/quality resource assessment, water resource targeting, and strategic planning and management that addresses surface water activities that have been traditionally managed under separate Federal direction (such as point source discharges, nonpoint sources of pollution, estuaries, and lakes).

The 1989 water quality request focuses on three major objectives: (1) protect/restore vulnerable and valuable ecosystems, (2) control discharges of toxic and hazardous pollutants, and (3) continue environmental gains that we have achieved -- especially in municipal treatment -- in order to meet the Agency's statutory requirements.

A. Protect Vulnerable and Valuable Ecosystems

State Clean Water Strategies (SCWS)

EPA expects that about half of the States will elect to develop Strategies by the Fall of 1988. In 1989, EPA will continue to encourage and assist States with Strategy implementation through coordination of EPA program requirements, use of grant funds, technical assistance, guidance and information transfer on implementing Strategy components; and by making available expanded geographic-oriented data bases. In addition, some new States may choose to develop SCWS through a targeting and ranking exercise and some States may complete the work commenced in 1988.

Advanced Identification of Sensitive Wetlands

Working with other Federal agencies, State and local governments, the public, and interest groups, EPA will study geographic areas where wetland (and other water) resources are most valuable and vulnerable to development pressures and identify, in advance of formal permit decisions, areas that may be suitable or unsuitable for various categories of regulated discharges. Advanced identification is a scientifically sound and environmentally effective approach to protecting our water resources, through assessing activities in areas considered most at risk and presenting the regulated public with a clearer understanding of the regulatory process relating to proposals for discharge in a particular area. Through early involvement of Federal, State, and local governments, advanced identification will reduce interagency disagreements during permit reviews and accelerate permit decision making.

Additional effort in the wetlands research program will be directed toward determining attainable standards and critical pollutant load limits for priority wetland types. Research will establish wetland-specific water quality criteria designed to prevent wetland degradation and preserve wetland water quality functions. Manipulative experiments will be conducted to identify the key ecological factors controlling the level of wetlands function. Research will result in improved design of projects to create or restore wetlands.

Near Coastal Waters and Oceans

EPA's near coastal waters program will continue baseline surveys begun in 1988 to define overall environmental problems, fund additional pilot projects to identify innovative management techniques for addressing the various coastal water problems, and expand the Gulf of Mexico initiative.

In 1989, twelve estuary projects will be continuing in various phases in the National Estuary Program. The Chesapeake Bay Program will continue to work with States to monitor and analyze water quality and biological content, implement targeted activities to control nonpoint sources of pollution, and develop and implement a Baywide toxic pollutants strategy. The focus of the Great Lakes program will continue to shift from nutrient to toxic pollutant control in meeting legislative requirements and commitments under the Agreement with Canada.

The Agency expects applications for ocean dumping to increase with future land-ban regulations under the Resource Conservation and Recovery Act (RCRA), revised ocean dumping regulations to comply with court decisions, and the Navy Homeporting policy. Counting the 12 sites with final designations expected in 1989, a total of 76 sites will be designated. EPA will continue to review and issue permits for disposal at approved sites. As required by 1988 regulations, EPA

will review complex cross-media analyses of land-based vs. ocean disposal impacts and collect, beginning in 1989, application processing fees. EPA will expand its site management and monitoring activities to ensure permit compliance and to monitor environmental impacts.

The research program will develop and validate assessment methodologies to support comprehensive protection and management planning for estuaries and near coastal waters. Assessment methods are required to characterize point and nonpoint sources of pollution, determine the exposure of living resources to pollutants, determine the exposure of related effects and provide quantitative risk assessment for managing estuarine and near coastal waters. This assessment concept will provide the framework for developing and validating needed methodologies, including wasteload allocations.

Using information derived from experience in the Great Lakes, Chesapeake Bay, other estuary projects, and near coastal pilot projects, EPA will initiate a national network for information exchange about near coastal water problems, management tools, and innovative and successful management techniques. This network will help officials, especially local coastal zone managers, to make sound environmental decisions and use resources most effectively.

Nonpoint Source Pollution Control

Recognizing that NPS pollution is a major contributor to both toxic and non-toxic water quality problems, EPA will guide and assist States as they implement integrated NPS management programs in accordance with the requirements of Section 319 of the CWA. The statutory deadline for State submission of these management programs and assessments is August 1988. In 1989, EPA will continue to review and assist States to improve their plans, encourage and help them to target activities to geographic areas selected by comparative risk assessments, and integrate NPS objectives with those of other water programs, such as estuaries/near coastal waters, wetlands and ground-water protection. EPA will also provide guidance and technical assistance to States to support their use of Section 205(j)(5) grants to develop and implement State NPS management programs.

B. Control Discharges of Toxic and Hazardous Pollutants

By February 4, 1989, States will develop and submit to EPA individual control strategies (ICS) for reducing the discharge of toxic pollutants and hazardous substances into impaired waters (i.e., National Pollutant Discharge Elimination System (NPDES) permits based on total maximum daily loadings and wasteload allocations, as needed, and accompanying fact sheets). EPA must then review and approve or disapprove the States' ICS within 120 days after the February 1989 deadline. These ICS will (1) address known/suspected point source discharges of toxic and hazardous substances (i.e., those listed in connection with Section 307(a) of the CWA and other point source discharges causing localized toxic and toxicity impacts including chlorine, ammonia and whole effluent toxicity); (2) be based on readily available data (i.e., listings of impaired waters are to be developed on available information indicating waters not meeting water quality standards); and (3) be developed where data are readily available to establish water quality-based limits (e.g., data from Discharge Monitoring Reports, permit applications, Fish and Wildlife Service, etc.). Where States need to expand their data bases to refine their lists, they will develop water quality assessment plans.

In 1989, to implement the WQA provisions, EPA and States will issue or modify major permits where assessments are completed and toxic/toxicity controls determined, issue major permits with toxic/toxicity limits or biomonitoring requirements where assessments have not been completed but toxics problems have been identified, and issue Best Available Technology (BAT) permits to organic chemical facilities. As toxic and hazardous pollutants and control needs are identified, pretreatment programs will become increasingly important, and municipalities will need to

incorporate appropriate limits into their program requirements. EPA will continue to audit municipal pretreatment programs to assess the need for new or revised local limits and to determine if publicly owned treatment works (POTWs) are properly applying categorical standards. To accompany the increasing emphasis on toxic controls in permits, EPA will implement a Toxics Control Strategy for NPDES enforcement that addresses compliance monitoring for toxics and toxicity, identifies how to track the results of permittee toxicity reduction evaluations, and recommends appropriate enforcement responses. This Strategy will significantly change the NPDES inspection program and require inspections to include assessing permittee biomonitoring and toxics sampling capabilities and performance.

The amended CWA requires States to adopt water quality standards for all Section 307(a) toxic pollutants for which EPA has published criteria and where waters are impaired by such pollutants. States should incorporate appropriate revisions in conjunction with the triennial review of their standards. In 1989, EPA will work with States (including those Indian tribes treated as States) as they develop such standards and will review and approve proposed new and/or revised State standards to ensure adoption of numeric criteria for toxic pollutants, and/or the adequacy of procedures for adopting narrative criteria, and integration of needed site-specific criteria.

In support of improved toxic assessments and controls, EPA will expand its surface water monitoring data base and technical procedures for performing exposure and risk assessments and identifying hazards; and perform exposure and risk assessments to identify toxic pollutants that are the most likely candidates for future 307(a) listing or other regulatory requirements (e.g., developing EPA criteria). EPA will also develop controls and/or guidance for treating industrial discharges that are identified or suspected of being toxic; develop additional EPA criteria; and develop and/or update guidance for identifying impaired waters, conducting risk assessments/wasteload allocations, controlling additional toxic and hazardous substances that contribute to use impairment, and conducting monitoring programs.

The research program will continue to support EPA's practice of developing water quality-based permit limitations and Best Conventional Technology and Best Available Technology limitations in the industrial wastewater program. Information developed on treatability of RCRA wastes will be useful in predicting effluent concentrations, POTW pass-through, and potential water quality problems.

C. Continue Environmental Gains

Municipal Wastewater Treatment

Title VI of the amended CWA provides for a transition from the current construction grants program to a new program of State revolving funds (SRFs). EPA will award grants to States to capitalize their SRFs. These funds may be used for loans and other forms of nongrant assistance to communities for construction of wastewater treatment facilities. The SRF program ushers in expanded State responsibilities and autonomy in an already extensively delegated program.

EPA will work closely with States to ensure an effective transition of financial and program management responsibility to State and local governments. The Agency will issue needed guidance and regulations and provide technical assistance and training for management of revolving funds. At the same time, EPA will continue essential oversight of delegated State programs and wastewater treatment facility construction, operations and maintenance to ensure compliance with construction grant program requirements. Additionally, EPA will continue efforts to ensure timely completion and closeout of grant-assisted projects.

National Municipal Policy

The National Municipal Policy deadline for municipal wastewater treatment facilities to achieve final effluent limits occurs in July 1988 and the majority of these facilities will achieve these limits or be on enforceable schedules. However, EPA anticipates that additional referrals will be required in 1989 to establish (or re-establish) compliance schedules in judicial consent decrees for approximately 225 major facilities. EPA will also continue to monitor permit compliance and take appropriate enforcement action to help protect the \$48 billion Federal investment in our municipal infrastructure.

Monitoring

Recognizing the critical role that water quality monitoring plays throughout Federal and State surface water pollution control activities, EPA will continue to develop and expand the information base and data systems needed for effective national decision-making. This effort will support the integrated and geographic analyses required to assess waters and develop State Clean Water Strategies, Individual Toxic Control Strategies, and nonpoint source programs. EPA will work with States in using new technical monitoring procedures and methods and will expand the data base to include human health and aquatic life risks, thereby enhancing EPA and State capability to identify problems, assess water quality trends, and determine the most effective, targeted risk management options for addressing water quality problems.

WATER QUALITY

	<u>Actual 1987</u>	<u>Budget Estimate 1988</u>	<u>Current Estimate 1988</u>	<u>Request 1989</u>	<u>Increase (+) Decrease (-) 1989 vs. 1988</u>
<u>PROGRAM ACTIVITIES</u>					
<u>Incremental Outputs</u>					
Ocean Dumping Permits.....	25	25	25	25	0
Construction Grants Awards...	514	300	626	246	-380
Active Const. Grants Projects.....	6,087	1,836	5,563	4,659	-904
Step 3 and Step 2+3 Project Completions.....	796	800	874	644	-230
Permits Issued by EPA:					
Municipal					
Major.....	158	185	136	175	+39
Sludge Requirements.....	0		0	0	0
Minor.....	446	0	0	0	0
Non-Municipal					
Major.....	276	248	193	235	+42
Minor.....	1,166	0	0	0	0
General.....	5	3	6	0	-6
Adjudicatory Hearings					
Settled.....	99	67	55	65	+10
Enforcement Actions:					
Inspections.....	2,577	1,951	2,100	1,900	-200
Admin. Orders (AOs).....	1,002	1,260	346	188	-158
AOs with Penalties.....	20	--	158	290	+132
Civil Litigation.....	92	150	134	110	-24
Criminal Litigation.....	14	15	14	16	+2
Clean Lakes Projects					
Awarded.....	49	0	0	0	0
Water Quality Criteria.....	5	12	10	5	-5
<u>Cumulative Outputs</u>					
Signed 205(g) agreements.....	.51	51	51	51	0
Final Effluent Guidelines....	34	43	37	41	+4
Propose Regulations for Sludge Reuse/Disposal Options.....					
	5	5	5	5	0
NPDES State Prog. Approvals..	39	42	39	39	0
Local Pretreatment Program Approvals (EPA).....					
	373	699	315	300	-15
National Estuary Projects....	6	9	12	12	0

ENVIRONMENTAL PROTECTION AGENCY

1989 Budget Estimate

Table of Contents

	<u>Page</u>
<u>WATER QUALITY</u>	
RESEARCH & DEVELOPMENT	
Water Quality Research.....	WQ-10
Scientific Assessment.....	WQ-15
Monitoring Systems and Quality Assurance.....	WQ-16
Health Effects.....	WQ-17
Environmental Engineering and Technology.....	WQ-18
Environmental Processes and Effects.....	WQ-19
Great Lakes.....	WQ-20

WATER QUALITY
Water Quality Research

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988
----- (DOLLARS IN THOUSANDS) -----						
PROGRAM -----						
Scientific Assessment -						
Water						
Salaries & Expenses	\$271.6	\$318.5	\$299.6	\$299.6	\$306.2	\$6.6
Research & Development	\$392.1	\$357.5	\$357.5	\$341.7	\$341.7	
TOTAL	\$663.7	\$676.0	\$657.1	\$641.3	\$647.9	\$6.6
Monitoring Systems And						
Quality Assurance -						
Water						
Salaries & Expenses	\$2,436.3	\$2,653.0	\$2,493.3	\$2,493.3	\$2,547.9	\$54.6
Research & Development	\$788.3	\$24.5	\$24.5	\$908.4	\$908.4	
TOTAL	\$3,224.6	\$2,677.5	\$2,517.8	\$3,401.7	\$3,456.3	\$54.6
Health Effects - Water						
Salaries & Expenses	\$1,775.4	\$1,612.5	\$1,564.3	\$1,564.3	\$1,598.6	\$34.3
Research & Development	\$383.1	\$965.8	\$534.8	\$98.0	\$98.0	
TOTAL	\$2,158.5	\$2,578.3	\$2,099.1	\$1,662.3	\$1,696.6	\$34.3
Environmental						
Engineering And						
Technology - Water						
Salaries & Expenses	\$2,375.8	\$2,472.5	\$2,219.0	\$2,219.0	\$2,267.6	\$48.6
Research & Development	\$3,491.8	\$3,323.2	\$3,323.2	\$3,398.4	\$3,398.4	
TOTAL	\$5,867.6	\$5,795.7	\$5,542.2	\$5,617.4	\$5,666.0	\$48.6
Environmental Processes						
And Effects - Water						
Salaries & Expenses	\$9,257.3	\$9,782.9	\$8,803.6	\$8,803.6	\$8,996.4	\$192.8
Research & Development	\$2,031.8	\$2,273.6	\$2,110.6	\$2,674.8	\$2,674.8	
TOTAL	\$11,289.1	\$12,056.5	\$10,914.2	\$11,478.4	\$11,671.2	\$192.8

WATER QUALITY
Water Quality Research

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988
----- (DOLLARS IN THOUSANDS) -----						
Great Lakes Research						
Water						
Salaries & Expenses	\$439.0	\$472.0	\$451.6	\$451.6	\$461.5	\$9.9
Research & Development	\$1,491.2	\$1,497.6	\$1,497.6	\$1,497.6	\$1,497.6	
TOTAL	\$1,930.2	\$1,969.6	\$1,949.2	\$1,949.2	\$1,959.1	\$9.9
TOTAL:						
Salaries & Expenses	\$16,555.4	\$17,311.4	\$15,831.4	\$15,831.4	\$16,178.2	\$346.8
Research & Development	\$8,578.3	\$8,442.2	\$7,848.2	\$8,918.9	\$8,918.9	
Water Quality Research TOTAL	\$25,133.7	\$25,753.6	\$23,679.6	\$24,750.3	\$25,097.1	\$346.8
PERMANENT WORKYEARS -----						
Scientific Assessment - Water	4.6	5.5	5.5	5.5	5.5	
Monitoring Systems And Quality Assurance - Water	42.9	47.6	47.6	46.3	46.3	
Health Effects - Water	22.2	27.1	27.1	26.7	26.7	
Environmental Engineering And Technology - Water	37.6	38.7	38.7	37.7	37.7	
Environmental Processes And Effects - Water	142.9	165.1	165.1	154.9	154.9	
Great Lakes Research - Water	3.9	8.0	8.0	8.0	8.0	
TOTAL PERMANENT WORKYEARS	254.1	292.0	292.0	279.1	279.1	

WATER QUALITY
Water Quality Research

ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988
----------------	----------------------------	-----------------	-----------------------------	-----------------	--

(DOLLARS IN THOUSANDS)

TOTAL WORKYEARS

Scientific Assessment - Water	5.5	5.5	5.5	5.5	5.5
Monitoring Systems And Quality Assurance - Water	48.0	47.6	47.6	46.3	46.3
Health Effects - Water	24.8	27.1	27.1	26.7	26.7
Environmental Engineering And Technology - Water	39.4	38.7	38.7	37.7	37.7
Environmental Processes And Effects - Water	164.5	165.1	165.1	154.9	154.9
Great Lakes Research - water	6.7	8.0	8.0	8.0	8.0
TOTAL WORKYEARS	288.9	292.0	292.0	279.1	279.1

WQ-12

WATER QUALITY

Water Quality Research

Principal Outputs by Objective

Objective 1: Develop the Scientific Data to Support a Water Quality Based Approach to Pollution Control

- 1989: o Ten water quality health advisories (Scientific Assessment)
o Development of Wildlife Protection Program (Scientific Assessment)
o Evaluate and standardize methodology for quantification of human pathogens (Monitoring)
- 1988: o Ten water quality advisories (Scientific Assessment)
o Health effects bioassay method manual for determining whether receiving streams meet water quality standards (Health)
o Report on the toxicity identification of the toxic components of effluents (Environmental Processes)
- 1987: o Distributed calibration materials and audited performance of over 7,000 major NPDES dischargers (Monitoring)
o Report on health effects bioassay methods for determining toxicity (Health)
o Eleven water quality criteria documents and twenty-nine water quality advisories (Environmental Processes)

Objective 2: Develop Scientific Data Needed to Support Environmentally Sound Ocean Disposal, Estuarine and Great Lakes Programs

- 1989: o Report on application of population models to impact assessments at the 106-mile ocean dumping site (Environmental Processes)
o Report on the ecological risk of organic enrichment and contaminants from POTWs (Environmental Processes)
o Report on methods for predicting biological impacts of in-place pollutants in the upper Great Lakes connecting channels (Environmental Processes)
- 1988: o Risk assessment of the ocean disposal of dredged material (Environmental Processes)
o Report on the carcinogenic effects of contaminated sediment on mollusks and fish (Environmental Processes)
o Report describing mass balances of toxicants of concern in the upper Great Lakes connecting channels (Environmental Processes)
- 1987: o Conduct lab/field tests of an equilibrium partitioning bioaccumulation model (Environmental Processes)
o Develop risk assessment methods for the ocean disposal of sludge at the 106-mile ocean dumping site (Environmental Processes)
o Report on an integrated Great Lakes study on toxics in Monroe Harbor (Environmental Processes)

Objective 3: Evaluation of Innovative and Alternative (I/A) Technologies, Sludge Management Alternatives and Toxicity Reduction Methods and Technology

- 1989: o Development of criteria documents for pathogens in sludge (Scientific Assessment)

- o Standardize methodology for collection, identification, and enumeration of human pathogenic organisms in sludge and soil to monitor the safety of direct land-application of wastewater and/or sludge (Monitoring)
 - o Report on evaluation of effectiveness of available methodology for reducing toxic metals and organics from incineration emissions (Engineering)
- 1988:
- o Development of multimedia pathogen risk assessment methodology for the land application of sludge (Scientific Assessment)
 - o Initiation of prototype criteria document for bacteria (Scientific Assessment)
 - o Provide real-time process monitoring methodology for toxic conditions (Monitoring)
- 1987:
- o Response to SAB comments on the four risk assessment methodologies (Scientific Assessment)
 - o Distribution of the annual report on "Guidelines for Establishing Test Procedures for the Analyses of Pollutants" (Monitoring)
 - o Technology evaluations in support of the 100% modification/replacement program for in-channel clarifier in Gallatin, Missouri and in-vessel composting in Plattsburgh, New York (Engineering)

WATER QUALITY

Water Quality Research

Budget Request

The Agency requests a total of \$25,097,100 supported by 279.1 total workyears for 1989, an increase of \$346,800 and no change in total workyears from 1988. Of the request, \$16,178,200 will be for the Salaries and Expenses appropriation and \$8,918,900 will be for the Research and Development appropriation, an increase of \$346,800 in the Salaries and Expenses appropriation and no change in the Research and Development appropriation.

Program Description

The Water Quality research program provides the scientific and technical data to States and the EPA's Office of Water in implementing the Clean Water Act.

Objective 1: Develop the Scientific Data to Support a Water Quality Based Approach to Pollution Control. This research provides the scientific base to help States develop water quality standards, to conduct use-attainability analyses and to provide needed information to implement a water quality based pollution control program.

Objective 2: Develop the Scientific Data Needed to Support Environmentally Sound Ocean Disposal, Estuarine and Great Lakes Programs. This activity provides the research needed by EPA for evaluating impacts of ocean disposal practices, understanding the Great Lakes ecosystems and developing responsive and scientifically valid estuarine and near coastal waters programs.

Objective 3: Evaluation of Innovative and Alternative (I/A) Technologies, Sludge Management Alternatives and Toxicity Reduction Methods and Technology. The wastewater research program provides the technical information, engineering and monitoring assistance needed by EPA and municipalities, and industry for the development and implementation of regulations and guidance for disposal of sludge, control of pollution from municipal treatment plants to bring plants into compliance with state discharge permits, and to support the National Pollution Discharge Elimination System (NPDES).

SCIENTIFIC ASSESSMENT

1989 Program Request

The Agency requests a total of \$647,900 supported by 5.5 total workyears for this program, of which \$306,200 will be for the Salaries and Expenses appropriation and \$341,700 will be for the Research and Development appropriation. This represents an increase of \$6,600 in the Salaries and Expenses appropriation, and no change in the Research and Development appropriation and total workyears. The increase in the Salaries and Expenses appropriation reflects a general enhancement of the inhouse research program.

Develop the Scientific Data to Support a Water Quality Based Approach to Pollution Control. In response to the new Post-BAT requirements of the CWA Amendments, the program will provide support to the program office, Regions and States for update/modification/implementation of human health criteria on a site-specific basis for ambient water quality. In addition, the program will provide assistance to evaluate local health hazards from exposure to chemical pollutants and pollutant mixtures. This information is needed by the States to develop individual control strategies for toxic pollutants.

Evaluation of Innovative and Alternative (I/A) Technologies, Sludge Management Alternatives and Toxicity Reduction Methods and Technology. The CWA Amendments require the Agency to identify and regulate toxic pollutants in sludge. As a result, the program will provide technical support in the development and implementation of these regulations including the development of criteria for the assessment of hazard and risk from exposure to pathogens in sludge.

1988 Program

In 1988, the Agency is allocating a total of \$641,300 supported by 5.5 total workyears for this program, of which \$299,600 is from the Salaries and Expenses appropriation and \$341,700 is from the Research and Development appropriation. The research program is providing technical support in the development and implementation of regulations for the management of sludge under Section 406 of the CWA. The program is assisting in the development of criteria for the assessment of hazard and risk from exposure to pathogens in sludge.

1987 Accomplishments

In 1987, the Agency obligated a total of \$663,700 supported by 5.5 total workyears for this program, of which \$271,600 was from the Salaries and Expenses appropriation and \$392,100 was from the Research and Development appropriation. The program prepared a point-by-point response to comments received from the SAB on the four multimedia chemical risk assessments.

MONITORING SYSTEMS AND QUALITY ASSURANCE

1989 Program Request

The Agency requests a total of \$3,456,300 supported by 46.3 total workyears for this program, of which \$2,547,900 will be for the Salaries and Expenses appropriation and \$908,400 will be for the Research and Development appropriation. This represents an increase of \$54,600 in the Salaries and Expenses appropriation, with no change in the Research and Development appropriation and total workyears. The increase in the Salaries and Expenses appropriation reflects a general enhancement of inhouse support for the monitoring program.

Develop the Scientific Data to Support a Water Quality Based Approach to Pollution Control. The CWA Amendments place emphasis on the development of methods to measure and monitor water quality. In support of this activity, the program will develop and standardize methods and provide field tested protocols to assess ambient water quality. In addition, the program will evaluate biological monitoring techniques and a generic approach for the chemical measurement of toxic organics and inorganics in ambient sources. In 1989, fees for quality control and performance evaluation samples will be collected following the expected publication of a final rule in 1988.

Evaluation of Innovative and Alternative (I/A) Technologies, Sludge Management Alternatives and Toxicity Reduction Methods and Technology. The Discharge Monitoring Report-Quality Assurance (DMRQA) Support Program will be maintained to provide quality self-monitoring DMRQA data submitted to the States and EPA by the 7,000 major dischargers within the NPDES.

1988 Program

In 1988, the Agency is allocating a total of \$3,401,700 supported by 46.3 total workyears for this program, of which \$2,493,300 is from the Salaries and Expenses appropriation and \$908,400 is from the Research and Development appropriation.

This research program is evaluating chemical monitoring methods and protocols designed to measure site-specific aspects of water quality. The program provides cost-effective monitoring methods for the measurement of chemicals and biological parameters required in the National Pollution Discharge Elimination System (NPDES) program and in the assessment of ambient water quality. Fees for quality control and performance evaluation samples will be collected following the expected publication of a final rule in 1988.

1987 Accomplishments

In 1987, the Agency obligated a total of \$3,224,600 supported by 48.0 total workyears for this program, of which \$2,436,300 was from the Salaries and Expenses appropriation and \$788,300 was from the Research and Development appropriation. In 1987, this program developed methods for the collection and enumeration of coliforms and viruses and for the chemical identification/quantification of toxic metal species. In addition, a repository of repository calibration materials to support implementation of NPDES compliance monitoring was maintained.

HEALTH EFFECTS

1989 Program Request

The Agency requests a total of \$1,696,600 supported by 26.7 total workyears for this program, of which \$1,598,600 will be for the Salaries and Expenses appropriation and \$98,000 will be for the Research and Development appropriation. This represents an increase of \$34,300 in the Salaries and Expenses appropriation, with no change in the Research and Development appropriation and in total workyears. The increase in the Salaries and Expenses appropriation reflects a general enhancement of inhouse support for the health effects program.

Develop the Scientific Data to Support a Water Quality Based Approach to Pollution Control. The CWA Amendments provide for the establishment of water quality standards and criteria to assure the protection of public health. In support of these requirements, this research program will evaluate the use of health effects bioassays to determine the potential of wastewater effluents to cause carcinogenic, hepatic, renal, reproductive or teratogenic effects. Research will be conducted to develop microbial methods to determine the risks of exposure to microorganisms from non-human/non-point sources of pollution.

Evaluation of Innovative and Alternative (I/A) Technologies, Sludge Management Alternatives and Toxicity Reduction Methods and Technology. Microbiological research data on the level and risk of pathogens that may cause disease in humans will be developed. Biological markers will be developed to determine human exposure to chemicals found in sludge. The data from these studies will be used by the Agency to formulate sludge disposal regulations, permits and guidance required by the CWA Amendments.

1988 Program

In 1988, the Agency is allocating a total of \$1,662,300 supported by 26.7 total workyears for this program, of which \$1,564,300 is from the Salaries and Expenses appropriation and \$98,000 is from the Research and Development appropriation.

The research program is providing data on the health aspects of chemicals found in sludges used for land application, distribution and marketing and other uses and disposal options. Also microbiological research data on the level and risk pathogens that may cause diseases in humans are being developed.

1987 Accomplishments

In 1987, the Agency obligated a total of \$2,158,500 supported by 24.8 total workyears for this program, of which \$1,775,400 was from the Salaries and Expenses appropriation and \$383,100 was from the Research and Development appropriation.

Research activities were directed toward developing health effect bioassays to support the evaluation of wastewater effluents. In addition, the program published a report on the occurrence of pathogens in distribution and marketing sludge products.

ENVIRONMENTAL ENGINEERING AND TECHNOLOGY

1989 Program Request

The Agency requests a total of \$5,666,000 supported by 37.7 total workyears for this program, of which \$2,267,600 will be for the Salaries and Expenses appropriation and \$3,398,400 will be for the Research and Development appropriation. This represents an increase of \$48,600 in the Salaries and Expenses appropriation, with no change in the Research and Development appropriation and total workyears. The increase in the Salaries and Expenses appropriation reflects a general enhancement of inhouse support for the wastewater treatment technology research program.

Evaluation of Innovative and Alternative (I/A) Technologies, Sludge Management Alternatives and Toxicity Reduction Methods and Technology. Innovative and alternative technologies will be evaluated to determine and promote more cost-effective treatment processes. Technical support will be provided to the Office of Water on sludge regulation development and implementation. To support the development of permit limitations for municipal and industrial wastewaters, toxicity treatability will be assessed, and toxicity reduction evaluation (TRE) procedures and removal capabilities will be developed for the various treatment processes.

1988 Program

In 1988, the Agency is allocating a total of \$5,617,400 supported by 37.7 total workyears for this program, of which \$2,219,000 is from the Salaries and Expenses appropriation and \$3,398,400 is from the Research and Development appropriation.

Technology evaluations are being conducted on selected potential I/A candidates. Technical support and engineering assistance are being provided to EPA and municipalities for the development and implementation of sludge regulation, especially in the areas of pathogens and organics in sludge, sludge incineration and sludge impoundments. Integrated wastewater treatment mechanisms which include both aerobic and anaerobic systems are being assessed for toxics control. Toxicity reduction evaluations (TRE) for small plants are being conducted, and a comprehensive TRE protocol is being developed.

1987 Accomplishments

In 1987, the Agency obligated a total of \$5,867,600 supported by 39.4 total workyears for this program, of which \$2,375,800 was from the Salaries and Expenses appropriation and \$3,491,800 was from the Research and Development appropriation.

Technology evaluations in support of the 100% Modification/Replacement program were completed for in-channel clarifier in Gallatin, Missouri and in-vessel composting in Plattsburgh, New York. Technical support was provided to revise sludge regulation, and bench-scale testing on the two-phase anaerobic sludge digestion was completed.

ENVIRONMENTAL PROCESSES AND EFFECTS

1989 Program Request

The Agency requests a total of \$11,671,200 supported by 154.9 total workyears for this program, of which \$8,996,400 will be for the Salaries and Expenses appropriation and \$2,674,800 will be for the Research and Development appropriation. This represents an increase of \$192,800, in the Salaries and Expenses appropriation, with no change in the Research and Development appropriation and total workyears. The increase in the Salaries and Expenses appropriation reflects a general enhancement of inhouse support for the processes and effects research program.

Develop the Scientific Data to Support a Water Quality Based Approach to Pollution Control. In response to the new Post-BAT requirements of the CWA Amendments, the research program will develop methods to determine what uses are attainable in aquatic systems, and to work on integrating pollutant-specific control methods with whole toxicity testing procedures and best available technology (BAT) limits for use in permitting. Research will also strengthen the scientific and technical data base to support the Agency's effort to reduce the loss or degradation of the wetlands and to assess individual and cumulative impacts of wetland conversions as well as effective means of mitigating impacts. The data from these studies will assist the States in developing individual strategies for controlling toxic pollutants.

Develop the Scientific Data Needed to Support Environmentally Sound Ocean Disposal, Estuarine and Great Lakes Programs. This activity will develop risk assessment procedures to permit the evaluation of impacts due to the ocean disposal of wastes in coastal and deep waters. The integration of these procedures will allow the determination of the relative safety of ocean disposal and provide for comparison of alternative disposal strategies. Research will be conducted to support the Agency's strategy to reduce pollution in near coastal waters. The research program will focus on resiliency and recovery of coastal ecosystems, development of biomarker assessment methods, and development of wasteload allocation models for estuarine and near coastal waters.

Evaluation of Innovative and Alternative (I/A) Technologies, Sludge Management Alternatives and Toxicity Reduction Methods and Technology. Research will continue to maintain and update the existing gas chromatograph/mass spectroscopy tape library and develop new analytical data bases of toxic pollutants found in industrial wastewater. The data bases will provide the information on wastewater treatment technology needed to support the NPDES program.

1988 Program

In 1988, the Agency is allocating a total of \$11,478,400 supported by 154.9 total workyears for this program, of which \$8,803,600 is from the Salaries and Expenses appropriation and \$2,674,800 is from the Research and Development appropriation.

Research is being conducted to develop methods to integrate whole effluent testing procedures with chemical specific control technology. The methods to assess water quality functions of wetlands, the cumulative loss of wetlands as well as the mitigation of wetlands are being developed. Research on methods to better assess the impacts of ocean disposal activities is being conducted. These procedures will be used in risk assessments. Estuarine and near coastal waters research is focused on questions of ecosystem resiliency and recovery, eutrophication, wasteload allocation and biomarkers as assessment techniques in coastal waters.

1987 Accomplishments

In 1987, the Agency obligated a total of \$11,289,100 supported by 164.5 total workyears for this program, of which \$9,257,300 was from the Salaries and Expenses appropriation and \$2,031,800 was from the Research and Development appropriation.

Major accomplishments included the development of aquatic life water quality criteria documents and twenty-nine water quality advisories. The research program completed research efforts which clearly demonstrated that laboratory methods can be used to estimate field exposure and effects of pollutants in ocean disposed dredged material as well as completed lab/field tests of an equilibrium partitioning bioaccumulation model.

GREAT LAKES

1989 Program Request

The Agency requests a total of \$1,959,100 supported by 8.0 total workyears for this program, of which \$461,500 will be for the Salaries and Expenses appropriation and \$1,497,600 will be for the Research and Development appropriation. This represents an increase of \$9,900 in the Salaries and Expenses appropriation, with no change in the Research and Development appropriation and total workyears. The increase in the Salaries and Expenses appropriation reflects a general enhancement of inhouse support for the Great Lakes research program.

Develop the Scientific Data Needed to Support Environmentally Sound Ocean Disposal, Estuarine and Great Lakes Programs. Research will develop and test methods to measure the sources, movement and effects of toxic substances in the Great Lakes. Emphasis will be given to research on in-place pollutants and mass balance studies. This program will also provide the International Joint Commission, Great Lakes National Program Office, Regions II, III and V and Great Lakes States with technical support and research data related to activities under the US/Canada Water Quality Agreement.

1988 Program

In 1988, the Agency is allocating a total of \$1,949,200 supported by 8.0 total workyears for this program, of which \$451,600 is from the Salaries and Expenses appropriation and \$1,497,600 is from the Research and Development appropriation. The program is focusing on the impact and fate of toxic materials in areas of concern identified by the Great Lakes Water Quality Board. Emphasis is on in-place pollutant and chemical mass balance research.

1987 Accomplishments

In 1987, the Agency obligated a total of \$1,930,200 supported by 6.7 total workyears for this program, of which \$439,000 was from the Salaries and Expenses appropriation and \$1,491,200 was from the Research and Development appropriation.

The Great Lakes Research program completed a report on an integrated study of toxics in Monroe Harbor, including the field validation of a toxicity model, and revised a wasteload allocation model for predicting exposure concentrations in rivers and streams. Technical assistance was also provided to the Great Lakes National Program Office, the Regions and the International Joint Commission.

ENVIRONMENTAL PROTECTION AGENCY

1989 Budget Estimate

Table of Contents

<u>WATER QUALITY</u>	<u>Page</u>
ABATEMENT & CONTROL	
Water Quality and Grants Program Management.....	WQ-22
Water Quality Management.....	WQ-25
Great Lakes Program.....	WQ-26
Chesapeake Bay Program.....	WQ-28
Effluent Standards & Guidelines.....	WQ-31
Grants Assistance Programs.....	WQ-34
Clean Lakes Program.....	WQ-35
Control Agency Resource Supplementation (Section 106).....	WQ-36
Water Quality Strategies Implementation.....	WQ-38
Dredge & Fill.....	WQ-42
Ocean Disposal Permits.....	WQ-44
Environmental Emergency Response & Prevention.....	WQ-46
Standards & Regulations.....	WQ-47
Water Quality Monitoring & Analysis.....	WQ-49
Coastal Environment Management.....	WQ-51
Water Quality Monitoring & Analysis.....	WQ-54
Municipal Source Control.....	WQ-57
Municipal Waste Treatment Facility Construction.....	WQ-59
Waste Treatment Operations & Maintenance.....	WQ-61

WATER QUALITY
Water Quality And Grants Program Management

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988	
----- (DOLLARS IN THOUSANDS) -----							
PROGRAM -----							
Water Quality Management							
Salaries & Expenses	\$3,813.7	\$4,080.9	\$4,312.1	\$4,312.1	\$4,577.7	\$265.6	
Abatement Control and Compliance	\$686.0	\$171.0	\$241.0	\$241.0	\$1,171.0	\$930.0	
TOTAL	\$4,499.7	\$4,251.9	\$4,553.1	\$4,553.1	\$5,748.7	\$1,195.6	
Great Lakes Program							
Salaries & Expenses	\$1,344.2	\$1,277.4	\$1,259.3	\$1,259.3	\$1,336.1	\$76.8	
Abatement Control and Compliance	\$4,261.1	\$3,697.3	\$9,697.3	\$9,697.3	\$8,097.3	-\$1,600.0	
TOTAL	\$5,605.3	\$4,974.7	\$10,956.6	\$10,956.6	\$9,433.4	-\$1,523.2	
Chesapeake Bay Program							
Salaries & Expenses	\$1,131.8	\$1,164.9	\$1,146.3	\$1,146.3	\$1,216.2	\$69.9	
Abatement Control and Compliance	\$9,247.7	\$9,250.0	\$10,250.0	\$10,250.0	\$10,250.0		
TOTAL	\$10,379.5	\$10,414.9	\$11,396.3	\$11,396.3	\$11,466.2	\$69.9	
TOTAL:							
Salaries & Expenses	\$6,289.7	\$6,523.2	\$6,717.7	\$6,717.7	\$7,130.0	\$412.3	
Abatement Control and Compliance	\$14,194.8	\$13,118.3	\$20,188.3	\$20,188.3	\$19,518.3	-\$670.0	
Water Quality And Grants Program Management	TOTAL	\$20,484.5	\$19,641.5	\$26,906.0	\$26,906.0	\$26,648.3	-\$257.7

WATER QUALITY
Water Quality And Grants Program Management

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988
----- (DOLLARS IN THOUSANDS) -----						
PERMANENT WORKYEARS -----						
Water Quality Management	76.6	76.6	103.4	99.9	103.4	3.5
Great Lakes Program	20.3	20.0	26.0	24.0	26.0	2.0
Chesapeake Bay Program	14.1	10.0	10.0	9.5	10.0	.5
TOTAL PERMANENT WORKYEARS	111.0	106.6	139.4	133.4	139.4	6.0
TOTAL WORKYEARS -----						
Water Quality Management	79.9	76.6	103.4	103.4	103.4	
Great Lakes Program	25.4	20.0	26.0	26.0	26.0	
Chesapeake Bay Program	16.3	10.0	10.0	10.0	10.0	
TOTAL WORKYEARS	121.6	106.6	139.4	139.4	139.4	

WQ-23

WATER QUALITY

Water Quality and Grants Program Management

Budget Request

The Agency requests a total of \$26,648,300 supported by 139.4 total workyears for 1989, a decrease of \$257,700 from 1988. Of the request, \$7,130,300 will be for the Salaries and Expenses appropriation and \$19,518,300 will be for the Abatement, Control and Compliance appropriation, an increase of \$412,300 and a decrease of \$670,000 respectively.

Program Description

The programs under this subactivity include:

Water Quality Management -- The goal of this program is to ensure that Federal, State and local agencies identify and control point and nonpoint source water quality problems. Headquarters and Regional staffs manage State financial assistance under Sections 106, non-construction grants 205(g), 205(j), and joint Federal/State programs under Sections 208 and 303. The nonpoint source control program, mandated by Section 319 of the Clean Water Act (CWA), requires the Agency to review and approve the assessment reports and management programs developed and implemented by the States.

Great Lakes Program -- This program has the ongoing responsibility for meeting the expanded Great Lakes nutrient and toxics monitoring and control requirements under Section 118 of the amended CWA, as well as the increased U.S. commitments under the Great Lakes Water Quality Agreement (GLWQA) of 1987 with Canada, which calls for increasing coordination with Canadian agencies. A major focus of the program is the ongoing cooperative measurement of ambient conditions in the Great Lakes, which is coordinated with Canada, to determine compliance with the objectives of the CWA and GLWQA. The monitoring components of the program measure water quality trends and the effectiveness of remedial responses to emerging pollution problems. The program also supports State and local governments in the development of Remedial Action Plans for the abatement of toxic and other problems in 30 U.S. Areas of Concern identified by the International Joint Commission. The development of an In-Place Pollutant Demonstration Program to address toxic harbor sediment problems is also a significant element of the Great Lakes program.

Chesapeake Bay Program -- This program has the ongoing responsibilities for meeting the Chesapeake Bay nutrient/toxics monitoring and control requirements under Section 117 of the amended CWA, as well as the Federal commitments under the Chesapeake Bay Agreement of 1987. The Agency assists the Bay States and the District of Columbia in implementing activities to control nutrient and toxic effects in the Bay. In addition to maintaining the Bay Liaison Office in Annapolis, the Agency provides cost sharing grant assistance to the States for implementing nutrient and toxic controls.

WATER QUALITY MANAGEMENT

1989 Program Request

The Agency requests a total of \$5,748,700 supported by 103.4 total workyears for this program, of which \$4,577,700 will be for the Salaries and Expenses appropriation and \$1,171,000 will be for the Abatement, Control and Compliance appropriation. This represents an increase of \$265,600 and \$930,000, respectively, and no change in total workyears. The increase in Salaries and Expenses reflects full year funding of additional workyears provided in 1988 to implement the Water Quality Act. The increase in Abatement, Control and Compliance is to address increased nonpoint source control activities.

In 1989, the review, revision, and final approval of State nonpoint source (NPS) assessment reports and management programs will continue, leading to the approval of approximately 52 State management programs by the end of the year. Headquarters will continue to support the Regions and States in this process by providing policies, guidance, and technical support. With the additional funds requested, the Agency will provide assistance to the States that choose to integrate NPS assessments/management programs into State Clean Water Strategies (SCWS). An annual report to Congress will be prepared summarizing the States' progress in implementing Section 319. Headquarters will conduct limited program audits to assure national consistency in the approval of State programs and the award and management of Section 205(j)(5) grants. Approximately 10 workshops and 10 consultations will be provided to States on proven technologies for the design and implementation of watershed-level control systems, largely making use of technology transfer among the States. Regions will negotiate and manage work programs for 205(j)(5) grants to 57 States and Territories to complete development and to begin implementation of NPS management programs.

Headquarters will continue allocating Section 106 funds to Regions, States and Indian tribes, provide guidance on basic program issues, conduct mid-year evaluations of Regional offices, evaluate the performance of selected Indian tribes and Regional organizations, and encourage States to include the development and implementation of SCWS in their Section 106 work programs. Regions will continue to negotiate and provide Sections 106, 205(j)(1) and non-construction 205(g) grant funds to 203 State, interstate, regional organizations and Indian Tribe water quality agencies. Regions will issue guidance and funding targets for specific priority activities, provide technical and management assistance, track and evaluate grantee performance using an expanded water quality management ADP system, and assure that State level-of-effort (LOE) requirements are met.

1988 Program

In 1988, the Agency is allocating a total of \$4,553,100 supported by 103.4 total workyears for this program, of which \$4,312,100 is from the Salaries and Expenses appropriation and \$241,000 is from the Abatement, Control and Compliance appropriation.

Headquarters is directing the development and approval of State NPS assessment reports and management programs, providing technical transfer/technical support to the Regions and States, and encouraging States to develop the NPS elements of SCWS. Headquarters will issue policies and guidance, including technical guidance that addresses the potential ground-water impacts of best management practices (BMPs) and encourages use of technological and managerial innovations developed through the Chesapeake Bay, Great Lakes, and the Department of Agriculture's Rural Clean Water Programs. Regions are providing review and approval of State submissions and assisting selected States to correct major deficiencies; negotiating and awarding 205(j)(5) grants; and providing support to ensure Federal, State and intra-agency consistency on NPS management. Regions will also encourage States to leverage the resources of other Federal agencies.

In 1988, Headquarters is conducting basic national grants management functions for Section 106 and 205(j) grants. The Water Quality Management grant regulations are being revised and policy and guidance are being issued to assist the Regions to provide grants to approximately 30 Indian Tribes and 50 regional organizations. Regional and selected State programs will be analyzed to determine whether Regions are implementing Agency priorities (especially toxics control), complying with performance-based grant requirements, and ensuring that States maintain Section 106 LOE requirements. Regional staff are working to negotiate and manage performance based 106, 205(j)(1) and non-construction 205(g) grants to State/interstate agencies that focus on point and nonpoint source problems that pose the greatest environmental risks. In 1988, Regions are beginning to provide grants directly to eligible Indian Tribes and provide a larger share of 205(j)(1) funding to regional organizations. Regions are also ensuring that State financial accounting systems are adequate.

1987 Accomplishments

In 1987, the Agency obligated \$4,499,700 supported by 79.9 total workyears for this program, of which \$3,813,700 was from the Salaries and Expenses appropriation and \$686,000 was from the Abatement, Control and Compliance appropriation.

In 1987, Headquarters refined and updated EPA's national NPS strategy and worked with related NPS programs to ensure inclusion of NPS management activities in their program efforts. Headquarters continued to work with the U.S. Department of Agriculture (USDA) on direction and oversight of the Rural Clean Water Program, with the Tennessee Valley Authority and seven southern States in developing the "Land and Water 201" program, and with other Federal agencies to obtain their technical and financial support for State and local NPS initiatives. Headquarters and Regions developed and issued national guidance on the implementation of Section 319 activities, met with interested parties to assure their participation in the development and implementation of the national program guidance and SCWS; and began to review work plans and award grants under Section 205(j)(5) for development of assessment reports and management programs.

The Agency continued the essential functions of allocating Section 106 funds, providing guidance on basic program issues, ensuring State compliance with LOE requirements and conducting mid-year evaluations of Regional offices. Headquarters continued to provide Regions with assistance on an ADP system that will enhance Regional capability to negotiate and track State workplan commitments.

GREAT LAKES PROGRAM

1989 Program Request

The Agency requests a total of \$9,433,400 supported by 26.0 total workyears for this program, of which \$1,336,100 will be for the Salaries and Expenses appropriation and \$8,097,300 will be for the Abatement, Control and Compliance appropriation. This represents an increase of \$76,800 in the Salaries and Expenses appropriation, a decrease of \$1,600,000 in the Abatement, Control and Compliance appropriation, and no change in total workyears. The increase in Salaries and Expenses reflects full year funding of additional workyears provided in 1988 to implement the Water Quality Act (WQA). The decrease in Abatement, Control and Compliance is due to the completion of the purchase of a replacement research vessel.

Under the WQA and the Great Lakes Water Quality Agreement (GLWQA), the Great Lakes National Program Office (GLNPO) will continue to provide technical and management leadership to address the emerging problems of persistent toxics in tributaries and near shore waters. This involves continuing support to State and local agencies in completion of Remedial Action Plans (RAPs) for 6 more of the 30 U.S. Areas of Concern identified by the International Joint Commission (IJC), which must also approve the plans. By the end of 1989, 26 of the 30 plans will be completed.

As the plans are completed and approved, the program office will begin tracking the implementation of plan elements by the appropriate State/local or Federal agencies.

Complementary to this activity will be the continuation of the first In-Place Pollutant Demonstration project at a site being selected in 1988 on the basis of environmental priorities. This project supports RAP implementation by determining feasible methods for abatement of the in-place pollutant problems, which have been identified in most of the Areas of Concern. Further support for RAP implementation will be provided by the National Oceanic and Atmospheric Administration (NOAA) research under the EPA-NOAA joint research plan through an interagency agreement. The program office will also continue to provide the IJC and its Water Quality Board with technical and policy support and also will continue to participate in bi-national committees and task forces. The program will respond to information requests and provide technical support to EPA Headquarters and to the Department of State on official Canadian requests and notes concerning the United States' Great Lakes policies and programs. GLNPO will also continue to provide support to Regions II, III, and V on water quality standards and on technical matters in the development and review of permits and permit compliance impacting the Great Lakes.

Great Lakes monitoring activities will continue through annual programs for conventional and toxic pollutants, for collection, analyses, and reporting on both open lake migratory and near shore non-migratory fish, and for collection of precipitation samples through the Great Lakes Atmospheric Deposition (GLAD) network for the analyses of metals, nutrients, and organic toxics. In 1989, surveillance activities will be expanded to include biological sampling and additional air monitoring stations in the GLAD network. These analyses will continue to be used to determine metals and nutrient loadings to the Great Lakes as a basis for the design and operation of local pollution abatement programs.

1988 Program

In 1988, the Agency is allocating a total of \$10,956,600 supported by 26.0 total workyears for this program, of which \$1,259,300 is from the Salaries and Expenses appropriation and \$9,697,300 is from the Abatement, Control and Compliance appropriation.

GLNPO is completing the preliminary field work and biological and chemical studies required to select a site and begin the first In-Place Pollutant Demonstration project in 1988. This includes developing the ranking and selection process to choose the demonstration site to be initiated. GLNPO is continuing to provide direction and technical assistance in completing the development, review, approval and implementation of RAPs for 12 of the 30 U.S. Areas of Concern. The program office is beginning this year to track the implementation and reporting of the RAPs. Currently, seven plans are being submitted to the IJC for the required bi-national review.

The program office is preparing the 1988 Nonpoint Source Reduction Plan Implementation Report called for under Annex 3 of the GLWQA. GLNPO is tracking nonpoint source pollution control practices according to the revised tracking system. It is also providing technical assistance and monitoring for the Great Lakes States' phosphorus reduction efforts, including elements of the 1986 United States Plan for Phosphorus Load Reduction to Lake Erie, Lake Ontario and Saginaw Bay. Tributary monitoring for toxic pollutants is being continued and expanded. Support to the IJC's Water Quality Board is being expanded to provide greater assistance in working out the details for implementing the revisions to the GLWQA signed by both countries in 1987. The acquisition and equipping of a new research vessel is providing new on-board sampling and analytical capacity for toxic substances in the water column and sediments of the Great Lakes. The Great Lakes Atmospheric Deposition network is being augmented to increase the analytical and research components of the network. Work is being expanded in the Green Bay Mass Balance Modeling

Study and in the area of toxic source assessment. The Green Bay study is continuing to develop predictive models for identification, transport and fate of toxic substances. If feasible, these models will be used on one of the Great Lakes.

GLNPO is beginning the negotiation of Interagency Agreements with the agencies specified in the WQA. An Interagency Agreement is to be negotiated with NOAA to jointly carry out a research inventory, report on research issues, and prepare a Great Lakes research plan. GLNPO is completing the reports to the Administrator and Congress as required by the WQA.

1987 Accomplishments

In 1987, the Agency obligated a total of \$5,605,300 supported by 25.4 total workyears for this program, of which \$1,344,200 was from the Salaries and Expenses appropriation and \$4,261,000 was from the Abatement, Control and Compliance appropriation.

The program office began preliminary work to meet WQA requirements for selecting and initiating the first In-Place Pollutant Demonstration project in 1988. The office also continued to conduct monitoring activities and laboratory analysis with emphasis on in-place toxics and operation of the modified GLAD network to identify and quantify airborne toxics. GLNPO initiated a mass balance study for Green Bay. The program office continued a major effort to assist State/local agencies in completion, review, and approval of RAPs for 8 of 30 U.S. Areas of Concern, and also worked with all concerned parties on revisions to the GLWQA.

GLNPO continued its sampling network and laboratory activities. Water chemistry, biota, sediment and air analyses called for under the GLWQA were carried out. The program office also continued as the catalyst in the development of uniform multi-state fish consumption advisories. The fish advisories, in place for Lake Michigan, were negotiated among Illinois, Indiana, Michigan, and Wisconsin.

CHESAPEAKE BAY PROGRAM

1989 Program Request

The Agency requests a total of \$11,466,200 supported by 10.0 total workyears for this program, of which \$1,216,200 will be for the Salaries and Expenses appropriation and \$10,250,000 will be for the Abatement, Control and Compliance appropriation. This represents an increase of \$69,900 in Salaries and Expenses, no change in Abatement, Control and Compliance, and no change in total workyears. The increase in Salaries and Expenses reflects increased personnel costs.

The Agency will continue to meet its expanded responsibilities under the Chesapeake Bay Agreement (CBA) of 1987 among the three Bay States of Pennsylvania, Maryland, and Virginia, the District of Columbia, and the Agency. Most significantly, the CBA commits the Bay States to reduce the level of nutrients in the Bay by 40 percent by the year 2000. In addition, the Water Quality Act (WQA) of 1987 requires a closer look into problems of toxicity through the program's ongoing monitoring activities. Under the expanded WQA responsibilities and CBA commitments, the Chesapeake Bay Liaison Office (CBLO) will continue to provide technical and management leadership in nutrient control and to begin addressing the emerging problems of persistent toxics in the Bay basin. The CBLO will continue investigations into nonpoint toxic sources, including in-place toxics in sediments, surface microlayer toxicity, and other nonpoint sources. In 1989, this investigation of toxicity in the Bay will result in specific plans for source reduction. The program will continue to give priority to nonpoint source pollution controls, the development of the time-varying Bay water quality model, and the monitoring efforts needed to calibrate it. Several reports required by the CBA will be prepared.

Building on the knowledge gained over the past several years concerning the effectiveness of best management practices (BMPs) to reduce erosion/sedimentation and manage animal waste, the States and EPA will add to the number of acres treated and improve the rate of progress in reducing the flow of nutrients to the Bay. Using monitoring data, geographic information system capabilities, and water quality models, the CBL0 will work with the States to improve nonpoint source control targeting. By combining living resources, habitat requirements, and the geographic locations of prime habitat with monitoring data, and by modeling the effects of current and proposed point and nonpoint source control actions, the CBL0 will provide the State and Federal CBA participants with the information necessary to target efforts better and to improve cost effectiveness. The information from the inspection of BMP installations will also be used in 1989 to further enhance nonpoint source control targeting and to modify the nonpoint source control programs as necessary.

The Agency will continue to provide technical and administrative staff support to the Chesapeake Bay Implementation Committee and Executive Council. Coordination functions will be carried out with the States, other Federal Agencies, and other Bay management agencies to ensure continued progress is made in restoring Bay water quality. The Agency's support for monitoring the mainstem of the Bay will continue in concert with the States' focus on monitoring the major tributaries. Continued support will be provided for maintaining and improving the Chesapeake Bay data system which is reported on annually.

1988 Program

In 1988, the Agency is allocating a total of \$11,396,300 supported by 10.0 total workyears for this program, of which \$1,146,300 is from the Salaries and Expenses appropriation and \$10,250,000 is from the Abatement, Control and Compliance appropriation.

The Agency is working with the Bay States to implement the elements of the 1987 CBA. This includes beginning to develop criteria for the protection of water quality and habitat conditions, a plan to reduce and control toxic materials entering the Bay from point and nonpoint sources, and a plan to achieve point and nonpoint source reduction from Federal installations that parallel the States' load reduction.

Matching grants for the implementation of the nonpoint sources controls are continuing to achieve agreed upon pollutant load reductions. Assistance is primarily provided to identify critical farm units within sub-basins, develop plans and schedules for implementing BMPs, define outreach programs to encourage farmer participation, and develop long-term comprehensive implementation programs. The continuing objective is to demonstrate the effectiveness of BMPs in critical areas so that more farmers will adopt the practices. Water quality monitoring of pilot areas is being used in conjunction with water quality models to continue to evaluate the results of nonpoint source control implementation and develop quantitative relationships between pollution controls and improvement of water quality. Work is being expanded in the areas of toxics control and coordination of pollution controls to improve the management of living resources in the Bay. This work includes initial investigations into nonpoint sources of toxics, such as sediments and the surface microlayer.

The research and programmatic activities relating to the Bay and its basin of the National Oceanic and Atmospheric Administration, the U.S. Geological Survey, the Corps of Engineers, the U.S. Department of Agriculture, and the Fish and Wildlife Service of the Department of the Interior are continuing to be coordinated through the CBL0.

1987 Accomplishments

In 1987, the Agency obligated a total of \$10,379,500 supported by 16.3 total workyears for this program, of which \$1,131,800 was from the Salaries and Expenses appropriation and \$9,247,700 was from the Abatement, Control and Compliance appropriation.

During 1987, the Agency continued to award grants to the Bay States to implement the recommendations of the Chesapeake Bay Restoration and Protection Plan of 1985. These 50 percent cost sharing grants continued to emphasize nonpoint source control efforts and were targeted on projects which support the long-term need for reducing loadings of toxics and nutrients. Grant assistance was also provided to implement controls on new urban and suburban development and on methods to retrofit nonpoint source controls in developed areas. About 90,000 acres have been treated with BMPs, and 540,000 tons of soil have been saved from erosion and nearly 600,000 pounds of phosphorus have been prevented from entering the Bay.

The first phase of the work to produce a steady state model of water quality in the Bay was completed and a three-year effort to produce a second generation, time-varying model of Bay water quality was begun. These models are the bridge between future water quality, living resource criteria and objectives, and future point and nonpoint source load controls programming. The models are to provide the analytical tools which will be used to estimate required load reductions.

During 1987, the Agency worked with the Bay States to develop and negotiate the revised CBA. Public hearings were held on the draft agreement and the final agreement was signed in December 1987.

WATER QUALITY
Effluent Standards & Guidelines

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988
--	----------------	----------------------------	-----------------	-----------------------------	-----------------	--

(DOLLARS IN THOUSANDS)

PROGRAM

Effluent Standards &
Guidelines

Salaries & Expenses	\$3,168.0	\$2,876.5	\$3,307.8	\$3,307.8	\$3,522.8	\$215.0
Abatement Control and Compliance	\$4,344.4	\$3,412.4	\$3,412.4	\$3,412.4	\$6,212.4	\$2,800.0
TOTAL	\$7,512.4	\$6,288.9	\$6,720.2	\$6,720.2	\$9,735.2	\$3,015.0

TOTAL:

Salaries & Expenses	\$3,168.0	\$2,876.5	\$3,307.8	\$3,307.8	\$3,522.8	\$215.0
Abatement Control and Compliance	\$4,344.4	\$3,412.4	\$3,412.4	\$3,412.4	\$6,212.4	\$2,800.0
TOTAL	\$7,512.4	\$6,288.9	\$6,720.2	\$6,720.2	\$9,735.2	\$3,015.0

PERMANENT WORKYEARS

Effluent Standards & Guidelines	50.5	49.0	51.0	50.2	50.2	
TOTAL PERMANENT WORKYEARS	50.5	49.0	51.0	50.2	50.2	

TOTAL WORKYEARS

Effluent Standards & Guidelines	52.4	49.0	51.0	50.2	50.2	
TOTAL WORKYEARS	52.4	49.0	51.0	50.2	50.2	

WQ-31

WATER QUALITY

Effluent Standards and Guidelines

Budget Request

The Agency requests a total of \$9,735,200 supported by 50.2 total workyears for 1989, an increase of \$3,015,000 from 1988. Of the request, \$3,522,800 will be for the Salaries and Expenses appropriation and \$6,212,400 will be for the Abatement, Control and Compliance appropriation, an increase of \$215,000 and \$2,800,000 respectively.

Program Description

Effluent Standards and Guidelines - This program develops and promulgates effluent standards and guidelines under Sections 301, 304, 306, 307 and 501 of the Clean Water Act (CWA) based on Best Available Technology Economically Achievable (BAT); Best Conventional Technology (BCT); New Source Performance Standards (NSPS); Pretreatment Standards for Existing Sources (PSES); and Pretreatment Standards for New Sources (PSNS).

Increasing program emphasis is directed at (1) establishing effluent limitations for industries discharging directly to waterways and indirectly through POTWs and (2) reviewing and identifying new and previously regulated industrial categories for revisions to existing standards or promulgation of new standards as directed by Section 304(m), as amended by the Water Quality Act. The Domestic Sewage Study (DSS), required by Section 3018(a) of the Hazardous and Solid Waste Amendments (HSWA) to the Resource Conservation and Recovery Act (RCRA), identified risks associated with hazardous wastes passing through sewer systems into POTWs. Section 3018(a) requires the revision of existing regulations and promulgation of new regulations to protect human health and the environment from these hazardous substances.

EFFLUENT STANDARDS AND GUIDELINES

1989 Program Request

The Agency requests a total of \$9,735,200 supported by 50.2 total workyears for this program, of which \$3,522,800 will be for the Salaries and Expenses appropriation and \$6,212,400 will be for the Abatement, Control and Compliance appropriation. This represents an increase of \$215,000 and \$2,800,000, respectively, and no change in total workyears. The increase in Salaries and Expenses reflects full year funding of additional workyears provided in 1988 to implement the Water Quality Act. The increase in Abatement, Control and Compliance will be used to initiate and continue development of effluent guidelines.

In 1989, the Effluent Guidelines program will develop controls or prepare guidance for the non-regulated DSS industries and analyze for an additional 300 new target analytes. Headquarters will initiate regulations development on the equipment manufacturing and rebuilding industry and the pharmaceuticals industry; and initiate development of guidance or regulations addressing the hazardous waste treaters industry. The work on textiles and timber that was suspended in 1988 will be resumed in 1989. The program will continue to review and prepare a decision document for the previously regulated pulp and paper industry. Data gathering and engineering evaluations will be initiated on one additional previously regulated industry (onshore oil and gas). All reviews will be conducted according to the 304(m) plan to be published in the Federal Register in 1988. A major emphasis in rulemaking activities will be to initiate development of regulations for the

coastal oil and gas industry. Field sampling and questionnaire survey data obtained in 1988 will be evaluated. Development of a proposed regulation for the pesticide manufacturers and formulator/packagegers will continue.

Headquarters will also provide post-promulgation negotiation and litigation support for placer mining, the nonferrous forming and manufacturing phase II regulatory amendments, and continue support for the organics effluent limitations published in 1987. Eight comprehensive technical policy workshops will be conducted covering the progress of the pesticides regulations, the effluent limitation associated with the organics regulations, findings of analytical studies and the DSS industries, and the oil and gas regulatory efforts.

1988 Program

In 1988, the Agency is allocating a total of \$6,720,200 supported by 50.2 total workyears for this program, of which \$3,307,800 is from the Salaries and Expenses appropriation and \$3,412,400 is from the Abatement, Control and Compliance appropriation.

In 1988, the review of the pulp and paper industry continues. Ten decision documents are to be published (transportation, equipment manufacturing and rebuilding, paint, industrial laundries, waste oil recovery, hospitals, hazardous waste treaters, solvent recyclers, barrel reclaimers and pharmaceuticals). Work on the review of the two remaining DSS industries (textiles and timber) was suspended. The Agency is initiating development of regulations for pharmaceuticals and final regulations will be issued for placer mining; two notices of availability of data and a reproposal for Best Conventional Technology (BCT) on offshore oil and gas, and muds and cuttings are being developed. The program is restudying the pesticides industry by addressing over 420 previously unregulated pesticides, hazardous constituents under RCRA and toxic pollutants of concern to the Drinking Water program. In 1988, a plan to review previously regulated industries will be published. Biological monitoring, sampling and analysis for RCRA constituents and other toxic compounds in effluents from pesticides will be initiated.

Support is being provided for post-promulgation negotiation and litigation, primarily for the organic chemicals, plastics and synthetic fibers regulations.

1987 Accomplishments

In 1987, the Agency obligated \$7,512,400 supported by 52.4 total workyears for this program, of which \$3,168,000 was from the Salaries and Expenses appropriation and \$4,344,400 was from the Abatement, Control and Compliance appropriation.

In 1987, Headquarters analyzed regulated and unregulated industries for the extent of hazardous/toxic discharges identified by the Domestic Sewage Study (DSS). Work continued on decision documents for permit writers and control authorities on ten industrial categories (hazardous waste treaters, solvent recyclers, barrel reclaimers, pharmaceuticals, equipment manufacturing and rebuilding, transportation, paint, industrial laundries, waste oil recovery, and hospitals). Final regulations were developed for three Consent Decree industries and the final amendment to the phosphate fertilizer regulation was issued. A report on dioxins in the pulp and paper industry was issued.

WATER QUALITY
Grants Assistance Programs

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988	
----- (DOLLARS IN THOUSANDS) -----							
PROGRAM -----							
Clean Lakes Program							
Abatement Control and Compliance	\$4,765.4						
TOTAL	\$4,765.4						
Control Agency Resource Supplementation (Section 106)							
Abatement Control and Compliance	\$71,100.1	\$62,100.0	\$60,850.0	\$60,850.0	\$62,100.0	\$1,250.0	
TOTAL	\$71,100.1	\$62,100.0	\$60,850.0	\$60,850.0	\$62,100.0	\$1,250.0	
TOTAL:							
Abatement Control and Compliance	\$75,865.5	\$62,100.0	\$60,850.0	\$60,850.0	\$62,100.0	\$1,250.0	
Grants Assistance Programs	TOTAL	\$75,865.5	\$62,100.0	\$60,850.0	\$60,850.0	\$62,100.0	\$1,250.0

WQ-34

WATER QUALITY

Grants Assistance Programs

Budget Request

The Agency requests a total of \$62,100,000 for 1989, an increase of \$1,250,000 from 1988. All of the request will be for the Abatement, Control and Compliance appropriation.

Program Description

The programs under this subactivity include:

Clean Lakes Program -- Section 314 of the Clean Water Act sets forth the administrative and technical requirements for developing a national program to enhance the quality of freshwater lakes. In February 1980, the Clean Lakes regulation established an operational program of financial and technical assistance to the States to assist in implementing methods and procedures to protect and restore the quality of their publicly owned freshwater lakes.

Control Agency Resource Supplementation (Section 106) -- Section 106 grants supplement State resources for water pollution control programs. They are negotiated annually with 50 States, 7 Territories, and 6 Interstate agencies, and qualified Indian tribes. Funds are used to carry out a wide range of water quality programs, including permit issuance, enforcement, monitoring, water quality planning and standards, wasteload allocations, groundwater programs, nonpoint source control, program management, pretreatment, oil and hazardous materials spill response, and other priority programs.

CLEAN LAKES PROGRAM

1989 Program Request

The Agency requests no funds for the Clean Lakes program. In past years the Agency has developed and demonstrated lake restoration techniques and assisted States in classifying lakes, identifying techniques for restoring the levels of water quality needed to maintain or enhance uses, and implemented cleanup and control projects. Because the Agency has provided guidance to the States on maintaining clean lakes, it believes that the States are now able to address lake restoration needs, along with other local priorities, under their existing water quality management programs.

1988 Program

In 1988, no funds are being allocated for this program.

1987 Accomplishments

In 1987, the Agency obligated a total of \$4,765,400 for this program, all of which was from the Abatement, Control and Compliance appropriation. Forty-nine State grants were awarded to implement actual control measures and refine controls needed to restore or enhance uses for specific lakes.

CONTROL AGENCY RESOURCE SUPPLEMENTATION (SECTION 106)

1989 Program Request

The Agency requests a total of \$62,100,000 for this program, all of which will be for the Abatement, Control and Compliance appropriation. This represents an increase of \$1,250,000 from 1988. The increase reflects a restoration of the program to the 1988 President's Budget level to provide additional grant funds to States to partially offset the reduction of resources available from construction grant set-asides.

Section 106 grants will provide funding assistance for operation of State water pollution control programs for 63 State, Interstate and Territorial agencies, and approximately 30 Indian tribes. In 1989, States will review water quality standards, adopt numeric and/or narrative water quality standards for toxic pollutants and toxicity, list waters impaired by toxics and identify contributing point sources, and develop individual control strategies to comply with Section 304(1). In support of water quality-based permits, States will resolve complex use/criteria revision and modification issues and will review antidegradation policies and develop implementation methods. Special emphasis will be placed on determining priority water segments requiring site-specific criteria, collecting data, and selecting appropriate methods and procedures for use attainability analyses.

States will issue/reissue expiring NPDES permits to control toxic pollutants and toxicity where water quality is impaired due to toxics/toxicity problems and data are sufficient to establish water quality-based permits. States will also modify a number of NPDES permits that have not expired, where Section 304(1) assessments have been completed and the need for toxics controls has been determined; issue permits that incorporate toxic/toxicity limits or biomonitoring requirements where Section 304(1) assessments are not yet completed but where toxic problems have been identified; and issue Best Available Technology (BAT) permits to organic chemical facilities. States will develop sludge programs and work with EPA to incorporate sludge limits and/or impose biomonitoring requirements in some NPDES permits for publicly owned treatment works (POTWs) and/or other sludge handling facilities. States will assist POTWs with approved local pretreatment programs in developing/modifying new and revised categorical standards and local limits to control toxic/hazardous pollutants. States will continue to conduct audits to determine the adequacy of local pretreatment programs. States will revise nonpoint source management programs based on EPA reviews.

In the NPDES enforcement program, States will be concluding the National Municipal Policy (NMP) effort primarily by use of judicial actions to set schedules for facilities that missed the July 1, 1988 deadline for compliance. In pretreatment enforcement, States will ensure that industrial users comply with their categorical standards and that local control authorities comply with provisions of their approved programs. States will conduct pretreatment compliance inspections, and will ensure that POTWs have adequate control mechanisms in place. States will continue to conduct both sampling and non-sampling inspections and will be encouraged to use penalties to enforce BAT and water quality-based permit requirements to address critical water-quality objectives. States will review and refine their groundwater protection strategies to focus on the totality of their groundwater protection and clean-up concerns.

1988 Program

In 1988, the Agency is allocating a total of \$60,850,000 for this program, all of which is from the Abatement, Control and Compliance appropriation.

During 1988, States are continuing to emphasize the control of toxic pollutants. States are working to establish technically sound, enforceable water quality standards, conduct use attainability analyses, develop site-specific criteria, adopt

criteria for toxic pollutants in State standards, and clarify antidegradation policies and implementation methods. States are collecting and evaluating existing information, and will use this information to develop the list of waters impaired by toxic point source pollutants and toxicity, and to develop individual control strategies. States are continuing the emphasis on control of hazardous/toxic pollutants and toxicity from direct dischargers and will concentrate on issuing NPDES permits to achieve water quality standards within three years after the establishment of the individual control strategies.

In 1988, States are modifying permits to incorporate BAT guidelines for organic chemicals, best management practices, conditions based on biomonitoring and water quality studies, new technology-based requirements, and pretreatment implementation requirements, as well as some permits with sludge limits based on Best Professional Judgement (BPJ) and/or sludge management practices. States are developing detailed action plans to strengthen their toxic control programs. States are working with the Regions to manage a substantial increase in enforcement actions, particularly referrals, due to the 1988 NMP deadline. States will shift from manual data entry and review procedures to an automated system of data management for EPA (Permits Compliance System). In 1988, some States will begin to develop State Clean Water Strategies (SCWS) for their overall water quality protection and clean up, and will continue their groundwater protection strategy efforts. Headquarters will begin to award grants to Indian tribes for water pollution control program development on reservations.

1987 Accomplishments

In 1987, the Agency obligated a total of \$71,100,100 for this program, all of which was from the Abatement, Control and Compliance appropriation.

States issued about 350 major industrial and 475 major municipal NPDES permits and accomplished over 360 permit modifications. Over 4,600 compliance sampling inspections were completed. States completed approximately 160 audits/1,400 inspections of POTWs. Analytical capabilities were developed to support increased emphasis on water quality-based permitting and toxic effluent limits for NPDES permits. States conducted water quality assessments and risk assessments for 304(l) toxic control strategies, and revised monitoring programs to address toxic pollutants and nonpoint sources. States continued to review and revise water quality standards and began emphasizing and incorporating numeric and/or narrative toxic criteria.

WATER QUALITY
Water Quality Strategies Implementation

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988
----- (DOLLARS IN THOUSANDS) -----						
PROGRAM						

Dredge and Fill						
Salaries & Expenses	\$3,539.9	\$4,156.3	\$4,385.1	\$4,385.1	\$4,657.7	\$272.6
Abatement Control and Compliance	\$2,084.9	\$1,992.5	\$1,992.5	\$1,992.5	\$3,050.0	\$1,057.5
TOTAL	\$5,624.8	\$6,148.8	\$6,377.6	\$6,377.6	\$7,707.7	\$1,330.1
Ocean Disposal Permits						
Salaries & Expenses	\$2,641.2	\$2,959.4	\$2,591.5	\$2,591.5	\$2,654.1	\$62.6
Abatement Control and Compliance	\$7,193.8	\$6,127.9	\$4,624.8	\$4,774.8	\$4,927.9	\$153.1
TOTAL	\$9,835.0	\$9,087.3	\$7,216.3	\$7,366.3	\$7,582.0	\$215.7
Environmental Emergency Response & Prevention						
Salaries & Expenses	\$1,936.3	\$2,080.0	\$1,938.4	\$1,938.4	\$1,521.2	-\$417.2
Abatement Control and Compliance	\$1,642.0	\$1,200.0	\$1,200.0	\$1,200.0	\$1,200.0	
TOTAL	\$3,578.3	\$3,280.0	\$3,138.4	\$3,138.4	\$2,721.2	-\$417.2
Standards & Regulations						
Salaries & Expenses	\$4,187.7	\$4,652.9	\$4,544.2	\$4,544.2	\$4,864.1	\$319.9
Abatement Control and Compliance	\$2,900.0	\$2,115.3	\$2,415.3	\$2,415.3	\$3,425.3	\$1,010.0
TOTAL	\$7,087.7	\$6,768.2	\$6,959.5	\$6,959.5	\$8,289.4	\$1,329.9

WQ-38

WATER QUALITY
Water Quality Strategies Implementation

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988
--	----------------	----------------------------	-----------------	-----------------------------	-----------------	--

(DOLLARS IN THOUSANDS)

TOTAL:

Salaries & Expenses	\$12,308.2	\$13,848.6	\$13,459.2	\$13,459.2	\$13,697.1	\$237.9
Abatement Control and Compliance	\$13,820.7	\$11,435.7	\$10,232.6	\$10,382.6	\$12,603.2	\$2,220.6

Water Quality Strategies Implementation	TOTAL \$26,128.9	\$25,284.3	\$23,691.8	\$23,841.8	\$26,300.3	\$2,458.5
---	------------------	------------	------------	------------	------------	-----------

PERMANENT WORKYEARS

Dredge and Fill	70.2	86.3	104.3	98.8	103.9	5.1
Ocean Disposal Permits	49.2	55.4	58.4	45.1	45.4	.3
Environmental Emergency Response & Prevention	44.7	47.0	47.0	42.6	37.0	-5.6
Standards & Regulations	81.3	91.6	91.6	89.7	92.8	3.1
TOTAL PERMANENT WORKYEARS	245.4	280.3	301.3	276.2	279.1	2.9

TOTAL WORKYEARS

Dredge and Fill	77.7	86.3	104.3	103.9	103.9	
Ocean Disposal Permits	52.8	55.4	58.4	47.4	45.4	-2.0
Environmental Emergency Response & Prevention	50.2	47.0	47.0	47.0	37.0	-10.0

MQ-39

FY1989

WATER QUALITY
Water Quality Strategies Implementation

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988
----- (DOLLARS IN THOUSANDS) -----						
Standards & Regulations	85.2	91.6	91.6	92.8	92.8	
TOTAL WORKYEARS	265.9	280.3	301.3	291.1	279.1	-12.0

WATER QUALITY

Water Quality Strategies Implementation

Budget Request

The Agency requests a total of \$26,300,300 supported by 279.1 total workyears for 1989, an increase of \$2,458,500 and a decrease of 12.0 total workyears from 1988. Of the request, \$13,697,100 will be for the Salaries and Expenses appropriation and \$12,603,200 will be for the Abatement, Control and Compliance appropriation, an increase of \$237,900 and \$2,220,600 respectively.

Program Description

The Headquarters and Regional programs under this subactivity include:

Dredge and Fill -- This program implements EPA's responsibilities under Section 404 of the Clean Water Act (CWA) to ensure that discharges of dredged and fill material are done in a manner which adequately protects wetlands and other waters of the United States. Activities are included to develop State programs to protect wetlands and coordinate public and private programs affecting wetlands to improve levels of protection for environmentally important functions.

Ocean Disposal Permits -- The ocean disposal program regulates ocean disposal by outfalls and dumping, designates disposal sites, develops ocean disposal policies, and participates in inter-agency programs that deal with the development and protection of ocean resources. The Agency's ocean disposal programs are authorized by the Marine Protection, Research and Sanctuaries Act (MPRSA), the CWA, and the Plastic Pollution Research and Control Act of 1987, and are consistent with the mandatory provisions of the Convention on Prevention of Marine Pollution by Dumping of Wastes and Other Matter, known as the London Dumping Convention.

To carry out ocean disposal permitting functions, the Administrator of EPA is authorized to regulate the disposal of all materials, except dredged material, which is regulated by the Corps of Engineers. MPRSA prohibits the transportation and dumping in ocean water of chemical, biological, and radiological warfare agents and high level radioactive materials. EPA has statutory responsibility for designating all ocean dumping sites, including those for dredged material.

Environmental Emergency Response and Prevention -- This program protects public health and the environment from the hazards associated with accidental releases of oil and other petroleum products into navigable waters of the United States. EPA shares responsibility for this program with the United States Coast Guard.

The Agency coordinates an emergency response program to provide a nationwide capability for containment and removal of accidental releases of oil and other petroleum products. EPA establishes a policy framework, ensures national consistency of field operations, and maintains the oil component of the Environmental Response Team (ERT) which provides special engineering and technical advice. The Agency also has responsibility to maintain a 24-hour alert system to respond to notifications of accidental releases and manage the response work.

Standards and Regulations -- This program implements water quality-based controls by setting water quality standards under Sections 303, 304(a), and 307(a) of the CWA. EPA and the States use the water quality criteria adopted in the standards as the basis for water quality-based controls. EPA publishes guidance on water quality criteria applicable to freshwater, marine, and estuarine environments and sediments. Under Section 405, the Agency develops and publishes regulations which provide guidelines for the disposal and utilization of sludge. This program also includes management of the Clean Lakes grants program.

DREDGE AND FILL

1989 Program Request

The Agency requests a total of \$7,707,700 supported by 103.9 total workyears for this program, of which \$4,657,700 will be for the Salaries and Expenses appropriation and \$3,050,000 will be for the Abatement, Control and Compliance appropriation. This represents an increase of \$272,600 and \$1,057,500, respectively, and no change in total workyears. The increases reflect the Agency's focus on wetlands issues and support for State programs to protect wetlands.

In 1989 additional program and technical guidance will be developed on wetlands protection. Study efforts will emphasize increasing the scientific knowledge of wetlands values and functions, and increased assistance will be provided to States and local entities.

The program will continue its efforts to enhance the Section 404 program which ensures that discharges of dredged and fill material meet basic environmental criteria. While the Army Corps of Engineers retains the primary responsibility for issuing permits for the disposal of dredged and fill material, the Agency has several key responsibilities in the administration and implementation of the program. These responsibilities include assuring that the permits comply with the environmental criteria contained in the Section 404(b)(1) Guidelines, restricting or prohibiting permit issuance if the effects are determined to be environmentally unacceptable, delegating to interested and qualified States authority to administer the Section 404 program, and bringing civil or criminal enforcement actions against unauthorized dischargers and permit violators.

A number of guidance documents and technical manuals will be revised or developed to reflect evolving Agency policy. The final mitigation policy, under the Section 404(b)(1) Guidelines, will be completed and implementation will begin. EPA will issue technical guidance regarding Section 404(c), EPA's "veto" authority over permit issuance, and will be preparing revised regulations. Other technical guidance is planned for open-water disposal of contaminated soil and de-minimus discharges.

Enforcement activities under Section 404 will be emphasized. The program expects to develop an enforcement practices manual and conduct State enforcement workshops in 1989. The statutorily mandated Report to Congress on Section 404 enforcement mechanisms will also be issued. The Agency will pursue the potential for field inspection support by other agencies in enforcement actions as well as continue its efforts to implement the new administrative penalty enforcement authorities for Section 404 compliance.

The program will continue to develop technical methods and data to support its Section 404 regulatory operations. A geographic jurisdiction delineation manual, developed in conjunction with the Corps of Engineers, will be issued in 1989, and two technical methods manuals resulting from the Bottomland Hardwoods studies will be published. The first manual will provide information on wetland evaluation in Bottomland Hardwood ecosystems and the second will finalize a method to determine cumulative impacts.

The Agency will work with States, Indian tribes and local entities to promote delegation of the Section 404 administrative responsibilities to increase wetland protection efforts. Guidance on State assumption of the program will be issued in 1989. Because of the unique authorities of local governments (e.g., taxation, parks and recreation planning), the program will develop specific initiatives directly related to local government activities for wetlands protection. The State Clean Water Strategies will also be a means for identifying wetland protection efforts and needs and integrating these into more comprehensive protection and regulatory activities at the State and local levels. A handbook on community relations related to Advanced Identification (a joint EPA/Corps of Engineers effort to

identify sensitive wetlands prior to decisions on permitting) will be completed in 1989. A pilot project at the Regional level will also be undertaken to assess the use of Advanced Identification within a particular geographic area.

1988 Program

In 1988 the Agency is allocating a total of \$6,377,600 supported by 103.9 total workyears for this program, of which \$4,385,100 is from the Salaries and Expenses appropriation and \$1,992,500 is from the Abatement, Control and Compliance appropriation.

The policy framework for the Section 404 program continues to be strengthened through issuance of guidance and technical manuals in 1988. The base program of permit review, enforcement and advanced identification is being enhanced by the joint efforts of EPA and the Corps of Engineers. In particular, the enforcement program will utilize the Water Quality Act's new administrative penalty enforcement authorities for Section 404 compliance. Other efforts include the issuance of a mitigation policy and guidance on alternatives analyses. Technical guidance on Section 404(c) is under development and the program will initiate revisions to these regulations in 1988.

In 1988 more attention is being given to geographic areas where the most significant environmental problems are occurring from the loss of wetlands. The Agency, working with the Corps of Engineers and other Federal, State and local governments, is identifying particularly valuable wetland resources that are threatened by increasing development/conversion pressures. Regions will use this process in 1988 to anticipate future permit needs and problems.

The National Forum on Wetlands will be completed this year, and appropriate steps will be taken to act upon its recommendations for a better national approach to wetlands protection. Other cooperative efforts with Federal agencies and the private sector to enhance scientific knowledge and technical data bases for wetland protection are continuing. The joint EPA and Army Corps of Engineers methodology for establishing jurisdictional limits of wetlands is being completed this year. The Agency is also initiating an assessment/monitoring project on wetlands status and quality.

1987 Accomplishments

In 1987, the Agency obligated a total of \$5,624,800 supported by 77.7 total workyears for this program, of which \$3,539,900 was from the Salaries and Expenses appropriation and \$2,084,900 was from the Abatement, Control and Compliance appropriation.

The Agency developed and issued a number of policy, procedural and guidance documents in 1987 to ensure the effective implementation of EPA's Section 404 responsibilities. These activities included interagency efforts to develop a mitigation policy under Section 404(b)(1) Guidelines, issuance of rules and guidance under the new administrative penalty authority, joint guidance with the Corps of Engineers on interpretation of exemptions under Section 404(f), and handling of major permit cases elevated to Headquarters under the memorandum of agreement with the Corps of Engineers or under EPA's authority to prohibit or restrict discharge under 404(c).

EPA developed regulations to facilitate the assumption of Section 404 responsibilities by interested and qualified States. Efforts to promote enhancement of State and local wetlands protection programs also included the development of guidance on how to conduct Advanced Identifications through working with the Corps of Engineers and other Federal, State and local agencies.

The Agency worked with other Federal agencies and the private sector in 1987 to broaden the base of scientific and technical knowledge regarding wetlands. Activities included data collection on profiles of high priority wetlands, development of wetland water quality criteria and studies of cumulative impacts on wetlands. The pilot project on special ecosystems, Bottomland Hardwoods, was largely completed in 1987.

A National Forum on Wetlands was initiated to obtain recommendations on a new national policy to better protect wetlands.

OCEAN DISPOSAL PERMITS

1989 Program Request

The Agency requests a total \$7,582,000 supported by 45.4 total workyears for this program, of which \$2,654,100 will be for the Salaries and Expenses appropriation and \$4,927,900 will be for the Abatement, Control and Compliance appropriation. This represents an increase of \$62,600 in the Salaries and Expenses, an increase of \$153,100 in Abatement, Control and Compliance, and a decrease of 2.0 total workyears. The increase in Salaries and Expenses reflects an increase in personnel costs and the decrease in total workyears reflects a shift in resources due to the suspension of a program to incinerate liquid hazardous wastes at sea. The increase in Abatement, Control and Compliance reflects additional activities related to the Mud Dump Site and plastics studies undertaken in 1988.

The Agency will begin implementation of the revised Ocean Disposal (OD) regulation which is to be promulgated in final form in 1989. This regulation will include provisions for permit application fees, which will be administered beginning in 1989. Support will be provided to the Regions through program guidance and technical protocols prepared by Headquarters.

The Agency's Regional offices will continue implementing the Memoranda of Understanding (MOUs) for dredged material disposal site environmental impact statements (EISs) and site designations, which are being negotiated between the Regions and the District offices of the Corps of Engineers (COE) in 1988. These MOUs are to follow-up on the national EPA-COE MOU negotiated in 1987, and will enhance the coordination and cooperation between EPA Regions, COE District offices, and permit applicants.

The Agency will continue two planning program studies in the New York area that were begun in 1988. The first of these is the New York Bight Restoration Plan required by the Plastic Pollution Research and Control Act of 1987. This plan will include an identification and assessment of pollutant inputs and their impacts, determination of methods and costs necessary to control such inputs, identification of impediments to a clean-up program, and a schedule and other requirements for implementing a clean-up program. The second study is on the designation of an alternative to the New York Mud Dump Site for the disposal of dredged material as required by the Water Resources Development Act of 1986.

In 1989, this program will also continue work on a study with the Department of Commerce on the adverse effects of the improper disposal of plastic articles on the marine environment and on methods to reduce the amount of plastic debris. In addition, the Agency will continue a three-year public outreach and education program, initiated in 1988 in cooperation with the National Oceanic and Atmospheric Administration (NOAA) and the Department of Transportation, on the problems of plastic debris in the marine environment and the need for reduction of such debris.

The Agency will continue to review and issue permits for municipal and industrial ocean disposal. This activity includes evaluating and characterizing waste

samples on a case-by-case basis. In addition, more complex cross-media impact analysis will be required by the revised OD regulations. The Water Resources Development Act of 1986 requires the Agency to review and participate in various water resource projects to be carried out by the COE, and may continue to increase the site designation workload.

The ongoing site management responsibilities will increase as more interim dredged material disposal sites are designated as final sites. There is increasing usage of deep water sites for municipal and industrial disposal operations. There will be a further emphasis on data management as the number of continuing and comprehensive site monitoring programs increases.

1988 Program

The Agency is allocating a total of \$7,366,300 supported by 47.4 total workyears for this program, of which \$2,591,500 is from the Salaries and Expenses appropriation and \$4,774,800 is from the Abatement, Control and Compliance appropriation.

The Agency is completing development of a comprehensive revision to the OD regulation and development of program guidance and technical protocols, as required. The comprehensive revision responds to two court cases, amendments to legislation, and the knowledge and experience gained through program management. As an integral part of the comprehensive revision, the Agency is completing the development of a permit application fee system for ocean disposal. The Agency will continue to implement the research strategy for the program. The Agency's Regional offices are negotiating and beginning implementation of MOUs with the COE District offices, for the preparation of dredged material disposal site EISs and site designations to enhance interagency coordination in this activity.

Work is underway on preparation of a New York Bight Restoration Plan, which is to be completed in three years. Two studies, one relating to the selection of an alternative disposal site to replace the New York Mud Dump and a second to determine the resolution of the problem of plastics disposal in the New York Bight, are also being undertaken. The Mud Dump study and recommendations for an alternate site is to be completed in three years. The New York Bight plastics study -- giving special attention to the effects of plastics debris on beaches, marine life, the environment and coastal waters in the New York Bight -- is scheduled to be completed with a report and recommendations to Congress during 1988. The Agency is also beginning efforts, in conjunction with NOAA, on a study of methods to reduce plastic pollution in the marine environment and a three-year public education program on plastics pollution, as called for in the Plastic Pollution Research and Control Act of 1987.

The transfer of sludge dumping from the 12-mile site in the New York Bight to the deepwater municipal sludge dump site (106-mile) and baseline monitoring of the deepwater site are to be completed in 1988.

1987 Accomplishments

In 1987, the Agency obligated a total of \$9,835,000 supported by 52.8 total workyears for this program, of which \$2,641,200 was from the Salaries and Expenses appropriation and \$7,193,800 was from the Abatement, Control and Compliance appropriation.

The Agency continued development of a comprehensive revision to the OD regulation. Negotiations were completed for a national MOU with the COE, which establishes the basis for cooperative work in the final designation and management of three categories of ocean dredged material disposal sites. The Agency continued to review COE permits for ocean dredged material disposal and issue permits for municipal and industrial ocean disposal. This activity included evaluating and characterizing waste samples on a case-by-case basis.

The Agency continued its efforts to develop a final incineration-at-sea regulation, which included the preparation of appropriate guidance documents and a data management system. The Agency increased its effort to locate suitable sites for ocean incineration activities. Research activities assessed the long term environmental impacts of incineration-at-sea.

ENVIRONMENTAL EMERGENCY RESPONSE AND PREVENTION

1989 Program Request

The Agency requests a total of \$2,721,200 supported by 37.0 total workyears for this program, of which \$1,521,200 will be for the Salaries and Expenses appropriation and \$1,200,000 will be for the Abatement, Control and Compliance appropriation. This reflects a decrease of \$417,200 in Salaries and Expenses, no change in Abatement, Control and Compliance, and a decrease of 10.0 total workyears. The decrease in Salaries and Expenses and total workyears reflects the maturation of the program, streamlined management, and the increased ability of responsible parties and State and local governments to respond effectively to releases.

The Agency will continue to have a 24-hour-a-day capability to respond to notifications of accidental spills or threats of releases. Federal removal will be directed at major incidents where the responsible party is unidentifiable; refuses to, or is incapable of providing timely and effective removal; and where States and local authorities lack the necessary expertise, equipment, or funding to respond effectively.

Federal regulations require implementation of a Spill Prevention, Control, and Countermeasure (SPCC) plan at oil storage facilities and transfer points that could reasonably be expected to spill a significant amount of oil into navigable waters. Staff, with assistance from contractor personnel, will conduct compliance inspections at selected non-transportation-related (NTR) facilities included in the SPCC program in an effort to reduce the frequency and volume of releases that occur.

The Agency also will maintain an Environmental Response Team (ERT) to provide Regional and State personnel with response training and on-site technical and operational assistance at complex emergency incidents. The ERT is staffed by personnel with a high degree of expertise in the areas of spill control and removal, spill sampling and analysis techniques, and damage assessment.

1988 Program

In 1988, the Agency is allocating a total of \$3,138,400 supported by 47.0 total workyears for this program, of which \$1,938,400 is from the Salaries and Expenses appropriation and \$1,200,000 is from the Abatement, Control and Compliance appropriation.

Personnel are available on a 24-hour basis to respond to notifications received by the National Response Center of accidental releases of oil and other petroleum products. The oil component of the ERT provides special engineering and technical advice at any unusually large or complex spill. The Agency is providing on-scene monitoring at removals undertaken by responsible parties or State and local authorities and is directing removal activities at major oil incidents. SPCC inspections are being conducted at NTR facilities.

1987 Accomplishments

In 1987, the Agency obligated \$3,578,300 supported by 50.2 total workyears for this program, of which \$1,936,300 was from the Salaries and Expenses appropriation and \$1,642,000 was from the Abatement, Control and Compliance appropriation. The

Agency received and screened notifications of oil spill releases, directed removals at major oil spills, and responded on-scene at non-Federally funded incidents. In addition, the Agency conducted 1,178 SPCC inspections at NTR facilities.

STANDARDS AND REGULATIONS

1989 Program Request

The Agency requests a total of \$8,289,400 supported by 92.8 total workyears for this program, of which \$4,864,100 will be for the Salaries and Expenses appropriation and \$3,425,300 will be for the Abatement, Control and Compliance appropriation. This represents an increase of \$319,900 and \$1,010,000, respectively, and no change in total workyears. The increase in the Salaries and Expenses appropriation reflects full year funding of additional workyears provided in 1988 to implement the Water Quality Act. The increase in the Abatement, Control and Compliance appropriation addresses increased activities in water quality standards and sludge criteria/regulation development.

In 1989, the Agency will publish proposed and final freshwater and saltwater human health and aquatic toxicity criteria documents for up to 10 toxic and non-conventional pollutants. Up to 30 water quality advisories will be issued. Headquarters will assist the Regions in reviewing State and Indian tribe standards relating to use attainability, site-specific criteria development, antidegradation, and the adoption of criteria for toxic pollutants. Sediment criteria values for nonpolar organic contaminants will be developed for six contaminants.

Regions will work with States and Indians to examine the adequacy of all narrative criteria for toxics and the control methods recommended for point source toxic discharges. In support of water quality-based permits, Regions will work with States to resolve complex use/criteria revision and modification issues and differences in State standards. Antidegradation policies will be reviewed for consistency with regulatory requirements and State implementation methods will be developed.

EPA will use additional resources to determine priority water segments that require site-specific criteria development. Regions will assist States and Indian tribes in collecting data and selecting appropriate methods and procedures for use attainability analyses. Where necessary, Regions will help schedule and conduct use attainability analyses and provide guidance, Agency data, and examples from other States or Regions.

Regions will continue to provide guidance and assistance to States for developing assessments of lake water quality and integrating these assessments into overall State Clean Water Strategies (SCWS) and Section 305(b) Reports. The Agency will submit a report to Congress on State assessments of lake water quality. Regions will manage existing grants to States for lake assessments and restorations.

In 1989, the Agency will use additional resources to promulgate and implement final regulations identifying toxic pollutants in sludge, appropriate management practices, and numerical limitations for 31 pollutants. Five technical support documents will be prepared that address disposal options. Headquarters will prepare guidance documents for each disposal option, and conduct two public hearings and two seminars. A proposed regulation will be published to identify additional toxic pollutants in sludge along with supporting technical documents. Efforts underway to generate incinerator emissions data will continue and sludge risk assessment methodologies and criteria documents for pathogens will be finalized. Regional and State staffs will be trained to interpret and apply the regulations, guidance will be developed on sludge testing and monitoring, and technical requirements will be incorporated into SCWS.

1988 Program

In 1988, the Agency is allocating a total of \$6,959,500 supported by 92.8 total workyears for this program, of which \$4,544,200 is from the Salaries and Expenses appropriation and \$2,415,300 is from the Abatement, Control and Compliance appropriation.

The program continues to emphasize developing and issuing criteria and advisories for toxic and non-conventional pollutants concerning human health and aquatic life, with emphasis on the human health effects of ingesting aquatic life where bioaccumulation of toxics is of concern. Efforts are focused on reviewing State adopted standards for consistency with regulations and guidance and aiding Regions, States, and Indian tribes to interpret and apply regulatory requirements to implement the surface water toxic control program.

Sludge regulations are scheduled to be proposed and will cover five reuse/disposal options: land application, distribution and marketing, landfilling, incineration, and ocean disposal. Five technical support documents are being prepared that address disposal options. A risk assessment methodology for pathogens found in sludge is being drafted and criteria documents are being initiated. The program is conducting an outreach program on the proposed sludge regulations and the proposed technology-based pathogen reduction regulation. Education/implementation efforts with the States/Regions are being initiated.

The Regions are working with the States and Indian tribes to (1) establish technically sound, enforceable water quality standards as the basis for water quality-based treatment controls; (2) conduct use attainability analyses and develop site-specific criteria; (3) identify and adopt criteria for toxic pollutants in State standards; and (4) clarify antidegradation policies and implementation methods.

1987 Accomplishments

In 1987, the Agency obligated \$7,087,700 supported by 85.2 total workyears for this program, of which \$4,187,700 was from the Salaries and Expenses appropriation and \$2,900,000 was from the Abatement, Control and Compliance appropriation.

The program published 20 proposed/final freshwater and marine criteria and 30 advisories. EPA reviewed State adopted standards, completed use attainability analyses, and updated toxic pollutant provisions in State standards and antidegradation policies. Five quantitative chemical-by-chemical risk assessment methodologies for use and disposal of sewage sludge and qualitative risk assessment methodologies for pathogenic organisms in sewage sludge were developed. In addition, the Agency completed revisions of technology-based pathogen reduction processes for incorporation into the proposed sewage sludge rule.

WATER QUALITY
Water Quality Monitoring & Analysis

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988	
----- (DOLLARS IN THOUSANDS) -----							
PROGRAM. -----							
Coastal Environment Management							
Salaries & Expenses	\$1,811.1	\$2,377.1	\$3,332.5	\$3,332.5	\$3,805.1	\$472.6	
Abatement Control and Compliance	\$9,593.4	\$7,636.0	\$7,636.0	\$7,636.0	\$11,378.5	\$3,742.5	
TOTAL	\$11,404.5	\$10,013.1	\$10,968.5	\$10,968.5	\$15,183.6	\$4,215.1	
Water Quality Monitoring & Analysis							
Salaries & Expenses	\$7,579.9	\$7,753.4	\$7,788.6	\$7,788.6	\$8,237.6	\$449.0	
Abatement Control and Compliance	\$4,794.3	\$2,069.9	\$2,399.9	\$2,909.9	\$6,659.9	\$3,750.0	
TOTAL	\$12,374.2	\$9,823.3	\$10,188.5	\$10,698.5	\$14,897.5	\$4,199.0	
TOTAL:							
Salaries & Expenses	\$9,391.0	\$10,130.5	\$11,121.1	\$11,121.1	\$12,042.7	\$921.6	
Abatement Control and Compliance	\$14,387.7	\$9,705.9	\$10,035.9	\$10,545.9	\$18,038.4	\$7,492.5	
Water Quality Monitoring & Analysis	TOTAL	\$23,778.7	\$19,836.4	\$21,157.0	\$21,667.0	\$30,081.1	\$8,414.1
PERMANENT WORKYEARS -----							
Coastal Environment Management	38.9	53.8	78.8	87.2	91.4	4.2	

WQ-49

FY 1989

WATER QUALITY
Water Quality Monitoring & Analysis

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988
<hr/>						
	(DOLLARS IN THOUSANDS)					
Water Quality Monitoring & Analysis	152.6	158.2	167.7	158.8	165.5	6.7
TOTAL PERMANENT WORKYEARS	191.5	212.0	246.5	246.0	256.9	10.9
 TOTAL WORKYEARS -----						
Coastal Environment Management	42.6	53.8	78.8	89.4	91.4	2.0
Water Quality Monitoring & Analysis	164.8	158.2	167.7	165.5	165.5	
TOTAL WORKYEARS	207.4	212.0	246.5	254.9	256.9	2.0

WQ-50

WATER QUALITY

Water Quality Monitoring and Analysis

Budget Request

The Agency requests a total of \$30,081,100 supported by 256.9 total workyears for 1989, an increase of \$8,414,100 and an increase of 2.0 total workyears from 1988. Of the request, \$12,042,700 will be for the Salaries and Expenses appropriation and \$18,038,400 will be for the Abatement, Control and Compliance appropriation, an increase of \$921,600 and \$7,492,500 respectively.

Program Description

The Headquarters and Regional programs under this subactivity include:

Coastal Environment Management -- This program integrates all Clean Water Act (CWA) activities related to near coastal waters, including the National Estuary Program and point source discharges to marine waters, marine discharge waivers, and ocean discharge criteria evaluations. This program provides assistance to support those State and local management activities required to protect or to restore the estuarine zone and continental shelf ecosystems, including water quality, balanced indigenous populations of marine biota, and other beneficial uses from the adverse impacts of toxic, nutrient, and other pollutants. These activities include: 1) implementing the Agency's Near Coastal Waters strategic planning initiative, 2) supporting State and local projects in the National Estuary Program, 3) making determinations on 301(h) marine discharge waiver requests and monitoring waiver recipient discharge impacts and permit compliance, and 4) evaluating all ocean discharges against 403(c) criteria.

Water Quality Monitoring and Analysis -- This program supports biological, chemical, and physical evaluations of water quality to assess water quality status and trends, identify water quality problems and their causes, and determine cost-effective levels of control required to meet local water quality objectives. The program emphasizes effective technical guidance and assistance to the States, which are primarily responsible for collecting, analyzing, and interpreting monitoring data. High priority is placed on new responsibilities imposed by the 1987 Water Quality Act, especially those related to identification, listing and control of waters impaired by toxic pollutants. These activities and requirements are authorized by Sections 104, 106, 303, 304, 305, 307, 319 and 402 of the CWA, as amended.

COASTAL ENVIRONMENT MANAGEMENT1989 Program Request

The Agency requests a total of \$15,183,600 supported by 91.4 total workyears for this program, of which \$3,805,100 will be for the Salaries and Expenses appropriation and \$11,378,500 will be for the Abatement, Control and Compliance appropriation. This represents increases of \$472,600 in Salaries and Expenses and \$3,742,500 in Abatement, Control and Compliance, and an increase of 2.0 total workyears. The increases in Salaries and Expenses and total workyears are to support an expansion of the Gulf of Mexico Initiative. The increase in Abatement, Control, and Compliance is to continue support for the twelve estuary projects in the National Estuary Program by offsetting a reduction of \$3,830,000 from 1988 in funds available from the Section 205(1) construction grants set-aside.

For the Near Coastal Waters (NCWs) initiative, the Agency will continue to conduct a national baseline survey of the conditions of all NCWs to better define

environmental problems and identify waters needing management attention. Resources will be provided to the National Oceanic and Atmospheric Administration (NOAA) and other Federal agencies for the second phase of the baseline survey. Additional pilot projects will be selected to develop innovative management techniques. In 1989, a national network will be initiated to exchange information on NCW problems and management tools, and information on estuary programs, including Chesapeake Bay, and the Great Lakes and NCWs pilot projects. This network will link coastal Regions and States, local governments, other Federal agencies, and public and private groups. The Agency will also continue support for the institutional framework for a near coastal initiative in the Gulf of Mexico, and add support for resource characterization and assessment activities in 1989.

The National Estuary Program, authorized through Section 320 of the CWA, will continue providing management, administrative, and technical support and oversight to twelve estuary projects, including the six existing projects -- San Francisco Bay, Albemarle-Pamlico Sounds, Narragansett Bay, Long Island Sound, Puget Sound, and Buzzards Bay. Six new projects, being designated in 1988, will have Management Conferences convened for their Planning Initiative stage.

The Agency, through the National Pollutant Discharge Elimination System (NPDES) delegated States, will begin to address the larger universe of point source discharges to estuaries to reduce pollutant loadings having impacts on estuaries and near coastal waters. The 301(h) program will be in an operational mode with its focus on the evaluation of monitoring programs to ensure the integrity of the programs and permit reissuance. The Regions will make final waiver determinations for the remaining first round applications, and preliminary work will be completed to reissue permits which expire in 1990, including the new requirement for secondary treatment equivalency determinations. To implement the new requirements of the CWA, the Agency will issue draft 301(h) revised regulations, final guidance on Marine Sanitation Devices, and final technical guidance on secondary equivalency for toxics removal. The Agency will continue to provide technical assistance for implementation of new national guidance on compliance with 403(c) requirements and development of programs to conduct Ocean Discharge Criteria Evaluations (ODCEs).

1988 Program

In 1988, the Agency is allocating a total of \$10,968,500 supported by 89.4 total workyears for this program, of which \$3,332,500 is from the Salaries and Expenses appropriation and \$7,636,000 is from the Abatement, Control and Compliance appropriation. The National Estuary Program activities are also supported by \$7,680,000 provided through the 205(1) construction grant set-aside.

In addition to ongoing estuarine activities, the Agency is beginning an assessment of all NCWs to determine environmental status and water quality trends, and to identify NCWs needing management attention. In a parallel effort, three pilot projects are being conducted in coastal and marine areas to test innovative solutions for identified major environmental problems.

The Agency is also establishing an institutional framework for a near coastal initiative for the Gulf of Mexico to identify and address priority environmental water quality and related problems. The Gulf Initiative will allow the Agency to undertake integrated planning and to target geographically a multitude of Federal and non-federal resources and regulatory powers to address serious pollution problems in the Gulf.

The National Estuary Program will be expanded to twelve projects by the end of 1988. Six of these projects are ongoing -- the Buzzards Bay project is beginning

to implement its Comprehensive Conservation and Management Plan (CCMP); the Narragansett Bay, Long Island Sound, and Puget Sound projects are developing their CCMPs; and the Albemarle-Pamlico Sounds and San Francisco Bay projects are developing their Problem Definition/Characterization work. State/EPA Conference Agreements have been negotiated for each ongoing project. These Agreements document the need to convene a Management Conference and establish a schedule for meeting the purposes and requirements of Section 320.

A number of estuary project proposals are being evaluated, including the six remaining estuaries designated in Section 320 for "priority consideration" -- New York-New Jersey Harbor, Delaware Bay, Delaware Inland Bays, Sarasota Bay, Galveston Bay, and Santa Monica Bay. The six new projects being selected in 1988 to begin "start-up" Planning Initiative activities, will result from decisions to convene Management Conferences based on the Agency's evaluation of Governor's nominations, as provided in Section 320. Resources support the increased emphasis required for conducting pollutant load assessments and completing assessments of status and trends. Systemwide monitoring is being developed in each program to determine the environmental effectiveness of actions taken, which is also a new requirement. Priority action plans that have been approved by Management Conferences will receive implementation assistance using 205(1) set-aside resources.

Program guidance is being developed by the Agency for a number of activities including Governor's Nominations procedures, technology transfer manuals, a Program Primer, a Financial Management Primer, and a Management Handbook. A Memorandum of Understanding (MOU) with NOAA is being developed to implement Section 320(j) regarding estuarine research and management.

The Agency is continuing to provide technical support for the review of the 301(h) marine discharge monitoring programs. Most first round application waiver decisions are to be completed by the end of 1988, and waiver recipients will begin implementing required water quality monitoring programs. The focus of the program is shifting to the management and analysis of monitoring data from waiver recipients, and meeting the statutory requirement for determinations of secondary equivalency for toxics. The Agency is also continuing to support the preparation of 403(c) ODCEs for general permits for offshore oil and gas facilities. ODCEs for other NPDES marine dischargers are being determined by a national assessment and priority ranking based on environmental impacts. Technical assistance will be provided nationally for preparation of selected evaluations.

1987 Accomplishments

In 1987, the Agency obligated a total of \$11,404,500 supported by 42.6 total workyears for this program, of which \$1,811,100 was from the Salaries and Expenses appropriation and \$9,593,400 was from the Abatement, Control and Compliance appropriation. The National Estuary Program was also supported by \$3,870,000 provided through the 205(1) construction grant set-aside.

The Agency's ongoing estuary program was formally authorized under Section 320 of the amended CWA and a number of new program procedures and requirements were established for the program. A priority focus of the program was to ensure that six ongoing estuary projects were brought into compliance with the new legislation while progress on these projects continued under existing work plans. In 1987, the National Estuary Program placed increased emphasis on technology transfer through completing and distributing a program guidance manual and developing a handbook which describes management strategies that have been successfully implemented in selected estuaries. Increased coordination with other Federal agencies included interagency agreements with the Department of the Interior's programs, expansion of NOAA support activities in the two new estuary programs (Albemarle-Pamlico Sounds and San Francisco Bay), and work with the U.S. Geological Survey in estimating pollutant loadings to estuaries and near coastal waters.

Support was provided for work by NOAA on water quality status and trends in Long Island Sound. This provided increased information on toxic contaminant levels in sediments and living resources, links between pollutant loadings and observed effects, and modeling. Support was also provided for efforts in the NCW strategic planning initiative to assess susceptibility of near coastal waters to pollution, including indicators of environmental stress and guidance to EPA Regions and States on assessing problems in these waters.

In 1987, the 301(h) final decision-making on waiver applications was accelerated to assure that the maximum feasible number of waiver decisions were completed in compliance with the National Municipal Policy. Waiver recipients also implemented their monitoring programs and began to submit monitoring data to the Agency for analysis and determination of permit compliance. For 403(c) QDCEs, technical support was provided during 1987 to the Regions for general NPDES permit issuance to offshore oil and gas facilities.

WATER QUALITY MONITORING AND ANALYSIS

1989 Program Request

The Agency requests a total of \$14,897,500 supported by 165.5 total workyears for this program, of which \$8,237,600 will be for the Salaries and Expenses appropriation and \$6,659,900 will be for the Abatement, Control and Compliance appropriation. This represents an increase of \$449,000 and \$3,750,000 respectively, and no change in total workyears. The increase in Salaries and Expenses reflects full year funding of additional workyears provided in 1988 to implement the Water Quality Act (WQA). The increase in Abatement, Control and Compliance is necessary to address increased program activities mandated by the WQA.

In 1989, a number of new activities will be conducted in the water quality monitoring and analysis program. Headquarters will issue guidance for targetting geographic areas for human health and aquatic life hazard identification, and will assist the Regions and States to develop clean water and individual toxic control strategies. Headquarters will assist the Regions to develop lists of waters impaired by toxics and other problems as required by new Section 304(1) of the Clean Water Act (CWA) and to review and approve the exposure and risk assessment (e.g., total maximum daily loads/wasteload allocations (TMDL/WLA)) portions of State toxics control strategies. EPA will also devote additional resources to conduct exposure and risk assessments at 20 geographic locations for toxic pollutants that are the most likely candidates for effluent guidelines, 307(a)(1) listing, or other regulatory action.

Headquarters will issue guidance for the use of exposure and risk assessments to reduce or eliminate water quality impacts and conduct risk management and risk communication programs; continue to implement the nationwide 305(b) Waterbody System and other water quality data management systems for implementation of Regional and State monitoring and toxic control activities in surface waters; complete the National Bioaccumulation Study; and design the 1990 National Fisheries Survey to evaluate changes and trends in water quality since the 1982 National Fisheries Survey. Technical guidance and assistance will be provided to Regions and States for upgrading Section 304(1) lists of waters needing water quality-based controls for toxic pollutants, developing the exposure and risk assessment portions of individual control strategies for such waters, and approving or disapproving State submissions under Section 304(1). Headquarters will conduct workshops and seminars for the Regions and States on risk assessment and management, and provide technical support for conducting ambient and effluent biosurvey/bioassays and interpreting results to assess human health and aquatic life exposure and risk.

The Regions will use the additional resources requested to work with States on clean water and toxic control strategies, develop technical procedures to identify hazards to aquatic life from toxic pollutants, and perform additional exposure and

risk assessments. These assessments will be the basis for reducing risk in State Clean Water Strategies (SCWS), individual toxic control strategies, or other State remedial actions. Regions will work with States to ensure full implementation of the 305(b) Waterbody System and data completeness and consistency as required for SCWS and the 1990 Section 305(b) reporting cycle.

The Regions will also work with the States to implement the technical monitoring procedures and methods developed in response to the Office of Water Surface Water Monitoring Study. Regions will continue to participate in special national studies on human health risk from the consumption of contaminated fish, the 1990 National Fisheries Survey, and the effectiveness of Best Available Technology (BAT) for improving water quality. Work will continue to develop and improve Regional and State surface water monitoring, assessment, and quality assurance procedures. The Regions will assist States to expand their surface water monitoring data base for hazard identification to include newly-generated data on human health and aquatic life risks. With this monitoring data, Regions will work with the States to develop exposure and risk assessments on geographic areas identified as potentially hazardous to human health and aquatic life. Based on these risk assessments, States will develop risk management options to reduce risk and produce environmental benefits for incorporation into State clean water and toxic control strategies.

1988 Program

The Agency is allocating a total of \$10,698,500 supported by 165.5 total workyears for this program, of which \$7,788,600 is from the Salaries and Expenses appropriation and \$2,909,900 is from the Abatement, Control and Compliance appropriation.

In 1988, Headquarters is continuing to provide data and analyses to implement water quality-based controls as Regions and States identify more complex toxic water quality problems and complete exposure and risk assessments (TMDL/WLA) necessary to develop and implement individual control strategies. Headquarters is also conducting hazard identification activities and special studies on (1) bioaccumulative pollutants in fish and shellfish, (2) water quality improvements due to implementation of BAT and water quality-based controls, and (3) the effect of dams on water quality.

In 1988, Regional priorities are to assist States in surface water monitoring to identify hazards to aquatic life from point and nonpoint pollution sources and complete toxic exposure and risk assessments. Exposure and risk assessments (TMDL/WLA) are being used to help develop individual toxic control strategies consistent with SCWS. Regions are responsible for reviewing and approving State lists of waters used for hazard identification and State exposure/risk assessments and control strategies used in risk management. In addition, the Regions conduct workshops and provide technical assistance to increase State capabilities in surface water monitoring, exposure assessment, and risk management. The Regions are completing the investigation of sediment contamination problems to evaluate new pollutants for Section 307(a)(1) listing or other risk management activities under Sections 303, 304, 319, and 402. The Regions are assisting Headquarters to complete special studies on the effects of BAT on water quality, water quality impacts below dams, and water quality impacts from de minimis dischargers.

1987 Accomplishments

In 1987, the Agency obligated a total of \$12,374,200 supported by 164.8 total workyears for this program, of which \$7,579,900 was from the Salaries and Expenses appropriation and \$4,794,300 was from the Abatement, Control and Compliance appropriation.

In 1987, Headquarters provided guidance, data, and analyses to help identify waters and implement water quality-based controls, particularly for toxics as required by Section 304(1). Headquarters designed and began implementing the waterbody system, revised Section 305(b) guidelines that emphasize identification of toxics and nonpoint sources and increase the consistency and usefulness of State reports, conducted sampling for the bioaccumulation study, and completed the Surface Water Monitoring Study. Exposure and risk assessments (TMDL/WLA) were used to develop control strategies for implementing risk management and risk communication activities as part of the SCWS to mitigate risk and produce environmental benefits.

Regions made advance preparations for reviewing and approving State lists of waters used for hazard identification and State exposure/risk assessments and control strategies used in risk management, as required by Section 304(1). Regions conducted workshops and provided technical assistance to States in surface water monitoring, exposure assessments, and risk management.

WATER QUALITY
Municipal Source Control

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988
--	----------------	----------------------------	-----------------	-----------------------------	-----------------	--

(DOLLARS IN THOUSANDS)

PROGRAM

Municipal Waste
Treatment Facility
Construction

Salaries & Expenses	\$20,153.5	\$21,076.9	\$20,204.8	\$20,204.8	\$21,459.3	\$1,254.5
Abatement Control and Compliance	\$32,934.8	\$18,828.4	\$36,828.4	\$36,678.4	\$20,328.4	-\$16,350.0
TOTAL	\$53,088.3	\$39,905.3	\$57,033.2	\$56,883.2	\$41,787.7	-\$15,095.5

Waste Treatment
Operations &
Maintenance

Salaries & Expenses	\$1,321.2	\$1,573.4	\$1,494.8	\$1,494.8	\$1,587.0	\$92.2
TOTAL	\$1,321.2	\$1,573.4	\$1,494.8	\$1,494.8	\$1,587.0	\$92.2

TOTAL:

Salaries & Expenses	\$21,474.7	\$22,650.3	\$21,699.6	\$21,699.6	\$23,046.3	\$1,346.7
Abatement Control and Compliance	\$32,934.8	\$18,828.4	\$36,828.4	\$36,678.4	\$20,328.4	-\$16,350.0

Municipal Source
Control

TOTAL	\$54,409.5	\$41,478.7	\$58,528.0	\$58,378.0	\$43,374.7	-\$15,003.3
-------	------------	------------	------------	------------	------------	-------------

PERMANENT WORKYEARS

Municipal Waste
Treatment Facility
Construction

	426.9	457.7	457.7	416.5	447.6	31.1
--	-------	-------	-------	-------	-------	------

WQ-57

WATER QUALITY
Municipal Source Control

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988

(DOLLARS IN THOUSANDS)						
Waste Treatment Operations & Maintenance	27.4	31.5	31.5	30.8	31.5	.7
TOTAL PERMANENT WORKYEARS	454.3	489.2	489.2	447.3	479.1	31.8
TOTAL WORKYEARS	-----					
Municipal Waste Treatment Facility Construction	469.1	457.7	457.7	447.6	447.6	
Waste Treatment Operations & Maintenance	30.0	31.5	31.5	31.5	31.5	
TOTAL WORKYEARS	499.1	489.2	489.2	479.1	479.1	

85-DM

WATER QUALITY

Municipal Source Control

Budget Request

The Agency requests a total of \$43,374,700 supported by 479.1 total workyears for 1989, a decrease of \$15,003,300 from 1988. Of the request, \$23,046,300 will be for the Salaries and Expenses appropriation and \$20,328,400 will be for the Abatement, Control and Compliance appropriation, an increase of \$1,346,700 and a decrease of \$16,350,000 respectively.

Program Description

The Headquarters and Regional programs under this subactivity include:

Municipal Waste Treatment Facility Construction -- This program includes most of the management activities associated with the construction grants and new State Revolving Fund (SRF) programs in Headquarters and the Regional offices. The program's principal tasks are to assure an effective transition to State SRF programs and local self-sufficiency, manage grants to protect public health priorities, and implement improved publicly owned treatment works (POTWs) technologies. Abatement, Control and Compliance resources primarily support an interagency agreement with the Corps of Engineers (COE) to provide a range of construction management and training activities to assure the technical and fiscal integrity of wastewater treatment construction.

Waste Treatment Operations and Maintenance -- This program focuses primarily on development of State programs to ensure that POTWs are operated and maintained effectively to meet effluent requirements and protect public investments in wastewater treatment facilities.

MUNICIPAL WASTE TREATMENT FACILITY CONSTRUCTION

1989 Program Request

The Agency requests a total of \$41,787,700 supported by 447.6 total workyears for this program, of which \$21,459,300 will be for the Salaries and Expenses appropriation and \$20,328,400 will be for the Abatement, Control and Compliance appropriation. This represents an increase of \$1,254,500 and a decrease of \$16,350,000, respectively, and no change in total workyears. The increase in Salaries and Expenses is due to increased personnel costs. The decrease in Abatement, Control and Compliance reflects the completion of projects conducted in 1988 with additional funds provided for operator training grants, the San Diego wastewater treatment demonstration project, and Boston Harbor cleanup.

1989 will be a critical year for the program with a maximum SRF implementation effort and significant continuing responsibility for the management and oversight of almost 5,000 ongoing construction grants projects. The program's principal task will be to satisfy needs for SRF program development and implementation assistance while assuring effective Federal and State management of the construction grants program.

Since Title VI requires States to commit 1989 funds to SRFs, essentially all States are expected to submit capitalization grant applications. Major efforts will be required to effectively review State applications, negotiate payment schedules and award initial grants. With contractor support, Regions and States will receive SRF training workshops, information and assistance for development, implementation and oversight.

Traditional construction grants management and State oversight responsibilities will remain significant activities during 1989. The Agency will act primarily as overall program manager, while the States and COE will perform most project management activities. EPA will continue to monitor State delegation status and perform the remaining nondelegated project management responsibilities. In addition, implementation of new construction grants provisions, including grants to Indian tribes, will continue. The funds requested for the COE Interagency Agreement (IAG) will purchase 280 workyears of effort to provide construction management assistance to EPA and the States. The 1988 Needs Survey will be issued, and work will be underway on the 1990 Needs Survey.

The program will emphasize a unified approach to POTW toxics management by improving RCRA/Superfund coordination in treating wastes from sites addressed under those programs. POTW technologies and Operation and Maintenance (O&M) approaches will be evaluated and information disseminated to States, POTWs and architect/engineering firms on the effectiveness of innovative/alternative (I/A) as well as conventional treatment technologies. To support local self-sufficiency, especially among small communities that need construction, EPA will widely disseminate information on cost- and environmentally-effective treatment technologies and local financial approaches. Significant ongoing financial support (from Section 104(q)) to the Small Flows Clearinghouse will contribute to a much expanded community outreach assistance program.

The technical reports to Congress on sulfide corrosion and rainfall-induced infiltration of sewers will be completed. The Agency will target funds requested for operator training to selected States that have developed comprehensive programs and are providing the most effective on-site compliance assistance to small communities. Activities associated with management of the operator training program are described in the Operations and Maintenance program element.

1988 Program

In 1988, the Agency is allocating \$56,883,200 supported by 447.6 total workyears for this program, of which \$20,204,800 is from the Salaries and Expenses appropriation and \$36,678,400 is from the Abatement, Control and Compliance appropriation.

EPA is implementing the Title VI requirements for establishment of self-sufficient SRF programs and other new statutory initiatives. Guidance, regulations, and training are being provided to States and Regions for development, implementation and oversight of SRFs. An SRF mission contract is providing training workshops, assistance in developing State capitalization grant agreements and programs, and information on local financing approaches.

As a result of the increase of actual 1987 and 1988 construction grants appropriations above the requested levels, the Agency anticipates over 600 new project starts in addition to roughly 5,500 active projects. This workload continues to require significant EPA oversight and project management resources. The Agency is allocating \$15,500,000 to the COE for 290 workyears of construction management support. New construction grants statutory programs are being implemented, including those for Indian tribes, accelerated disputes resolutions, and "turnkey" projects. The Indian Needs Survey will be submitted to Congress, and the 1988 Needs Surveys is being completed. Headquarters and three Regions will review proposed Advanced Treatment (AT) projects with incremental costs over \$3,000,000; three additional Regions will begin trial delegation of these AT reviews.

Technologies evaluations and information transfer for both I/A and conventional designs are continuing as POTWs become an increasingly important means for toxics control. Results of the I/A technology programs, including successful technologies, field tests of innovative designs, and failed technologies for modification and replacement grants, are being disseminated. The Agency is promoting State programs

of financial and technological information and assistance to small communities and expanding the Small Flows Clearinghouse.

Required technical reports to Congress are underway. Reports scheduled for completion in 1988 include the municipal lagoon study and effectiveness of the I/A program. The Agency is targeting the funds allocated for operator training grants to States to continue providing on-site compliance assistance to small communities and developing integrated compliance programs. Activities to begin the Boston Harbor cleanup and conduct a wastewater treatment demonstration project in San Diego are being initiated as directed by Congress.

1987 Accomplishments

In 1987, the Agency obligated a total of \$53,088,300 supported by 469.1 total workyears for this program, of which \$20,153,500 was from the Salaries and Expenses appropriation and \$32,934,800 was from the Abatement, Control and Compliance appropriation.

EPA provided SRF program development information and implementation assistance to States. The SRF mission contract provided for State/Regional training workshops and program development. Guidance on outreach to small communities was developed and information on cost- and environmentally-effective technologies was disseminated.

The Agency continued to monitor State program management and to perform non-delegated program management activities. The 1986 Needs Survey was transmitted to Congress, and work was initiated on the Indian and 1988 Needs Surveys. Proposed guidance was issued to implement new CWA requirements, and a streamlined disputes/deviations process was developed. The \$16,759,300 obligated for the Corps of Engineers IAG purchased 298 workyears of support to EPA and the States to ensure technical and fiscal integrity of construction projects. Regions IV, V and VI continued to perform delegated AT reviews of projects with incremental costs over \$3,000,000. Pilot delegation was proposed for Regions I, II and III.

An integrated approach to POTW management through coordination with RCRA/Superfund was initiated. As part of the technologies evaluation role, EPA conducted field tests of innovative designs. Revised secondary treatment regulations were proposed, and work was initiated on required technical reports to Congress. Work continued to develop improved sludge management programs. The Agency targeted funds allocated for operator training to States for programs providing on-site compliance assistance to small communities and developing integrated State compliance programs.

WASTE TREATMENT OPERATIONS AND MAINTENANCE

1989 Program Request

The Agency requests a total of \$1,587,000 supported by 31.5 total workyears for this program, all of which will be for the Salaries and Expenses appropriation. This represents an increase of \$92,200 in the Salaries and Expenses appropriation and no change in total workyears. The increase reflects increased personnel costs.

Stable staffing, together with the resources requested to continue operator training grants under the Municipal Waste Treatment Facilities Construction program, reflect the Agency's commitment to the development of effective State operations and maintenance (O&M) and operator training programs, and support to improved minor municipal facilities compliance.

State and EPA Regional staff will continue to provide on-site compliance assistance and operator training at minor POTWs. Operator training grants will be provided to States which have developed comprehensive municipal compliance programs.

EPA will promote improved local user charge and financial management systems, identification of O&M compliance problems through effective diagnostic evaluation and laboratory quality assurance and quality control (QA/QC) programs, improved O&M assistance practices, and achievement of post-1988 municipal compliance priorities. In addition, the program will provide guidance, information and oversight to assist the States and communities to strengthen local O&M programs for improved sludge, toxics, and Innovative/Alternative and conventional technologies management.

EPA will continue to recognize superior facilities through enhancements to its national and Regional Operation and Maintenance Excellence Awards programs. Staff will review project performance certifications submitted by new facilities and monitor needs and corrective actions. Coordination of national water quality and RCRA training programs will be maintained.

1988 Program

In 1988, the Agency is allocating a total of \$1,494,800 supported by 31.5 total workyears for this program, all of which is from the Salaries and Expenses appropriation.

Information and guidance are being issued to encourage State on-site O&M assistance programs and other State O&M assistance and operator training activities funded under §§104(g), 106 and 205(g). States and EPA Regions expect to provide on-site O&M assistance to 565 small communities. EPA is conducting a program to train on-site inspectors to diagnose and assist resolution of small communities' financial and user charge system problems where these contribute to O&M and permit compliance problems. EPA is also studying factors limiting plant performance in small communities and will report its findings to State and local officials and the architect and engineering community. EPA plans to update information on the status of State O&M assistance and training programs, especially legislation and funding for development and implementation of expanded State programs.

EPA is expanding the O&M Excellence Awards program to recognize model non-discharging facilities. EPA plans to make 80 Regional awards and eight national awards. The Agency will produce a video on O&M management factors contributing to outstanding plant performance and issue a brochure of success stories emphasizing innovative approaches to problem solving for State and local officials and plant operators. Staff are reviewing project performance certifications, implementing minor POTW QA/QC programs and assisting the development and implementation of a national RCRA program training initiative.

1987 Accomplishments

In 1987, the Agency obligated \$1,321,200 supported by 30.0 total workyears for this program, all of which was from the Salaries and Expenses appropriation.

EPA and the States provided on-site compliance assistance to 662 small communities and 531 returned to compliance. Over 2,600 plants have been assisted to date, with over 1,500 having returned to compliance and most of the others operating with improved performance. Implementing its successful O&M Excellence Awards program, the Agency made 54 Regional and 6 national awards recognizing outstanding facilities. EPA distributed the results of two studies concerning cost-effective O&M practices and use of contractors for O&M management.

ENVIRONMENTAL PROTECTION AGENCY

1989 Budget Estimate

Table of Contents

	<u>Page</u>
<u>WATER QUALITY</u>	
ENFORCEMENT	
Water Quality Enforcement.....	WQ-64
Water Quality Permit Issuance.....	WQ-69

WATER QUALITY
Water Quality Enforcement

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988	
----- (DOLLARS IN THOUSANDS) -----							
PROGRAM -----							
Water Quality Enforcement							
Salaries & Expenses	\$16,562.6	\$18,273.8	\$17,742.7	\$17,742.7	\$18,835.8	\$1,093.1	
Abatement Control and Compliance	\$5,731.7	\$1,607.0	\$1,607.0	\$1,657.0	\$1,607.0	-\$50.0	
TOTAL	\$22,294.3	\$19,880.8	\$19,349.7	\$19,399.7	\$20,442.8	\$1,043.1	
TOTAL:							
Salaries & Expenses	\$16,562.6	\$18,273.8	\$17,742.7	\$17,742.7	\$18,835.8	\$1,093.1	
Abatement Control and Compliance	\$5,731.7	\$1,607.0	\$1,607.0	\$1,657.0	\$1,607.0	-\$50.0	
Water Quality Enforcement	TOTAL	\$22,294.3	\$19,880.8	\$19,349.7	\$19,399.7	\$20,442.8	\$1,043.1
PERMANENT WORKYEARS -----							
Water Quality Enforcement	374.0	399.8	418.2	385.2	408.3	23.1	
TOTAL PERMANENT WORKYEARS	374.0	399.8	418.2	385.2	408.3	23.1	
TOTAL WORKYEARS -----							
Water Quality Enforcement	403.2	399.8	418.2	408.3	408.3		
TOTAL WORKYEARS	403.2	399.8	418.2	408.3	408.3		

WQ-64

.

.

.

WATER QUALITY

Water Quality Enforcement

Budget Request

The Agency requests a total of \$20,442,800 supported by 408.3 total workyears for 1989, an increase of \$1,043,100 from 1988. Of the request, \$18,835,800 will be for the Salaries and Expenses appropriation and \$1,607,000 will be for the Abatement, Control and Compliance appropriation, an increase of \$1,093,100 for Salaries and Expenses and a decrease of \$50,000 for Abatement, Control and Compliance.

Program Description

Water Quality Enforcement -- The Headquarters and Regional staffs of the National Pollutant Discharge Elimination System (NPDES) enforcement program (including pretreatment) assure the compliance of municipal and industrial permittees with NPDES requirements through a program of monitoring and inspections, administrative enforcement, and technical support of judicial enforcement actions. Major activities include the 1) inspection of permittees, including industrial users of publicly-owned treatment works, 2) review of permittee monitoring data, 3) maintenance of a national data system, 4) identification and evaluation for appropriate follow-up of permittees in noncompliance, and 5) initiation of informal and formal enforcement actions to ensure compliance. Where informal negotiations and administrative enforcement actions do not result in compliance, cases are referred for judicial action and appropriate technical support is provided.

In addition to the NPDES portion of the water quality enforcement program, administrative and technical support is provided for the issuance of administrative enforcement actions for violations of Spill Prevention Control and Countermeasure Plan requirements. Referrals are made to the U.S. Coast Guard for civil penalty assessment for oil and hazardous substance spill violations (Section 311(b)(6)(A)) in waters where EPA has jurisdiction.

WATER QUALITY ENFORCEMENT

1989 Program Request

The Agency requests a total of \$20,442,800 supported by 408.3 total workyears for this program, of which \$18,835,800 will be for the Salaries and Expenses appropriation and \$1,607,000 will be for the Abatement, Control and Compliance appropriation. This represents an increase of \$1,093,100 for the Salaries and Expenses appropriation, a decrease of \$50,000 for the Abatement, Control and Compliance appropriation, and no change in total workyears. The increase in Salaries and Expenses is due to increased personnel costs.

EPA will give priority to the control of toxic discharges through final implementation of the National Municipal Policy (NMP), enforcement of pretreatment requirements -- primarily against publicly-owned treatment works (POTWs), but also against some industrial users -- and compliance assessment and enforcement of Best Available Technology (BAT) and water quality-based permits.

By 1989, approximately 85 percent of the 1,500 major NMP facilities will be in compliance or will be on schedules set through judicial action which extend beyond July 1988. The remaining task in 1989 will be to establish judicially set schedules for facilities which failed to comply with schedules and thus missed the statutory deadline. Many of these actions will be taken by approved States; however, EPA expects to take action against approximately 100 major facilities. EPA will also complete setting schedules for minor permittees with significant impacts on water

quality which need construction to meet the statutory deadline. Administrative penalties and judicial referrals will be used where these permittees fail to comply with schedules. For those POTWs which have completed construction, EPA will monitor compliance with permit limits and use either administrative or judicial enforcement to address noncompliance.

For pretreatment, the enforcement program will continue to emphasize: 1) oversight of delegated State programs; 2) assuring that local control authorities comply with the provisions of their approved programs; and 3) assuring the compliance of industrial users, especially where there is no local control authority or approved State. EPA assesses compliance of local control authorities through the conduct of pretreatment inspections and the review of annual reports submitted by these authorities. Pretreatment inspections will be conducted and annual reports will be reviewed in all of the approved programs in nondelegated States. EPA will apply established criteria to identify POTWs who fail to implement their approved pretreatment programs and will give priority to taking enforcement action, including frequent use of administrative penalties, against this universe. Enforcement action may be taken directly against industrial users (IUs) where the POTW has tried and failed to secure the compliance of the IU, but is otherwise adequately implementing its program.

Where there is no local control authority or approved State, EPA is responsible for assuring that IUs comply with pretreatment standards. The water quality enforcement program will continue to identify these industrial users, monitor compliance through review of semi-annual reports, and conduct inspections where environmental harm is suspected. Direct enforcement action will be taken in serious cases of noncompliance.

In 1989, the improved Permit Compliance System (PCS) will be used for automated review of Discharge Monitoring Reports and the production of Quarterly Noncompliance Reports. Full implementation of this capability will result in compliance assessment being done on a uniform basis throughout the nation. EPA will develop a graphics component and other information management techniques to facilitate the integration and exchange of data with other automated systems.

Regions will maintain effective inspection programs by conducting 1,900 inspections of municipal and industrial permittees, giving emphasis to evaluating compliance with toxics controls. Regions will also emphasize a "timely and appropriate" enforcement response in all cases of significant noncompliance. Continued technical support will be provided for approximately 100 cases initiated in previous years but not yet settled, many of which will be NMP cases. New enforcement efforts against industrial sources will focus on those industries with toxics controls in their permits. Other non-NPDES administrative enforcement activities will include support for oil and hazardous materials spill penalty assessment, and Spill Prevention Control and Countermeasure (SPCC) inspections and enforcement.

1988 Program

In 1988, the Agency is allocating a total of \$19,399,700 supported by 408.3 total workyears for this program, of which \$17,742,700 is from the Salaries and Expenses appropriation and \$1,657,000 is from the Abatement, Control and Compliance appropriation.

The enforcement program is continuing to emphasize maintenance of high levels of compliance by all permittees, with special attention to municipal permittees; an effective compliance monitoring and inspection program to verify levels of compliance; initiation and maintenance of a pretreatment compliance monitoring and enforcement program; and the maintenance of PCS to provide for report preparation and tracking.

Implementation of the NMP remains the highest priority. This policy requires that all municipalities that are in noncompliance because of needed construction be put on enforceable schedules that will assure compliance by the July 1988 statutory deadline. In 1988, the Agency is acting primarily in nondelegated States to enforce schedules through the issuance of an administrative penalty order or the initiation of a referral for civil judicial action. Schedules are being established for most of the minor permittees with water quality impacts. All major municipal permittees in nondelegated States that need corrective action because of operation and maintenance problems are also being addressed. In those cases where NPDES States do not establish enforceable schedules for municipalities needing them, EPA is initiating action to establish or enforce these schedules.

The major direction of the pretreatment program is to assure compliance at the 1,500 POTWs with approved pretreatment programs by taking enforcement action where appropriate. The Agency takes judicial action against noncomplying POTWs and also initiates judicial actions against a number of industries which have failed to install necessary treatment to meet categorical standards. The pretreatment compliance monitoring program includes the inspection of all POTWs and a significant number of IUs, in addition to the review of all POTW annual reports.

In conjunction with Headquarters, the Regions have improved and expanded their compliance enforcement data management capabilities through the use of the PCS. In 1988 all EPA Regions are beginning to produce Quarterly Noncompliance Reports on an automated basis and will begin entry of data to the Pretreatment Permits and Enforcement Tracking System. EPA is also testing the feasibility of data entry through use of an optical character reader.

Regions emphasize using the new administrative penalty authority in appropriate cases. This authority is being used in all categories of noncomplying permittees and in conjunction with orders requiring corrective action. Regions are continuing to respond to all cases of significant noncompliance with enforcement action, where necessary, and are addressing nearly all cases of industrial noncompliance. Inspections are being used to verify the compliance status of municipal and industrial permittees, with all majors inspected annually. Non-NPDES administrative enforcement activities include Section 404 inspections and support for oil and hazardous materials spill penalty assessment and SPCC inspections and enforcement.

1987 Accomplishments

In 1987 the Agency obligated a total of \$22,294,300 supported by 408.3 total workyears for this program, of which \$16,562,600 was from the Salaries and Expenses appropriation and \$5,731,700 was from the Abatement, Control and Compliance appropriation.

During 1987, implementation of the National Municipal Policy was the highest priority. All but 23 of the major municipalities needing construction to comply with the Clean Water Act were placed on enforceable construction schedules. Enforceable construction schedules have also been established for approximately 80 percent of the minor municipal facilities needing schedules. Judicial action was initiated against 26 POTWs as a means of establishing these schedules. Approximately 100 major NMP facilities came into compliance in 1987, and about one-third of the NMP universe is now in full compliance.

Pretreatment activity focused on monitoring the compliance of approved programs and bringing enforcement actions against noncomplying POTWs and IUs. EPA conducted a total of 598 pretreatment inspections and referred 16 judicial actions to the Department of Justice. Additionally, EPA issued 126 administrative orders and 2 administrative penalty orders for violation of pretreatment requirements. A pretreatment data tracking system was developed as a component of PCS.

Contract resources were used to support and maintain the PCS national data system which tracks the performance of all major permittees, and to provide technical support for judicial enforcement actions and conduct inspections of municipal and industrial permittees. In addition, contract funds were used to train Regional and State personnel in monitoring and inspection techniques, train POTWs with pretreatment programs to enforce pretreatment requirements, and develop software to assist POTWs in assessing IU performance.

In 1987, 16 percent of major municipal permittees on final effluent limits were in significant noncompliance and 9 percent of non-municipal permittees were in significant noncompliance. These levels were very close to the levels of significant noncompliance in the preceding year.

The Regions conducted approximately 2,577 compliance inspections and issued 1,002 administrative orders. EPA also issued 20 administrative penalty orders, although the new authority was not implemented until late in the year. EPA Regions also reviewed self-monitoring reports for all major dischargers from non-NPDES States. Regional support was provided for the development of 92 civil judicial actions which were referred to Headquarters for review.

Enforcement of Section 311 oil and hazardous substance spill requirements included 81 referrals to the U.S Coast Guard for assessment of civil penalties and 50 administrative actions for violations of SPCC plan requirements. Enforcement of Section 404 provisions focused on identifying illegal discharges of dredge and fill material and administrative actions were taken for 22 Section 404 violations.

WATER QUALITY
Water Quality Permit Issuance

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988
--	----------------	----------------------------	-----------------	-----------------------------	-----------------	--

(DOLLARS IN THOUSANDS)

PROGRAM

Permit Issuance

Salaries & Expenses	\$10,987.6	\$13,285.4	\$13,163.3	\$13,163.3	\$13,976.4	\$813.1
Abatement Control and Compliance	\$4,358.7	\$3,228.7	\$4,828.7	\$5,328.7	\$8,028.7	\$2,700.0
TOTAL	\$15,346.3	\$16,514.1	\$17,992.0	\$18,492.0	\$22,005.1	\$3,513.1

TOTAL:

Salaries & Expenses	\$10,987.6	\$13,285.4	\$13,163.3	\$13,163.3	\$13,976.4	\$813.1
Abatement Control and Compliance	\$4,358.7	\$3,228.7	\$4,828.7	\$5,328.7	\$8,028.7	\$2,700.0

Water Quality Permit Issuance	TOTAL	\$15,346.3	\$16,514.1	\$17,992.0	\$18,492.0	\$22,005.1	\$3,513.1
-------------------------------	-------	------------	------------	------------	------------	------------	-----------

PERMANENT WORKYEARS

Permit Issuance	256.5	295.7	349.6	326.8	343.2	16.4
TOTAL PERMANENT WORKYEARS	256.5	295.7	349.6	326.8	343.2	16.4

TOTAL WORKYEARS

Permit Issuance	273.8	295.7	349.6	343.2	343.2	
TOTAL WORKYEARS	273.8	295.7	349.6	343.2	343.2	

WATER QUALITY

Water Quality Permit Issuance

Budget Request

The Agency requests a total of \$22,005,100 supported by 343.2 total workyears for 1989, an increase of \$3,513,100 from 1988. Of the request, \$13,976,400 will be for the Salaries and Expenses appropriation and \$8,028,700 will be for the Abatement, Control and Compliance appropriation, an increase of \$813,100 and \$2,700,000, respectively.

Program Description

Permit Issuance -- The Clean Water Act authorizes a National Pollutant Discharge Elimination System (NPDES) permit program to reduce or eliminate point source pollution. The discharge of pollutants into waters of the United States by point sources is prohibited unless in compliance with an NPDES permit. At present, 38 States and one Territory have approved NPDES programs. EPA issues NPDES permits in the remaining jurisdictions.

The NPDES program is currently focused on the control of discharges of toxic pollutants and hazardous wastes through water quality-based and technology-based limits in NPDES permits, implementation of the pretreatment program for indirect discharges to publicly owned treatment works (POTWs), and approval and oversight of local and State pretreatment programs. A total of 25 States are approved to implement pretreatment programs.

The NPDES program also allows permittees and interested parties to request evidentiary hearings on permits and variances from certain effluent limitations.

PERMIT ISSUANCE

1989 Program Request

The Agency requests a total of \$22,005,100 supported by 343.2 total workyears for this program, of which \$13,976,400 will be for the Salaries and Expenses appropriation and \$8,028,700 will be for the Abatement, Control and Compliance appropriation. This represents increases of \$813,100 in Salaries and Expenses and \$2,700,000 in Abatement, Control and Compliance, and no change in total workyears. The increase in Salaries and Expenses reflects full year funding of the workyears provided in 1988 for implementation of the Water Quality Act. The increase in Abatement, Control and Compliance will be used to revise NPDES and stormwater regulations, complete stormwater studies mandated by Congress, review State sludge programs, develop toxicity limits and individual control strategies, and implement pretreatment controls.

During 1989, emphasis will be placed on issuing or modifying permits to facilities where surface water toxic assessments have been completed and toxic/toxicity controls determined; issuing permits incorporating toxic/toxicity limits or biomonitoring where surface water toxic assessments have not been completed but where toxics problems have been identified; and issuing Best Available Technology (BAT) permits to organic chemical facilities. During 1989, EPA will issue 235 major industrial permits and 175 major municipal permits. EPA will begin reviewing stormwater applications from industries and large cities.

EPA will continue to review variance requests for fundamentally different factors (FDF) from organic chemical and pesticide plants for direct/indirect

dischargers. EPA will collect and process fees for variance applications and continue to resolve evidentiary hearing requests for more complex toxic/toxicity pollutant limitations.

EPA will continue to review full and partial NPDES programs (including those of Indian tribes) and modifications to NPDES programs. In addition, the Agency will assist in development of requests for sludge programs and review sludge program requests. EPA will assist the NPDES States in issuing and modifying permits to include toxic/toxicity controls and to impose biomonitoring requirements. EPA will issue NPDES permits which are required to fulfill individual control strategy requirements under §304(l) where EPA has disapproved a NPDES State individual control strategy or where a NPDES State fails to submit an individual control strategy.

In 1989, EPA will modify local POTW pretreatment programs to incorporate new reporting requirements for hazardous waste dischargers and spill prevention and other measures required in response to the Domestic Sewage Study (DSS). EPA will assist POTWs to develop/modify categorical standards and local limits to control toxics and hazardous pollutants in accordance with revised pretreatment regulations and as required by individual control strategies and changes in sludge disposal standards. EPA will continue to conduct audits to determine if POTWs properly evaluate and apply categorical standards, local limits and issue control mechanisms and followup as necessary. Guidance and contract assistance will be provided to POTWs to implement DSS regulations; revise/develop local limits to include additional restrictive toxic pollutant limits, including organics; conduct toxicity reduction evaluations and assess toxicity related spills; apply organic chemical categorical pretreatment standards; and conduct audits of approved POTW pretreatment programs. Workshops and seminars will be provided on toxicity testing, biomonitoring and State/POTW pretreatment implementation.

The Agency will promulgate revisions to the NPDES regulation to reflect statutory changes contained in the Water Quality Act of 1987 and Headquarters will promulgate changes to NPDES and General Pretreatment Regulations based on recommendations of the DSS. State program and permitting regulations for sludge will also be promulgated, and EPA will complete a Congressionally required study to establish procedures and methods to control stormwater discharges to mitigate their impacts on water quality.

1988 Program

In 1988, the Agency is allocating a total of \$18,492,000 supported by 343.2 total workyears for this program, of which \$13,163,300 is from the Salaries and Expenses appropriation and \$5,328,700 is from the Abatement, Control and Compliance appropriation.

During 1988, the Agency's focus is on establishing individual control strategies where necessary for priority pollutants and whole effluent toxicity, in the form of "third round" NPDES permits based on water quality standards. Permits are being modified to incorporate BAT guidelines, Best Management Practices (BMP), conditions based on biomonitoring and water quality studies, new technology-based requirements and pretreatment implementation requirements. During 1988, EPA expects to issue 329 major industrial and municipal permits. EPA is continuing to address evidentiary hearing and variance requests.

During 1988, five States are expected to receive approval for pretreatment authority, one State is expected to receive federal facility permitting authority, and four States are expected to receive general permitting authority. This will bring the totals to 30 pretreatment programs, 31 federal facility permitting programs, and 16 general permitting programs. EPA is reviewing existing sludge management programs in the States and assisting the States to develop/modify their sludge programs. EPA is conducting comprehensive assessments of State toxic control

programs and working with NPDES States to develop detailed action plans to strengthen their toxic control programs. EPA continues to assist NPDES States to issue/modify permits to include new limitations for toxic pollutants and to develop individual control strategies. EPA is providing guidance and contract assistance on development of individual control strategies and evaluating State toxic control plans.

EPA is continuing to modify POTW local pretreatment programs to address additional toxic and hazardous pollutants and any episodes of pass through or interference. Guidance, contract assistance and workshops/seminars are being provided for pretreatment implementation, and EPA continues to audit POTW pretreatment implementation.

1987 Accomplishments

In 1987, the Agency obligated \$15,346,300 supported by 273.8 total workyears for this program, of which \$10,987,600 was from the Salaries and Expenses appropriation and \$4,358,700 was from the Abatement, Control, and Compliance appropriation.

In 1987, contract resources were used to develop individual control strategies, evaluate State toxic control assessments, develop local limits and water quality-based limits in POTW permits, conduct audits of approved local and NPDES State pretreatment programs, and develop NPDES programs and program modifications, especially sludge programs. Workshops and seminars were held on pretreatment implementation.

EPA issued a total of 434 major permits, of which 276 were industrial and 158 were municipal. Additionally, a total of 1,612 permits were issued for minor facilities.

In 1987 Utah received NPDES program approval, increasing the total number of NPDES States to 39.

During 1987, EPA performed 206 local pretreatment program audits and another 167 were performed by Pretreatment States.

DRINKING WATER

ENVIRONMENTAL PROTECTION AGENCY

1989 Budget Estimate

Table of Contents

	<u>Page</u>
<u>DRINKING WATER</u>	DW-1
RESEARCH & DEVELOPMENT	
Drinking Water Research.....	DW-9
Scientific Assessment.....	DW-14
Monitoring Systems and Quality Assurance.....	DW-15
Health Effects.....	DW-16
Environmental Engineering and Technology.....	DW-17
Environmental Processes and Effects.....	DW-18
ABATEMENT & CONTROL	
Drinking Water Criteria, Standards & Guidelines.....	DW-20
Criteria, Standards & Guidelines.....	DW-21
Drinking Water State Program Resource Assistance.....	DW-24
Public Water Systems Supervision Program Grants.....	DW-25
Underground Injection Control Program Grants.....	DW-27
Special Studies & Demonstrations.....	DW-28
Drinking Water Management.....	DW-30
Public Water Systems Supervision Program Assistance.....	DW-32
Underground Injection Control Program.....	DW-34
Ground-Water Protection.....	DW-37
ENFORCEMENT	
Drinking Water Enforcement.....	DW-42

DRINKING WATER

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988

(DOLLARS IN THOUSANDS)						

APPROPRIATION						

Salaries & Expenses	\$32,052.2	\$38,220.9	\$35,295.1	\$35,295.1	\$37,084.5	\$1,789.4
Abatement Control and Compliance	\$57,601.7	\$62,863.0	\$60,213.0	\$60,063.0	\$54,863.0	-\$5,200.0
Research & Development	\$12,877.6	\$13,766.2	\$12,595.2	\$12,225.2	\$11,533.0	-\$692.2
TOTAL, Drinking Water	\$102,531.5	\$114,850.1	\$108,103.3	\$107,583.3	\$103,480.5	-\$4,102.8
PERMANENT WORKYEARS	679.2	696.6	699.7	695.3	700.9	5.6
TOTAL WORKYEARS	691.6	752.7	746.1	746.1	746.1	
OUTLAYS	\$97,284.1	\$114,490.2	\$95,690.0	\$95,229.7	\$98,666.4	\$3,436.7
AUTHORIZATION LEVELS	The Safe Drinking Water Act of 1986 reauthorized this program at a level of \$92,500,000 for 1988 and \$99,020,000 for 1989.					

DRINKING WATER

OVERVIEW AND STRATEGY

The Safe Drinking Water Act (SDWA) Amendments of 1986 reaffirm the national goal to assure that public water supplies are free of contamination that may pose a human health risk and to protect and prevent the endangerment of ground-water resources which serve as drinking water supplies. EPA's objectives are to reduce human health risk by setting and implementing drinking water standards; build a stronger State/public water system capacity to implement and comply with regulatory requirements; and prevent contamination of particularly valuable/vulnerable ground water through wellhead protection activities, a classification system, and a comprehensive ground-water protection strategy.

The Amendments mandate revisions of existing contaminant standards, new standards for a host of chemical contaminants, and new regulatory provisions, such as the ban on lead-content plumbing materials. This mandate requires substantial further development of the Public Water Systems (PWS) regulatory framework and reemphasizes EPA's responsibility for setting drinking water contaminant levels and ensuring enforcement. The Amendments also establish a new initiative which focuses specifically on ground-water resources. EPA's principal role in the Wellhead Protection (WHP) program is to provide technical assistance to States in their activities to protect wells and the surrounding wellhead areas of public water supply wells from anthropogenic contaminants which may have an adverse effect on public health. In addition, the Underground Injection Control (UIC) program protects underground drinking water sources from contamination through EPA/State regulation of underground injection practices.

The 1989 request focuses on obtaining the maximum health risk reduction of drinking water/ground-water resources by 1) continuing to set standards for drinking water contaminants, to establish a comprehensive risk reduction framework; 2) building State/PWS capacity to implement and comply with new regulatory requirements; 3) improving compliance in both the PWS and UIC programs with existing requirements; 4) enhancing States' capabilities both to respond to and prevent ground-water contamination through wellhead protection activities and support of State ground-water protection strategies; and 5) continuing research and development in support of establishing drinking water standards.

Drinking Water Standard-Setting

EPA's responsibility under the SDWA is to erect a comprehensive framework of National Primary Drinking Water Regulations (NPDWRs) by regulating all contaminants "known or anticipated to occur" in public water supplies that may have any adverse human health effects. The ensuing implementation of primary standards provides a reasonable certainty that water delivered to the public is free of contaminants at levels that may harm people's health.

The SDWA Amendments set a 1989 deadline for establishing standards for at least 83 specific contaminants, as well as mandates for specific treatment technology requirements (surface-water filtration). The development of NPDWRs involves two distinct yet simultaneous steps: (1) for each contaminant determine a Maximum Contaminant Level Goal (MCLG), which represents a "level at which no known or anticipated adverse effects on the health of persons occur and which allows an adequate margin of safety" (the latter to account for uncertainties in making this determination) and (2) for those contaminants measurable by analytic practical and affordable methods available to systems, an enforceable MCL is set as close to the MCLG as is feasible, taking into account the performance and cost of "best available" treatment/control technology. Otherwise, a treatment technology NPDWR is prescribed, specifying treatment requirements for systems to prevent the risk to health to the extent feasible.

In 1989 this program will promulgate standards for 34 toxic chemicals and radionuclides, the last of the 83 specified. Prominent among these will be a new standard for radon, judged to be a particularly high-risk waterborne contaminant. The next focus will be those contaminants listed as regulatory candidates in 1988, for which at least 25 new standards are required by January 1991 by the SDWA Amendments. Among these are disinfectants and their reaction by-products, widely found among systems.

These standards, along with unenforceable "health advisories" (summaries of toxicological data that convey the levels of significant health risk), have a function beyond the regulation of PWSs; they also serve as the authoritative benchmarks for the protection of human health from pollution of drinking water sources, particularly ground water. Programs dedicated to the protection of human health and the environment (especially hazardous waste management and Superfund remedial programs) rely on drinking water standards to direct their abatement and control activities.

PWS Program Implementation

By 1989, NPDWRs will be final for 83 chemical, radionuclide and microbiological contaminants and for surface-source treatment; also in place will be monitoring requirements for a host of additional unregulated chemicals. By 1989 large and very large systems will be monitoring for the majority of them. Among the contaminants being addressed are a subset that pose widespread risks to public health by reason of their potency and their potential occurrence throughout water supplies. These are pathogenic microorganisms, lead, radon and disinfectant chemicals and their reaction by-products, representing the highest national risk-reduction priorities. These are nationally important not only for the risks they presently pose to consumers, but also because these are the problems most systems will face in the foreseeable future. In addition, the first new MCLs for 8 volatile organic chemicals and revised public notice requirements for PWSs become effective in 1989, the first of a succession of new rules.

EPA and the States must adopt the necessary changes and additions to regulatory authorities to ensure that State programs are compatible with the new "primacy" responsibilities mandated by the SDWA Amendments. In particular, States with primary enforcement responsibility (primacy) must make provision to implement treatment requirements to some 11,000 systems using surface water sources pursuant to the surface water treatment NPDWR. Another sweeping change involves the laboratory certification program, the principal quality control for drinking water compliance measurements, where systems' monitoring requirements mushroom with the fourfold increase in contaminant standards.

EPA's aim is to implement the revisions of regulatory requirements minimizing increased system non-compliance caused by additional standards. Our strategy involves enlisting the help of agencies and constituencies beyond the "regulated community" (i.e., EPA, States and the systems) in mobilizing understanding of and the need for enhanced protection of drinking water. To reduce the need for a massive Federal/State enforcement presence, this strategy aims to "leverage" the general willingness and capabilities of the systems to do what is necessary to provide dependably safe water supplies. Widening the involvement of outside groups will enhance the flow of information, increasing the awareness of the systems about the new responsibilities and of consumers about health risks and the need to invest more to protect their drinking water.

Another new feature is the eligibility of Indian tribal authorities to assume responsibility for PWS supervision, similar to States. Regulations recently promulgated define the responsibilities for implementation and enforcement that Indian tribes may assume, along with legal and programmatic prerequisites EPA will require in order to delegate these responsibilities. In 1989, EPA will be involved in a detailed examination of the programmatic capabilities of Indian tribes and in helping tribes to develop primacy programs.

Underground Injection Control

EPA and 41 State primacy programs will continue to maintain regulatory coverage of 280,000 injection wells. Both permitting and compliance with permit and statutory requirements will continue to be a high program priority. The State/EPA permitting effort will provide little payoff if the regulators cannot demonstrate the ability to enforce permit requirements. Where a State does not or cannot respond to violations in a timely and appropriate manner, EPA will take enforcement action. Failure to: 1) apply for a permit, 2) test for well mechanical integrity, 3) comply with operation and construction requirements, or 4) provide monitoring reports will require State or EPA action to obtain compliance. A credible compliance/enforcement presence by both primacy States and EPA is necessary to ensure that the owners/operators of injection wells adhere to the UIC regulatory requirements.

EPA and the States will implement the required new monitoring requirements for waste disposal (Class I) injection wells and provide technical assistance and guidance for the primacy States. The new monitoring requirements will help ensure the earliest possible detection of fluid migration from the injection zone that may be harmful to health and the environment. A key objective in 1989 will be to address "high risk" practices within the category of "miscellaneous" Class V injection wells. Although they are not specifically regulated now, EPA will encourage States to use existing permit, closure and enforcement authorities to address high-risk wells. Where the Agency has UIC primacy, it will implement this process.

Ground-Water Protection

In 1989, EPA will enhance its risk reduction and prevention efforts by developing and issuing technical assistance documents which will provide state-of-the-art knowledge to States on wellhead protection issues. One of the major elements of wellhead protection activities is the determination of zones within which contaminant source assessment and management will be addressed. The delineation of these zones, denoted as wellhead protection areas (WHPAs), involves highly technical analyses of the hydrogeologic and other environmental conditions surrounding a water well or wellfield. States/Indian tribes will rely on EPA to provide expert advice and consultation on the methodologies and approaches to the hydrogeologic and other assessments related to these areas. In addition, EPA will act as a liaison with all Federal agencies which must, by statute, comply with the State laws and regulations developed under the aegis of wellhead protection.

While wellhead protection activities focus specifically on ground-water resources that serve as drinking water supplies, EPA also supports State efforts in protecting all its ground-water resources through the Ground-Water Protection Strategy. In 1989, EPA will encourage those States that have not yet done so, to direct attention to the totality of their ground-water resources and, accordingly, to design a comprehensive strategy which clearly determines the protection measures required for their ground-water resources.

The classification guidelines established and issued by EPA provide a definition of the use, value, and vulnerability of ground-water resources for EPA programs. The Agency will assist the States in developing and/or implementing systems for classifying ground-water resources. In addition, EPA will continue its role in conducting research and development activities, collecting, analyzing, and developing mechanisms to share data on ground-water resources with the States and with other Federal programs. EPA will also continue to review and approve/disapprove petitions for designation of sole source aquifers.

Research and Development

The research program will continue to support activities to protect drinking water supplies, including ground-water resources, particularly in the development of drinking water health-based maximum contaminant level goals and enforceable

maximum contaminant levels. Toxicological data will be developed for those compounds of the National Primary Drinking Water Regulations Contaminant Selection Priority List for which data gaps have been identified.

In the area of disinfection, research will be conducted to isolate, identify, synthesize and characterize the toxicity of the major disinfectants and disinfectant by-products with emphasis placed on compounds demonstrating the greatest biological activity. In addition, the research program will continue to provide human health assessments to support the need for quantitative risk assessments from exposure to drinking water treatment technology and analytical methods in support of standard setting. Research to determine the cost-effectiveness of in-situ aquifer restoration techniques will continue, leading to clean-up where previously the cost was prohibitive. In 1989, promising laboratory techniques will be evaluated on actual contamination incidents.

The research program will also direct efforts focused solely on ground-water resources. Both the development of methods and the conduct of studies on subsurface transport and fate processes will provide appropriate assessments of human exposure risks from ground-water contamination.

DRINKING WATER

<u>PROGRAM ACTIVITIES</u>	<u>Actual 1987</u>	<u>Budget Estimate 1988</u>	<u>Current Estimate 1988</u>	<u>Request 1989</u>	<u>Increase (+) Decrease (-) 1989 vs. 1988</u>
<u>Incremental Outputs</u>					
UIC Permit Determinations:					
- for existing and new facilities, by primacy States.....	8,014	5,570	5,553	5,553	0
- for existing and new facilities, by EPA.....	582	505	490	490	0
UIC MIT Testing.....	25,736	23,642	22,262	22,262	0
UIC File Review.....	24,896	24,569	23,949	23,949	0
Enforcement Actions - PWS:					
Inspections.....	n/a	n/a	n/a	n/a	0
Notices of Violations....	105	685	391	356	-35
Administrative Orders.....	184	238	234	284	+50
Civil Litigation (new).....	1	7	1	1	0
Criminal Litigation.....	0	0	0	0	0
Enforcement Actions - UIC:					
Inspections.....	74,592	51,066	58,609	58,609	0
Notices of Violations.....	n/a	n/a	n/a	n/a	0
Administrative Orders.....	107	95	106	125	+19
Civil Litigation (new).....	1	4	1	1	0
Criminal Litigation.....	0	0	0	0	0
<u>Cumulative Outputs:</u>					
PWS Primacy States.....	54	54	54	54	0
UIC Primacy States (full and partial programs).....	33/6	34/7	35/6	35/6	0
Designated Sole Source Aquifer.....	31	65	50	65	+15

ENVIRONMENTAL PROTECTION AGENCY

1989 Budget Estimate

Table of Contents

	<u>Page</u>
<u>DRINKING WATER</u>	
RESEARCH & DEVELOPMENT	
Drinking Water Research.....	DW-9
Scientific Assessment.....	DW-14
Monitoring Systems and Quality Assurance.....	DW-15
Health Effects.....	DW-16
Environmental Engineering and Technology.....	DW-17
Environmental Processes and Effects.....	DW-18

DRINKING WATER
Drinking Water Research

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988
----- (DOLLARS IN THOUSANDS) -----						
PROGRAM -----						
Scientific Assessment - Drinking Water						
Salaries & Expenses	\$349.8	\$443.0	\$422.8	\$422.8	\$432.1	\$9.3
Research & Development	\$294.8	\$246.8	\$246.8	\$296.8	\$296.8	
TOTAL	\$644.6	\$689.8	\$669.6	\$719.6	\$728.9	\$9.3
Monitoring Systems & Quality Assurance - Drinking Water						
Salaries & Expenses	\$1,590.9	\$1,755.6	\$1,642.3	\$1,642.3	\$1,678.3	\$36.0
Research & Development	\$1,574.5	\$1,436.0	\$1,436.0	\$1,569.5	\$1,277.3	-\$292.2
TOTAL	\$3,165.4	\$3,191.6	\$3,078.3	\$3,211.8	\$2,955.6	-\$256.2
Health Effects - Drinking Water						
Salaries & Expenses	\$3,295.5	\$3,665.6	\$3,428.9	\$3,428.9	\$3,504.0	\$75.1
Research & Development	\$5,326.8	\$6,301.5	\$5,450.5	\$4,970.9	\$4,570.9	-\$400.0
TOTAL	\$8,622.3	\$9,967.1	\$8,879.4	\$8,399.8	\$8,074.9	-\$324.9
Environmental Engineering & Technology - Drinking Water						
Salaries & Expenses	\$3,179.1	\$3,389.9	\$3,146.8	\$3,146.8	\$3,215.7	\$68.9
Research & Development	\$2,296.1	\$1,958.0	\$1,638.0	\$1,963.9	\$1,963.9	
TOTAL	\$5,475.2	\$5,347.9	\$4,784.8	\$5,110.7	\$5,179.6	\$68.9
Environmental Processes & Effects - Drinking Water						
Salaries & Expenses	\$1,481.4	\$1,583.7	\$1,599.7	\$1,599.7	\$1,634.7	\$35.0
Research & Development	\$3,385.4	\$3,823.9	\$3,823.9	\$3,424.1	\$3,424.1	
TOTAL	\$4,866.8	\$5,407.6	\$5,423.6	\$5,023.8	\$5,058.8	\$35.0

DRINKING WATER
Drinking Water Research

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988
----- (DOLLARS IN THOUSANDS) -----						
TOTAL:						
Salaries & Expenses	\$9,896.7	\$10,837.8	\$10,240.5	\$10,240.5	\$10,464.8	\$224.3
Research & Development	\$12,877.6	\$13,766.2	\$12,595.2	\$12,225.2	\$11,533.0	-\$692.2
Drinking Water Research TOTAL	\$22,774.3	\$24,604.0	\$22,835.7	\$22,465.7	\$21,997.8	-\$467.9
PERMANENT WORKYEARS -----						
Scientific Assessment - Drinking Water	5.7	9.0	9.0	9.0	9.0	
Monitoring Systems & Quality Assurance - Drinking Water	27.8	29.5	29.5	28.7	28.7	
Health Effects - Drinking Water	59.3	68.5	68.5	66.4	66.4	
Environmental Engineering & Technology - Drinking Water	56.1	60.9	60.9	59.3	59.3	
Environmental Processes & Effects - Drinking Water	25.2	26.8	28.8	29.1	29.1	
TOTAL PERMANENT WORKYEARS	174.1	194.7	196.7	192.5	192.5	

DRINKING WATER
Drinking Water Research

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988
----- (DOLLARS IN THOUSANDS) -----						
TOTAL WORKYEARS -----						
Scientific Assessment - Drinking Water	8.7	9.0	9.0	9.0	9.0	
Monitoring Systems & Quality Assurance - Drinking Water	27.9	29.5	29.5	28.7	28.7	
Health Effects - Drinking Water	67.3	68.5	68.5	66.4	66.4	
Environmental Engineering & Technology - Drinking Water	58.7	60.9	60.9	59.3	59.3	
Environmental Processes & Effects - Drinking Water	28.0	26.8	28.8	29.1	29.1	
TOTAL WORKYEARS	190.6	194.7	196.7	192.5	192.5	

DRINKING WATER

Drinking Water Research

Principal Outputs by Objective

Objective 1: Develop Drinking Water Standards Based on Health Effects Through Risk Assessment Studies

- 1989: o Development of health advisories and criteria documents (Scientific Assessment)
o Report on the carcinogenic and reproductive effects of disinfectants/by-products (Health)
o Report on cancer risks associated with the chlorination of drinking water (Health)
- 1988: o Development of health advisories and criteria documents (Scientific Assessment)
o Report on target organ toxicity of disinfectants and disinfectant by-products (Health)
o Response report on target organ toxicity of chemicals tested for health advisory development (Health)
- 1987: o Preparation of 30 drinking water health advisories on unregulated VOCs (Scientific Assessment)
o Preparation of criteria documents (Scientific Assessments)
o Report on cancer and reproductive hazards of principal contaminants in drinking water (Health)

Objective 2: Provide Engineering Technologies and Monitoring Data for Drinking Water Standards

- 1989: o Report on radiation methods validation and intercomparison studies program for drinking water radiation quality assurance (Monitoring)
o Development and verification of Legionella inactivation data for public plumbing systems (Engineering)
o Report on treatment techniques to remove radon from small water supplies (Engineering)
- 1988: o Final standardized methods for synthetic organic chemicals and pesticides for the underground water survey (Monitoring)
o Internal report on in-house pilot studies for control of disinfectant by-products (Engineering)
- 1987: o Distribution of 52,000 quality control and performance evaluation samples for chemical, radionuclide, and microbiological analysis of drinking water (Monitoring)
o Conducted laboratory certification for 10 Regions (Monitoring)
o Report on the removal of radium from drinking water (Engineering)

Objective 3: Provide Scientific Methods and Data for Protection of Ground Water Resources

- 1989: o Report on sources of variability affecting groundwater monitoring data (Monitoring)
o Report on fiber optics for monitoring groundwater contaminants (Monitoring)

- o Report on unregulated sources of groundwater contamination in wellhead protection areas (Environmental Processes)
- 1988: o Evaluation and development of laser-induced fluorescence for monitoring groundwater contamination using fiber optics (Monitoring)
- o Report on in-situ restoration of an aquifer contaminated with halogenated organic contaminants (Environmental Processes)
- o Report on characterization of a saline aquifer used for waste disposal (Environmental Processes)
- 1987: o Evaluation of methods for constructing monitoring wells with hollow stem augers (Monitoring)
- o Computer code and documentation for predicting solubilities in mixed-solvent systems (Environmental Processes)
- o State-of-the-art report on interaction of injected fluids with geologic materials (Environmental Processes)

DRINKING WATER

Drinking Water Research

Budget Request

The Agency requests a total of \$21,997,800 supported by 192.5 total work-years for 1989, a decrease of \$467,900 and no change in total workyears from 1988. Of the request, \$10,464,800 will be for the Salaries and Expenses appropriation and \$11,533,000 will be for the Research and Development appropriation, an increase of \$224,300 and a decrease of \$692,200, respectively.

Program Description

The Drinking Water research program provides support to States and the EPA Office of Drinking Water (ODW) in implementing the Safe Drinking Water Act (SDWA). This program consists of the following objectives:

Objective 1: Develop Drinking Water Standards Based on Health Effects Through Risk Assessment Studies. Research in this activity provides health assessment information to support the Office of Drinking Water in developing revised regulations to control drinking water contaminants under the SDWA. The health research program also assists States in ascertaining causes of waterborne infectious disease outbreaks and determining the hazard to humans from exposure to infectious agents through drinking water.

Objective 2: Provide Engineering Technologies and Monitoring Data for Drinking Water Standards. Research supporting this objective provides analytical procedures to monitor drinking water contaminants. In addition, engineering research will evaluate treatment processes and costs to support ODW regulatory decision-making.

Objective 3: Provide Scientific Methods and Data for Protection of Ground-Water Resources. Work in this category will provide the scientific basis for the protection of underground drinking water sources to implement Section 1421 and 1414 of the SDWA. These efforts are coordinated with the pesticides and hazardous waste programs.

SCIENTIFIC ASSESSMENT

1989 Program Request

The Agency requests a total of \$728,900 supported by 9.0 total workyears for this program, of which \$432,100 will be for the Salaries and Expenses appropriation and \$296,800 will be for the Research and Development appropriation. This represents an increase of \$9,300 in the Salaries and Expenses appropriation, with no change in the Research and Development appropriation and total workyears. The increase in the Salaries and Expenses appropriation reflects a general enhancement of in-house support for the risk assessment program.

Develop Drinking Water Standards Based on Health Effects Through Risk Assessment Studies. Research will provide health criteria and assessment documents for a variety of drinking water contaminants including disinfectants and their by-products. The program will provide technical support and assistance in response to Regional and State requests. Research will develop state-of-the-art methodologies for assessment of potential risk to human health from exposure to contaminants found in drinking water.

1988 Program

In 1988, the Agency is allocating a total of \$719,600 supported by 9.0 total workyears for this program, of which \$422,800 is from the Salaries and Expenses appropriation and \$296,800 is from the Research and Development appropriation.

In 1988, this program is finalizing criteria documents for publication, preparing criteria documents for external review and initiating new documents. The program is also preparing health advisories for submission to Regions and States as guidance.

1987 Accomplishments

In 1987, the Agency obligated a total of \$644,600 supported by 8.7 total workyears for this program, of which \$349,800 was from the Salaries and Expenses appropriation and \$294,800 was from the Research and Development appropriation.

Major accomplishments included the finalization of documents on the Phase II chemicals, preparation of the external review draft documents on the Phase V chemicals and the revision (following QA/QC review) of health advisories of 30 unregulated VOCs listed under Section 1445 SDWA.

MONITORING SYSTEMS AND QUALITY ASSURANCE

1989 Program Request

The Agency requests a total of \$2,955,600 supported by 28.7 total workyears for this program, of which \$1,678,300 will be for the Salaries and Expenses appropriation and \$1,277,300 will be for the Research and Development appropriation. This represents an increase of \$36,000 and a decrease of \$292,200, respectively, and no change in total workyears. The increase in the Salaries and Expenses appropriation reflects general enhancement of inhouse support for the groundwater program. The decrease in Research and Development appropriation reflects the completion of several monitoring studies.

Provide Engineering Technologies and Monitoring Data for Drinking Water Standards. The program will distribute quality control samples and conduct performance evaluation studies in support of the Agency's quality assurance program. Method validation studies will be conducted for organic contaminants newly regulated under the Safe Drinking Water Act. The program will evaluate 10 regions for capabilities to provide quality data in support of the National Interim Primary Drinking Water Regulations and the Safe Drinking Water Act Amendments of 1986. In 1989, fees for quality control and performance evaluation samples will be collected following the expected publication of a final rule in 1988.

Provide Scientific Methods and Data for Protection of Groundwater Resources. Research will provide both technical information and improved methods for predicting contaminant movement and transformation to allow better human exposure assessments from groundwater contamination. Research will include looking at identification and assessment technologies for improving injection well practices, assessing fluid movement from injection wells and developing laser induced fluorescence for monitoring groundwater by fiber optics.

1988 Program

In 1988, the Agency is allocating a total of \$3,211,800 supported by 28.7 total workyears for this program, of which \$1,642,300 is from the Salaries and Expenses appropriation and \$1,569,500 is from the Research and Development appropriation.

In 1988, the monitoring program is expediting methods validation work to meet the new drinking water regulations for organic chemical contaminants. The program provides analytical procedures to monitor drinking water contaminants including development of procedures for analysis of radioactive contaminants and improved coliform analysis methods. Fees for quality control and performance evaluation samples will be collected following the expected publication of a final rule in 1988.

1987 Accomplishments

In 1987, the Agency obligated a total of \$3,165,400 supported by 27.9 total workyears for this program, of which \$1,590,900 was from the Salaries and Expenses appropriation and \$1,574,500 was from the Research and Development appropriation.

In support of the revised Primary Drinking Water Regulations, analytical methods for the determination of organic compounds in finished drinking water and raw source water were developed as well as analytical methods for the National Pesticides Survey.

HEALTH EFFECTS

1989 Program Request

The Agency requests a total of \$8,074,900 supported by 66.4 total workyears for this program, of which \$3,504,000 will be for the Salaries and Expenses appropriation and \$4,570,900 will be for the Research and Development appropriation. This represents an increase of \$75,100 and a decrease of \$400,000, respectively, and no change in total workyears. The increase in the Salaries and Expenses appropriation reflects a general enhancement of inhouse support for the health effects program. The decrease in the Research and Development appropriation reflects the completion of toxicological testing on the major set of chemicals identified for regulation under the SDWA.

Develop Drinking Water Standards Based on Health Effects Through Risk Assessment Studies. The health research program will support the ODW in its effort to develop drinking water recommended maximum contaminant levels. In response to the Safe Drinking Water Act Amendments, toxicological research will be directed at the disinfection process. Research will be conducted to isolate, identify, synthesize and characterize the toxicity of the major disinfectant byproducts.

Microbiological research will be conducted to develop a methodology for identifying viruses and bacteria to be used in exposure assessment. A study will be undertaken to relate microbiological indicators to levels of symptomatic illness in humans affected by drinking water contaminated by viruses. Research will develop detection techniques and determine the infectivity of Cryptosporidium (protozoa).

1988 Program

In 1988, the Agency is allocating a total of \$8,399,800 supported by 66.4 total workyears for this program, of which \$3,428,900 is from the Salaries and Expenses appropriation and \$4,970,900 is from the Research and Development appropriation.

The health research program is providing a scientific base for the Agency and States to use in identifying and controlling harmful contaminants in drinking water. Research is focused on those areas identified by ODW which support their regulatory efforts. This includes research on disinfectants, organic and inorganic contaminants, and waterborne pathogens and disease. Several epidemiology studies on drinking water quality and human health will be completed.

1987 Accomplishments

In 1987, the Agency obligated a total of \$8,622,300 supported by 67.3 total workyears for this program, of which \$3,295,500 was from the Salaries and Expenses appropriation and \$5,326,800 was from the Research and Development appropriation.

A report on the toxicity of 16 drinking water contaminants was completed. This data will be used to develop maximum contaminant levels goals (MCLG's) and health advisories. A study on the virulence characterization of Legionella was completed.

ENVIRONMENTAL ENGINEERING AND TECHNOLOGY

1989 Program Request

The Agency requests a total of \$5,179,600 supported by 59.3 total workyears for this program, of which \$3,215,700 will be for the Salaries and Expenses appropriation and \$1,963,900 will be for the Research and Development appropriation. This represents an increase of \$68,900 in the Salaries and Expenses appropriation, with no change in the Research and Development appropriation and in total workyears. The increase in the Salaries and Expenses appropriation reflects a general enhancement of inhouse support for the engineering and technology program.

Provide Engineering Technologies and Monitoring Data for Drinking Water Standards. This program will provide evaluation of processes for removal of volatile organic compounds (VOCs), pesticides and radionuclides for use in regulation implementation. It will provide information on treatment systems performances and costs to permit cost-effectiveness analyses of proposed treatment systems. The program will focus on evaluations of disinfectant effectiveness and factors contributing to microbial deterioration of water quality in distribution systems. Research emphasizing technologies especially adaptable to small systems will also be performed.

1988 Program

In 1988, the Agency is allocating a total of \$5,110,700 supported by 59.3 total workyears for this program, of which \$3,146,800 is from the Salaries and Expenses appropriation and \$1,963,900 is from the Research and Development appropriation.

Research is evaluating treatment processes and costs to support ODW regulatory decisionmaking. Cost data is being compiled for unit processes to do cost-effectiveness analyses of proposed treatment systems. Factors which contribute to deterioration of water quality in distribution systems and methods for control are being investigated. Research work emphasizing technology particularly adaptable to small systems is also being performed.

1987 Accomplishments

In 1987, the Agency obligated a total of \$5,475,200 supported by 58.7 total workyears for this program, of which \$3,179,100 was from the Salaries and Expenses appropriation and \$2,296,100 was from the Research and Development appropriation.

A report on the removal of radium from drinking water was produced and a report on performance and cost information on a full-scale ion exchange plant for nitrate removal was completed. An interim report on concentration times time (Cxt) values for hepatitis and coliphage inactivation was completed.

ENVIRONMENTAL PROCESSES AND EFFECTS

1989 Program Request

The Agency requests a total of \$5,058,800 supported by 29.1 total workyears for this program, of which \$1,634,700 will be for the Salaries and Expenses appropriation and \$3,424,100 will be for the Research and Development appropriation. This represents an increase of \$35,000 in the Salaries and Expenses appropriation, with no change in the Research and Development appropriation and in total workyears. The increase in the Salaries and Expenses appropriation reflects a general enhancement of inhouse support for the groundwater program.

Provide Scientific Methods and Data for Protection of Ground Water Resources. This program will focus on methods development and studies of surface transport and fate processes. Research studies will be conducted on in situ aquifer restoration techniques which may potentially lead to a more cost-effective cleanup of aquifers. This work is coordinated with the Hazardous Waste and Pesticides Programs.

Research will provide field evaluation of movement and transformation of wastes from underground injection wells. Joint studies will be conducted with the People's Republic of China in the area of transport and fate of groundwater contaminants. The program will provide technical assistance for the Wellhead Protection program, major technology transfer programs and support for the Underground Injection Control (UIC) program.

1988 Program

In 1988, the Agency is allocating a total of \$5,023,800 supported by 29.1 total workyears for this program, of which \$1,599,700 is from the Salaries and Expenses appropriation and \$3,424,100 is from the Research and Development appropriation.

Research is focused on developing and improving methods for predicting the impacts of contamination on underground sources of drinking water as well as providing for information transfer for the International Groundwater Modeling Center. The program is determining the cost-effectiveness of in situ aquifer restoration techniques and supports the Underground Injection Control (UIC) program by studying the fate and transport of wastes in and from the injection zone. The Wellhead Protection program is providing a study of unregulated sources and how they affect wellhead protection areas.

1987 Accomplishments

In 1987, the Agency obligated a total of \$4,866,800 supported by 28.0 total workyears for this program, of which \$1,481,400 was from the Salaries and Expenses appropriation and \$3,385,400 was from the Research and Development appropriation.

A report was provided on interaction of fluids with geologic materials to the Underground Injection program and a report on computer models available for delineating wellhead protection areas was provided to the wellheaded protection program.

ENVIRONMENTAL PROTECTION AGENCY

1989 Budget Estimate

Table of Contents

<u>DRINKING WATER</u>	<u>Page</u>
ABATEMENT & CONTROL	
Drinking Water Criteria, Standards & Guidelines.....	DW-20
Criteria, Standards & Guidelines.....	DW-21
Drinking Water State Program Resource Assistance.....	DW-24
Public Water Systems Supervision Program Grants.....	DW-25
Underground Injection Control Program Grants.....	DW-27
Special Studies & Demonstrations.....	DW-28
Drinking Water Management.....	DW-30
Public Water Systems Supervision Program Assistance.....	DW-32
Underground Injection Control Program.....	DW-34
Ground-Water Protection.....	DW-37

DRINKING WATER
Drinking Water Criteria, Standards & Guidelines

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988	
----- (DOLLARS IN THOUSANDS) -----							
PROGRAM -----							
Criteria, Standards & Guidelines							
Salaries & Expenses	\$6,552.9	\$7,258.7	\$7,049.0	\$7,049.0	\$7,507.2	\$458.2	
Abatement Control and Compliance	\$9,120.6	\$8,903.0	\$8,903.0	\$8,903.0	\$8,903.0		
TOTAL	\$15,673.5	\$16,161.7	\$15,952.0	\$15,952.0	\$16,410.2	\$458.2	
TOTAL:							
Salaries & Expenses	\$6,552.9	\$7,258.7	\$7,049.0	\$7,049.0	\$7,507.2	\$458.2	
Abatement Control and Compliance	\$9,120.6	\$8,903.0	\$8,903.0	\$8,903.0	\$8,903.0		
Drinking Water Criteria, Standards & Guidelines	TOTAL	\$15,673.5	\$16,161.7	\$15,952.0	\$15,952.0	\$16,410.2	\$458.2
PERMANENT WORKYEARS -----							
Criteria, Standards & Guidelines	98.4	113.5	113.5	103.2	112.0	8.8	
TOTAL PERMANENT WORKYEARS	98.4	113.5	113.5	103.2	112.0	8.8	
TOTAL WORKYEARS -----							
Criteria, Standards & Guidelines	108.8	113.5	113.5	112.0	112.0		
TOTAL WORKYEARS	108.8	113.5	113.5	112.0	112.0		

.

.

.

.

DRINKING WATER

Drinking Water Criteria, Standards and Guidelines

Budget Request

The Agency requests a total of \$16,410,200 supported by 112.0 total workyears for 1989, an increase of \$458,200 from 1988. Of the request, \$7,507,200 will be for the Salaries and Expenses appropriation and \$8,903,000 will be for the Abatement, Control and Compliance appropriation, an increase of \$458,200 and no change, respectively.

Program Description

Criteria, Standards and Guidelines -- This program is responsible for determining and overseeing requirements under the Safe Drinking Water Act (SDWA) for public water systems (PWS) and underground injection wells. This encompasses: 1) identifying contaminants "known or anticipated to occur" in public water supplies that may have any adverse human health effects and assessing the potential magnitude of risk; 2) determining whether, how and to what degree to regulate human exposure from such contaminants within the constraints of analytical and treatment technology to avert such health risk; 3) developing enforceable regulations and other requirements that constitute PWS Supervision and Underground Injection Control (UIC) programs; and 4) providing direction and oversight to the implementation of PWS Supervision and UIC programs.

The Safe Drinking Water Act (SDWA) Amendments of 1986 stipulate several new requirements, including: 1) promulgation of at least 83 new National Primary Drinking Water Regulations (NPDWRs) on a 3-year schedule; 2) establishment of a triennial cycle (beginning in 1988) of listing priority contaminants and subsequently promulgating no less than 25 additional NPDWRs from the list; 3) promulgation of treatment technology NPDWRs for systems with surface water sources and for general disinfection requirements; and 4) establishment of an unregulated contaminant monitoring program whereby all PWSs test for EPA-designated contaminants in a recurring 5-year cycle. These and other mandated revisions to the PWS program (Federal enforcement responsibility, systems' public notice duties, NPDWR-implementation procedures, ban on lead-content plumbing materials) result in a more regulatory-oriented program.

CRITERIA, STANDARDS AND GUIDELINES

1989 Program Request

The Agency requests a total of \$16,410,200 supported by 112.0 total workyears for this program, of which \$7,507,200 will be for the Salaries and Expenses appropriation and \$8,903,000 will be for the Abatement, Control and Compliance appropriation. This represents an increase of \$458,200 in the Salaries and Expenses appropriation, no change in the Abatement, Control and Compliance appropriation, and no change in total workyears. The increase in Salaries and Expenses reflects increased personnel costs.

In 1989 EPA will promulgate the remaining Maximum Contaminant Level Goals (MCLGs) and NPDWRs stipulated by the 1986 Amendments, putting into place a vastly expanded regulatory framework of 83 individual MCLGs and corresponding MCL/treatment NPDWRs. Among these last standards will be those for radon and other radionuclides, as well as those for inorganic and organic toxic chemicals and pesticides. Earlier, an NPDWR will be promulgated for lead that incorporates corrosion control strategies.

The focus of standard-setting shifts with the completion of the statutory timetable to contaminants designated as regulatory candidates within the first list published in 1988 and to the disinfection NPDWR. The list encompasses an array of different kinds of contaminants. At this stage the program will be concentrating on assembling and interpreting data on actual or potential contaminant occurrence and health effects in order to assure maximum risk-reduction. One important data source will be the National Pesticides survey, conducted jointly by the drinking water and pesticides programs, continuing in 1989. In 1989 this program will conduct selected toxicological studies for individual contaminants to ascertain acute, subchronic and chronic adverse health effects.

This first list of contaminants contains a number of disinfectant chemicals and reaction by-products. While reducing the risks of waterborne disease, these chemicals pose a competing risk of potential toxicity of the disinfectants themselves and the organic compounds produced as their reaction by-products. Because disinfection, which will ultimately be a regulatory requirement, is a mainstay to drinking water treatment, these chemicals occur throughout the nation's water supplies and thus represent one of the most widespread contamination risks. In order to address the problem in its entirety, the Agency has found it necessary to defer a mandatory disinfection treatment rule until conclusive scientific knowledge is available regarding the toxicity of disinfectant chemicals. Other contaminants in this next regulatory agenda include the compounds listed in the unregulated contaminant monitoring program and in the Agency's pesticide survey, and hazardous substances listed by the Superfund program as the most significant potential contaminant risks.

As standard-setting continues, pursuant to legislative mandates and the need to avert new risks, the successful implementation of a whole new regulatory framework assumes increasing importance. Of particular concern are those contaminants that occur widely and pose particular health risks: pathogenic microorganisms, lead and radionuclides are the contaminants with standards finalized or in effect in 1989 that are the most substantial risks to be reduced. The Agency will pursue an aggressive mobilization strategy during the transition period from promulgation to effective dates, in order to achieve as much voluntary compliance as possible. In assuming this task, the Agency will increase the development and dissemination of information and technical assistance. Meanwhile, this program will maintain its ongoing risk assessment and advisory role within the framework of a fully integrated Agency effort.

Following the report to Congress regarding the contamination potential of Class V injection wells, the Agency is reviewing high-risk practices that pose particular threats to underground sources of drinking water. The program will implement a strategy for the systematic use of existing permit, regulatory and enforcement authorities.

1988 Program

In 1988 the Agency is allocating a total of \$15,952,000 supported by 112.0 total workyears for this program, of which \$7,049,000 is from the Salaries and Expenses appropriation and \$8,903,000 is from the Abatement, Control and Compliance appropriation.

The program is concentrating on satisfying the 1986 Amendments' mandates for new drinking water standards and regulations. During the year the Agency is 1) promulgating the second set of MCLGs and NPDWRs for more than 40 contaminants, pursuant to the legislative timetable; 2) promulgating a treatment technology NPDWR for surface source PWSs and a general microbiological MCL, both to combat waterborne pathogens; and 3) publishing the required list of contaminants that may be candidates for regulation within 3 years. One of the highest priorities is a regulatory strategy to reduce waterborne lead through a proposed NPDWR that addresses control of water corrosivity that causes lead contamination. Also being proposed are the

MCLG/NPDWRs for the third batch of 34 chemical/radionuclide contaminants. Also, the program will add contaminants to the unregulated contaminant monitoring requirements, prompting systems to monitor for contaminants soon to be regulated.

A national survey of pesticide contamination in water supply wells is underway with the joint participation of the drinking water and pesticides programs, testing for approximately 60 active ingredients and by-product compounds. Additional health advisories continue to be prepared for contaminants associated with monitoring initiatives and in response to reports of localized contamination.

Other activities under the Amendments include the promulgation of 1) eligibility requirements for Indian tribal authorities to be granted primary enforcement authority (primacy) for PWS and UIC regulations; 2) procedures for States to revise their PWS primacy authority for new regulatory responsibilities; 3) revisions to UIC regulations specifying new monitoring requirements for Class I wells. EPA is also encouraging States to deal with high-risk practices relating to Class V injection wells.

Both national programs are at a critical point in their respective development, compelling more aggressive field review of PWS and UIC programs. Requirements for PWS program management and oversight will increase with the issuance of new contaminant standards and treatment requirements, along with other changes to PWS program provisions (variances, exemptions and public notification) to enhance compliance. Meanwhile, the program ensures that the underground injection control program is preventing the endangerment of USDW. As technical issues develop with UIC implementation (permitting, compliance monitoring, mechanical integrity testing), EPA is helping to assure consistency through guidance and regulatory revisions. In both programs, national oversight and coordination encompasses definition and tracking of environmentally relevant results.

1987 Accomplishments

In 1987, the Agency obligated \$15,673,500 supported by 108.8 total workyears for this program, of which \$6,552,900 was from the Salaries and Expenses appropriation and \$9,120,600 was from the Abatement, Control and Compliance appropriation.

EPA promulgated nine NPDWRs (for fluoride and 8 volatile organic contaminants) together with requirements for PWS monitoring of unregulated chemical contaminants. Also promulgated are mandated revisions to systems' public notice requirements designed to simultaneously streamline and strengthen the content, manner and timeliness of notice, including new requirements to notify the public that may be affected by lead contamination of drinking water systems.

In the process of proposing NPDWRs for the majority of inorganic and synthetic organic chemical contaminants, EPA proposed substituting seven contaminants specified by the Amendments for regulation. At the same time, the first list of eventual regulatory candidates was proposed. A report to Congress was submitted detailing the States' Class V injection well inventory and assessments. Also, the "pilot" phase of the National survey of pesticide occurrence in water supply wells was completed.

DRINKING WATER
Drinking Water State Program Resource Assistance

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988
----- (DOLLARS IN THOUSANDS) -----						
PROGRAM -----						
Wellhead Protection Abatement Control and Compliance		\$8,000.0				
TOTAL		\$8,000.0				
Public Water Systems Supervision Program Grants						
Abatement Control and Compliance	\$33,391.0	\$33,450.0	\$33,450.0	\$33,450.0	\$33,450.0	
TOTAL	\$33,391.0	\$33,450.0	\$33,450.0	\$33,450.0	\$33,450.0	
Underground Injection Control Program Grants						
Abatement Control and Compliance	\$9,756.6	\$9,500.0	\$11,500.0	\$11,500.0	\$9,500.0	-\$2,000.0
TOTAL	\$9,756.6	\$9,500.0	\$11,500.0	\$11,500.0	\$9,500.0	-\$2,000.0
Special Studies & Demonstrations						
Abatement Control and Compliance	\$2,600.0		\$3,000.0	\$3,000.0		-\$3,000.0
TOTAL	\$2,600.0		\$3,000.0	\$3,000.0		-\$3,000.0
TOTAL:						
Abatement Control and Compliance	\$45,747.6	\$50,950.0	\$47,950.0	\$47,950.0	\$42,950.0	-\$5,000.0
Drinking Water State Program Resource Assistance	TOTAL	\$45,747.6	\$50,950.0	\$47,950.0	\$47,950.0	\$42,950.0 - \$5,000.0

DRINKING WATER

Drinking Water State Program Resource Assistance

Budget Request

The Agency requests a total of \$42,950,000 for 1989, a decrease of \$5,000,000 from 1988. All of the request will be for the Abatement, Control and Compliance appropriation.

Program Description

The Safe Drinking Water Act (SDWA) provides for States to assume the primary role for implementing and enforcing the drinking water and Underground Injection Control (UIC) regulations. Financial assistance, in the form of grants, is provided to the States to develop and maintain these programs. To be eligible for these grants the States must have primary enforcement authority (primacy). Indian tribes demonstrating intent to achieve primacy may receive a grant for the initial development of their programs. Other resource assistance is provided for training, technical assistance and special studies.

This subactivity includes the following programs:

Public Water Systems (PWS) Supervision Program Grants -- This program provides grants to primacy States for PWS regulatory programs aimed at ensuring that the Nation's water supplies are free from contamination which may pose adverse health effects. The SDWA Amendments of 1986 authorize the Administrator to provide PWS grants to eligible Indian tribes and mandate specific changes in PWS Supervision programs aimed at broadening the health protection afforded by federal regulations as well as improve compliance with regulations, particularly among small systems. The programs of States and Indian tribes that are supported by these grants must adopt the changes in order to maintain primacy. EPA may use the funds allocated to non-primacy States and to Indian tribes who do not qualify for primacy to defray the cost of Federal direct implementation, including travel.

Underground Injection Control Program Grants -- This program provides grants to support State activities in implementing the UIC program to protect underground sources of drinking water. As with the PWS program, the SDWA Amendments authorize UIC grants to eligible Indian tribes and EPA may use the funds allocated to a non-primacy State or Indian tribe for program implementation, including associated travel.

Special Studies and Demonstrations -- This program provides resources for training and technical assistance to owners and operators of small rural water systems in the areas of management, finance and facility operations.

PUBLIC WATER SYSTEMS SUPERVISION PROGRAM GRANTS

1989 Program Request

The Agency requests a total of \$33,450,000 for this program, all of which will be for the Abatement, Control and Compliance appropriation. This represents no change from 1988.

The principal task in 1989 is to transform the regulatory framework of the PWS Supervision program while minimizing an increase in system non-compliance pursuant

to the increased regulatory requirements. EPA's strategy is to promote rapid State implementation of the new requirements and support States as they build their capacity to implement a comprehensive regulatory framework. Integral to this strategy is the need to enlist agencies and constituencies beyond EPA in improving understanding of and mobilizing support for enhanced protection of drinking water, such as by disseminating the new requirements, making consumers and the regulated community more aware of the health risks, and encouraging greater monitoring, operator training and treatment efforts. At the same time, States will vigorously pursue ongoing violations with the full range of administrative and enforcement tools at their disposal. Consequently, States must both maintain their current high level of administrative and enforcement actions and meet the new challenges while addressing the non-compliance problems of small systems.

During 1989 new National Primary Drinking Water Regulations (NPDWRs) for volatile organic contaminants (VOCs) will come into effect, which means all PWSs will be responsible for meeting the maximum contaminant levels (MCLs) if and when unsafe levels are found (although small and very small systems have an extended period to monitor for them). Further, all 200,000 PWSs will be required to implement coliform monitoring while the revised microbiological MCL comes into effect. A host of new chemical contaminant monitoring requirements apply to medium, large and very large systems in this year as well.

A filtration NPDWR will be promulgated. This unique regulation will specify legislatively mandated special procedures whereby the primacy authority (State or EPA) shall determine the need for installing or upgrading filtration and pre-treatment processes in systems with sources from or directly influenced by surface water. The Amendments also specify a timetable for implementation. First, the States must adopt the necessary regulations to administer and enforce the filtration rule within 18 months of its promulgation. Upon adoption, States have 12 months to make the determinations. States will begin to amend their legal authorities in 1989 to adopt the technology-based standards and specify their unique "determination" procedure. A few such "determinations" can be expected in 1989.

Grant funds will continue to be available to Indian tribal authorities who are in the process of qualifying for PWS primary enforcement responsibility. EPA will continue to use grant funds to support its direct implementation responsibilities, including travel.

1988 Program

In 1988 the Agency is allocating a total of \$33,450,000 for this program, all of which is from the Abatement, Control and Compliance appropriation.

State programs are maintaining their emphasis on efforts to bring public water systems into compliance, using a judicious combination of technical assistance and enforcement. States will establish agreements (including exemptions) involving tangible milestones for actions to reduce contaminant levels. In serious instances, States will take formal enforcement actions and punitive administrative penalties.

States are beginning to implement the first 9 NPDWRs, revising their legal authorities to accommodate new MCLs, expanding State laboratory certification capability, and assisting systems to prepare to comply with the requirements. At the same time systems will be called upon to monitor for unregulated contaminants over a 5-year period.

State programs are subject to a number of other procedural changes ensuing from the Amendments: 1) new public notification requirements; 2) authorities to issue new 1-year exemptions, attendant enforceable compliance schedules and 3-year "extensions" to compliance deadlines; 3) new ground rules for MCL variances and 4) bans on lead-content plumbing materials which, if not enforced, will result in up to a

5% withholding of the PWS State grant. In 1988, Indian tribal authorities may be eligible for development grants consistent with forthcoming Federal regulations.

The PWS grant funds will continue to support primacy program and EPA direct implementation program activities including analytical services, sanitary surveys, training, disease surveillance, on-site technical activities, and data management.

1987 Accomplishments

In 1987 the Agency obligated a total of \$33,391,000 for this program, all of which was from the Abatement, Control and Compliance appropriation.

Fifty-four States and territories, encompassing 96% of the nation's community systems, maintained primacy and received grants while EPA used the funds allotted to the States and Indian jurisdictions for contract implementation. States incorporated new regulatory and monitoring requirements into existing programs and adopted new analytical techniques to meet additional laboratory certification requirements. States also adopted measures to implement the ban on lead plumbing materials and took enforcement actions against violations of the drinking water standards.

UNDERGROUND INJECTION CONTROL PROGRAM GRANTS

1989 Program Request

The Agency requests a total of \$9,500,000 for this program, all of which will be for the Abatement, Control and Compliance appropriation. This represents a decrease of \$2,000,000 that was allocated in 1988 to complete the permitting of Class II wells and support additional efforts on Class I hazardous waste wells.

These funds will support State or EPA programs to protect underground drinking water sources from contamination through underground injection practices. In 1989, EPA will revise its regulations for the control of Class V well types that have been identified as "high risk". Permitting, which enables States (or EPA) to apply the general UIC requirements to site-specific conditions, will continue with new class I wells, the repermitting of hazardous waste Class I wells, new Class II wells and Class V wells.

In an effort to promote greater compliance and enforcement, efforts will focus on increased site inspections and review of monitoring reports to determine adherence to regulatory requirements. When necessary, administrative orders (AOs) and/or legal actions will be initiated against owners/operators that significantly violate UIC regulatory requirements. This will include preparing public notification of violation and intent to issue AOs, and conducting public hearings. In cases of legal actions, the States will be required to develop technical cases against violators which include preparing litigation reports and affidavits and providing testimony.

The grant funds will also support technical assistance to operators, maintenance of inventory data, and regulatory changes to accommodate new EPA requirements and/or guidelines. The Agency will provide grants to Indian tribes working towards primacy, and will continue to implement the program on Indian lands and in non-primacy States. The Agency may use a portion of the grant funds for travel related to implementation activities.

1988 Program

In 1988, the Agency is allocating a total of \$11,500,000 for this program, all of which is from the Abatement, Control and Compliance appropriation.

These funds support programs to protect underground sources of drinking water from contamination through underground injection in all 57 States and Territories, as well as on Indian lands. EPA uses grant funds allotted to 16 full non-primacy and 6 partial non-primacy States and Indian lands to support direct implementation activities. Primacy regulations determining the eligibility of Indian tribes will be completed and development grants awarded to eligible tribes. The top priority for permitting by EPA and the States is new Class II wells. Under existing regulations, EPA is increasing efforts to bring enforcement and/or regulatory action against Class V wells which endanger underground sources of drinking water by targeting vulnerable areas and "high risk" Class V wells.

Grant funds also support surveillance and compliance activities. The program's primary means of surveillance is through the receipt and review of operator reports. This requires the program to maintain an effective verification effort to ensure the credibility of operators' data. In addition, demonstrated absence of leaks through mechanical integrity testing is an important element of compliance. Where violations are evident, appropriate enforcement action is being initiated. States will emphasize compliance with permit conditions by increasing inspections, mechanical integrity tests (MIT) and surveillance activities.

1987 Accomplishments

In 1987, the Agency obligated a total of \$9,756,600 for this program, all of which was from the Abatement, Control and Compliance appropriation.

Thirty-three full and six partial programs received grant funds, while EPA implemented 24 Federal programs supported in part by the grant funds. The States and EPA completed 6,251 permit determinations for new and existing wells and conducted evaluations to determine if permit requirements were being met. In addition, mechanical integrity tests were conducted to ensure the integrity of the wells. The States and EPA also focused on compliance activities by increasing field inspections and initiating enforcement actions. The States increased their activities relating to Class I and II wells as a result of a special set-aside in the grants. Other activities included the review of monitoring reports, maintenance of inventory data, and the completion of EPA Headquarters Class V assessment and report to Congress.

SPECIAL STUDIES AND DEMONSTRATIONS

1989 Program Request

In 1989, no funding is requested for this program. This represents a decrease of \$3,000,000 in the Abatement, Control and Compliance appropriation from 1988. The decrease represents the completion of training and technical assistance to small rural systems by the National Rural Water Association (NRWA) and the Rural Community Assistance Program (RCAP). By 1989, the State affiliates should be self-sufficient through their organizational dues and training fees.

1988 Program

In 1988 the Agency is allocating a total of \$3,000,000 for this program, all of which is from the Abatement, Control and Compliance appropriation.

The program supports rural water training and technical assistance through the NRWA and its 31 affiliates who are independent non-profit State Rural Water Associations covering 33 States. "Grass roots" training and technical assistance is provided to the owners and operators of rural water systems to help achieve and maintain compliance with the SDWA Amendments. Training includes small water system and well operations and maintenance, monitoring, record keeping, water regulations, rates, reporting, systems management, distribution and disinfection which enhance the rural water system delivery of clean, safe drinking water. Additionally, a pilot program is addressing the problems which cause systems to be out of compliance with maximum contaminant levels and/or monitoring and reporting requirements for four or more months.

EPA is also providing funds to the RCAP which complements the NRWA by assisting small public water systems to improve their management capabilities, long term planning, SDWA compliance, rate structures and financial management. By conducting site visits to these systems, RCAP determines technical assistance needs and develops education programs for compliance improvement.

Programs currently under development include (1) a pilot preventive program in one state, (2) an assistance program to help small systems apply for loans and grants, (3) a Resource Clearinghouse project to compile all available funds within a state into a manual that small systems could use, and (4) training information and manuals for small water system operators and/or owners.

1987 Accomplishments

In 1987, the Agency obligated a total of \$2,600,000 for this program, all of which was from the Abatement, Control and Compliance appropriation.

The technical assistance and training program conducted by the NRWA and its affiliates included 368 informational seminars for operators and decision makers, 115 technical training sessions, 37 jointly sponsored specialized training sessions with other State and Federal agencies, and 36 problem solving sessions. The NRWA affiliates made 7,586 technical assistance visits during this period addressing individual rural water system problems with compliance, operations and maintenance, finance and overall management.

DRINKING WATER
Drinking Water Management

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988	
----- (DOLLARS IN THOUSANDS) -----							
PROGRAM -----							
Public Water Systems Supervision Program Assistance							
Salaries & Expenses	\$4,760.9	\$5,258.4	\$5,105.6	\$5,105.6	\$5,417.0	\$311.4	
Abatement Control and Compliance		\$10.0	\$10.0	\$10.0	\$10.0		
TOTAL	\$4,760.9	\$5,268.4	\$5,115.6	\$5,115.6	\$5,427.0	\$311.4	
Underground Injection Control Program							
Salaries & Expenses	\$5,423.8	\$5,805.6	\$5,648.7	\$5,648.7	\$5,993.3	\$344.6	
TOTAL	\$5,423.8	\$5,805.6	\$5,648.7	\$5,648.7	\$5,993.3	\$344.6	
TOTAL:							
Salaries & Expenses	\$10,184.7	\$11,064.0	\$10,754.3	\$10,754.3	\$11,410.3	\$656.0	
Abatement Control and Compliance		\$10.0	\$10.0	\$10.0	\$10.0		
Drinking Water Management	TOTAL	\$10,184.7	\$11,074.0	\$10,764.3	\$10,764.3	\$11,420.3	\$656.0
PERMANENT WORKYEARS -----							
Public Water Systems Supervision Program Assistance	110.3	124.6	124.6	115.6	124.0	8.4	

DRINKING WATER
Drinking Water Management

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988
----- (DOLLARS IN THOUSANDS) -----						
Underground Injection Control Program	135.4	147.6	147.6	137.4	145.8	8.4
TOTAL PERMANENT WORKYEARS	245.7	272.2	272.2	253.0	269.8	16.8
TOTAL WORKYEARS						

Public Water Systems Supervision Program Assistance	121.8	124.6	124.6	124.0	124.0	
Underground Injection Control Program	145.8	147.6	147.6	145.8	145.8	
TOTAL WORKYEARS	267.6	272.2	272.2	269.8	269.8	

DRINKING WATER

Drinking Water Management

Budget Request

The Agency requests a total of \$11,420,300 supported by 269.8 total workyears for 1989, an increase of \$656,000 from 1988. Of the request, \$11,410,300 will be for the Salaries and Expenses appropriation and \$10,000 will be for the Abatement, Control and Compliance appropriation, an increase of \$656,000 and no change, respectively.

Program Description

The Safe Drinking Water Act (SDWA) authorizes two national programs dedicated to the protection of drinking water and its underground sources.

Public Water Systems Supervision Program Assistance -- This program consists of Regional activities for national implementation of drinking water regulations to ensure that public water systems (PWS) are free of contamination which may pose adverse health effects. The Regional offices provide oversight and support to States with primary enforcement authority (primacy) for administering PWS Supervision programs and implement corresponding programs in non-primacy, direct implementation (DI) jurisdictions, including States and Indian lands. Pursuant to the SDWA Amendments of 1986, Indian tribal authorities will become eligible for PWS program primacy, subject to Regional/Headquarters review and approval. The Regions evaluate State programs, award the PWS grants and continue to respond to contamination incidents including those involving unregulated contaminants which may adversely affect the safety of water supplies.

Underground Injection Control Program -- This program consists of the Regional activities related to the protection of underground sources of drinking water from unsafe injection practices. The Regions are responsible for ensuring the implementation of Underground Injection Control (UIC) regulations by either oversight of primacy States or Indian lands or actual implementation of the program requirements. As with the PWS program, the SDWA Amendments authorize Indian tribal authorities to become eligible for UIC program primacy, pursuant to EPA regulations.

PUBLIC WATER SYSTEMS SUPERVISION PROGRAM ASSISTANCE

1989 Program Request

The Agency requests a total of \$5,427,000 supported by 124.0 total workyears for this program, of which \$5,417,000 will be for the Salaries and Expenses appropriation and \$10,000 will be for the Abatement, Control and Compliance appropriation. This represents an increase of \$311,400 for the Salaries and Expenses appropriation, no change to the Abatement, Control and Compliance appropriation, and no change in total workyears. The increase represents additional program activities resulting from the requirements of the SDWA Amendments of 1986.

To get the best possible start on assuring compliance with the multitude of new and revised standards that will become effective, EPA and the States must ensure maximum compliance with existing requirements. To this end, EPA regions will negotiate with primacy States to obtain annual compliance targets and work with the States to maintain vigilant monitoring of systems' compliance and prompt, thorough response to violations. In non-primacy jurisdictions the regions will track systems' compliance status, notify them of violations and lay the groundwork for any necessary enforcement actions.

The preeminent task in 1989 will be to transform the regulatory framework of the PWS Supervision program, while minimizing any increase in system non-compliance pursuant to the increased regulatory requirements. EPA's strategy is to promote timely State implementation of the succession of new requirements and to support States as they build their capacity to implement the new requirements. An integral part of this strategy is the need to enlist agencies and constituencies beyond EPA in mobilizing understanding of and support for enhanced protection of drinking water. New activities by these groups will range from disseminating the new requirements to protect supplies, to making consumers and the regulated community more aware of the health risks and the need to increase monitoring, operator training and treatment efforts.

During 1989 new NPDWRs for volatile organic contaminants (VOCs) will require all PWSs to be responsible for meeting the MCLs if and when unsafe levels are found (although small and very small systems have an extended period to monitor for them). In addition, the Regions will supervise State adoption of critical new regulatory requirements promulgated during 1988: 1) 40-plus NPDWRs for inorganic and organic chemicals; 2) an NPDWR for lead and corrosion control; and 3) an NPDWR specifying treatment technology and performance for surface source PWSs. The latter two are of particular importance by virtue of the widespread occurrence of lead contamination in drinking water and the particular vulnerability of surface-source systems to pathogenic microorganisms such as Giardia and viruses.

Pursuant to the new authorities making Indian Tribal authorities eligible to assume primacy for PWS Supervision responsibilities, the Regions will help such authorities develop primacy prerequisites and make the necessary applications. The Regions will then review and resolve such applications with Headquarters.

1988 Program

In 1988 the Agency is allocating a total of \$5,115,600 supported by 124.0 total workyears for this program, of which \$5,105,600 is for the Salaries and Expenses appropriation and \$10,000 is for the Abatement, Control and Compliance appropriation.

During 1988 EPA Regions must supervise State adoption of several additional statutory requirements designed to decrease existing non-compliance among Community Water Systems (CWS). The first nine new NPDWRs become effective by the end of calendar 1988. Before this time, all primacy States are expected to adopt the legal authority to apply and enforce the Maximum Contaminant Levels (MCLs) and monitoring and reporting (M/R) requirements that comprise primary regulations, and also begin finding any instances of MCL violations. These and subsequent new standards create a serious new burden on Regional laboratory certification responsibilities.

A filtration treatment NPDWR is under development. This is a unique primary regulation which specifies legislatively mandated procedures by which primacy authorities (a State or EPA) determine the need for installing or upgrading filtration and pretreatment processes in systems with sources from or directly influenced by surface water. The Regions are helping primacy States revise their legal authorities to incorporate these specific provisions. As States adopt the regulatory authority, the Regions provide advice on case-by-case determinations and on prescribing/tracking enforceable compliance schedules. Finally the Regions also begin making determinations for surface-source systems in non-primacy jurisdictions so that they can complete the task by 1990.

Primacy authorities are subject to a number of other procedural changes ensuing from the Amendments. States seek Regional help and guidance on implementation such as the new public notification requirements. By 1988 all States are required to implement provisions banning lead-content plumbing materials. Regions are reviewing each State's provisions, providing assistance in the event of inaction or inadequate

provisions, and ultimately taking punitive measures (i.e., withholding 5% of PWS grant funds) against recalcitrant States. Upon the promulgation of eligibility requirements for Indian tribes for primacy in early 1988, Regions are working with Indian authorities to develop and review primacy applications.

In promoting further gains in compliance with existing regulatory requirements, the Regions continue to support States in emphasizing elimination of all violations of the NPDWRs, using the full range of available tools and escalating actions as needed. Pursuant to the Agency's guidance, the Regions are negotiating quarterly compliance targets with the States for the reduction of "significant non-compliance" with microbiological, turbidity and chemical MCL requirements. The program continues to track State compliance monitoring to find and help with problem systems and help respond to contamination of supplies and waterborne disease outbreaks.

1987 Accomplishments

In 1987 the Agency obligated a total of \$4,760,900 supported by 121.8 total workyears for this program, all of which was for the Salaries and Expenses appropriation.

The principal Regional priority was to improve compliance among community water systems with all MCLs and M/R requirements. The strategy was to promptly resolve or address all systems defined to be in "significant non-compliance." In achieving this strategy the Regions started special compliance initiatives where such "significant" problems are clustered, presently in the Pacific Islands, the Caribbean Islands and among Alaskan Native Villages.

When EPA promulgated new NPDWRs for 9 contaminants, Regions worked with primacy States to incorporate regulatory and monitoring requirements and helped States with new analytical techniques to meet additional laboratory certification requirements. The Regions carried out detailed consultations with States regarding program changes accompanying the SDWA Amendments, particularly those in effect immediately upon enactment (e.g., new exemption authorities, new compliance categories, lead-bans). To accomplish these tasks and to implement a stronger enforcement program, all mandated by the SDWA Amendments, the Regions curtailed surveillance of interstate carrier conveyance supplies. Ongoing assistance in response to contamination incidents and all other oversight, evaluation and management tasks continued.

UNDERGROUND INJECTION CONTROL PROGRAM

1989 Program Request

The Agency requests a total of \$5,993,300 supported by 145.8 total workyears for this program, all of which will be for the Salaries and Expenses appropriation. This represents an increase of \$344,600 which reflects increased personnel costs.

In 1989, EPA will continue to implement direct implementation (DI) and primacy programs. A key objective will be to ensure more effective compliance and enforcement. This will include more national consistency in handling significant non-compliance (SNCs), increased issuance of AO's and a continued emphasis on field inspections and surveillance. EPA will continue to implement State-specific UIC programs in 20 non-primacy States (15 full and 5 partial) and on Indian lands. This represents a decrease of two programs in 1988 because Indiana and Mississippi are expected to receive primacy in 1989. EPA will propose revisions to existing UIC regulations for Class II wells, review alternative methods for demonstrating mechanical integrity of wells for which no current method is acceptable, and initiate a study to determine whether Class I hazardous waste regulations should apply to all Class I wells.

In addition to implementing Federal programs in non-primacy States, EPA will oversee and provide technical assistance to primacy States. The Regions will evaluate State efforts in implementing their programs to ensure that the programs continue to meet the minimum regulatory requirements. The Agency will review State permits to ensure that they are issued in accordance with approved State programs and see that the permit conditions are being properly enforced. Other oversight activities will include reviewing State non-compliance reports, compiling annual report data, preparing State-specific guidance documents and administering the State grant program.

EPA will revise regulations for the control of Class V well types that have been identified as "high risk", such as untreated waste disposal wells. These well types are potentially a serious threat to underground sources of drinking water (USDW) of the Class V wells, based on such factors as location/usability of USDWs, well construction, nature of injection fluid, and injected volume.

The Regions will continue to implement monitoring requirements for Class I injection wells as required under the SDWA Amendments of 1986. This will include a review of monitoring requirements that need to be addressed in non-primacy States. The Regions will assist Indian Tribes who are working toward assuming primacy as authorized by the SDWA Amendments. For those States without primacy, the Regions will continue to implement Federal programs.

1988 Program

In 1988, the Agency is allocating a total of \$5,648,700 supported by 145.8 total workyears for this program, all of which is from the Salaries and Expenses appropriation.

The Agency continues to implement Federal programs in 22 non-primacy States (16 full and 6 partial) and on Indian lands. Under existing regulations, EPA is increasing efforts to bring enforcement and/or regulatory action against Class V wells which endanger underground sources of drinking water by targeting vulnerable areas and "high risk" Class V wells. The Regions continue to emphasize permit determinations and are responsible for ensuring compliance with the permit requirements by conducting on-site inspections and witnessing and reviewing mechanical integrity tests. Other activities include the development of site-specific guidances, maintaining inventory data, and preparing annual reports.

To implement Federal programs in non-primacy States, EPA oversees and provides technical assistance to primacy States and evaluates State efforts in implementing their programs to ensure that the programs continue to meet the minimum regulatory requirements. As in the direct implementation programs, the Regions focus on State permitting programs. The Agency reviews State permits to ensure that they are issued in accordance with approved State programs and that permit conditions are being properly enforced.

In addition to activities in primacy and non-primacy States, the Regions are implementing monitoring requirements for Class I injection wells as required under the SDWA Amendments of 1986. This includes a review of monitoring requirements in non-primacy States. The Regions are providing assistance to Indian Tribes who are working toward assuming primacy as authorized by the SDWA Amendments.

1987 Accomplishments

In 1987 the Agency obligated a total of \$5,423,800 supported by 145.8 total workyears for this program, all of which was from the Salaries and Expenses appropriation.

The Agency implemented Federal programs in 24 States and on Indian lands. As in the past, this program continued to focus on making permit determinations and on eliminating the backlog of permits for Class II wells in accordance with the 5-year permitting schedule. The Regions conducted on-site inspections, witnessed mechanical integrity tests and conducted record reviews to ensure that requirements were met. In cases where violations were found, the Regions used Administrative Orders to bring about compliance.

Regional activities in primacy States included general oversight (review of well-record reports, operator reports, review of State-issued permits, and annual report data) and technical assistance through the issuance of guidance documents or on-site assistance. The Regions actively encouraged States to promote compliance through on-site inspections, record reviews, and mechanical integrity tests. The Regions, through quarterly reporting data, reviewed the States' progress and took action as was necessary in cases where the program was not being properly enforced. Other Regional activities included the completion of the Class V assessment, maintenance of inventory data, and program grant administration.

DRINKING WATER
Ground-Water Protection

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988
----- (DOLLARS IN THOUSANDS) -----						
PROGRAM -----						
Ground-Water Protection						
Salaries & Expenses	\$2,887.6	\$4,487.3	\$3,692.7	\$3,692.7	\$3,924.3	\$231.6
Abatement Control and Compliance	\$2,733.5	\$3,000.0	\$3,350.0	\$3,200.0	\$3,000.0	-\$200.0
TOTAL	\$5,621.1	\$7,487.3	\$7,042.7	\$6,892.7	\$6,924.3	\$31.6
TOTAL:						
Salaries & Expenses	\$2,887.6	\$4,487.3	\$3,692.7	\$3,692.7	\$3,924.3	\$231.6
Abatement Control and Compliance	\$2,733.5	\$3,000.0	\$3,350.0	\$3,200.0	\$3,000.0	-\$200.0
Ground-Water Protection TOTAL	\$5,621.1	\$7,487.3	\$7,042.7	\$6,892.7	\$6,924.3	\$31.6
PERMANENT WORKYEARS -----						
Ground-Water Protection	53.2	81.6	81.6	78.0	81.1	3.1
TOTAL PERMANENT WORKYEARS	53.2	81.6	81.6	78.0	81.1	3.1
TOTAL WORKYEARS -----						
Ground-Water Protection	61.7	81.6	81.6	81.1	81.1	
TOTAL WORKYEARS	61.7	81.6	81.6	81.1	81.1	

DRINKING WATER

Ground-Water Protection

Budget Request

The Agency requests a total of \$6,924,300 supported by 81.1 total workyears for 1989, an increase of \$31,600 over 1988. Of the request, \$3,924,300 will be for the Salaries and Expenses appropriation and \$3,000,000 will be for the Abatement, Control and Compliance appropriation, an increase of \$231,600 and a decrease of \$200,000, respectively.

Program Description

Ground-Water Protection -- The primary goals of the ground-water protection program are to provide national leadership and assistance to States in their efforts to protect and preserve ground-water resources; prevent contamination which may have an adverse affect on human health and the environment; provide EPA with a consistent policy framework which takes the use, value, and vulnerability of ground water into account; and advance technology transfer and training on ground-water protection and prevention issues. The primary means of achieving these goals is through implementation of EPA's Ground-Water Protection Strategy and the ground-water provisions in the 1986 amendments to the Safe Drinking Water Act (sections 1424[e] and 1428).

GROUND-WATER PROTECTION

1989 Program Request

The Agency requests a total of \$6,924,300 supported by 81.1 total workyears for this program, of which \$3,924,300 will be for the Salaries and Expenses appropriation and \$3,000,000 will be for the Abatement, Control and Compliance appropriation. This represents an increase of \$231,600 and a decrease of \$200,000, respectively, and no change in total workyears. The increase in Salaries and Expenses reflects increased personnel costs and the publication of technical assistance documents for use by the States in the development and implementation of their ground-water protection programs. The decrease in Abatement, Control and Compliance reflects the expected completion of a Congressionally mandated study on point and non-point pollution in the Spokane-Rathdrum Sole Source Aquifer.

In 1989, the Agency will continue to provide technical assistance to States in the area of wellhead protection and will, in particular, provide outreach and support efforts to those Indian tribes initiating wellhead protection activities. Section 1428 of SDWA requires that States develop a program to protect wells that supply public water systems from contaminants which may have an adverse effect on human health. Assisting the States in how to determine the parameters of a wellhead protection area as well as providing technical information on the wide variety of approaches to wellhead protection are central to EPA's collaborative role with the States in protecting ground-water resources which serve as public water supplies. EPA will also have the responsibility to assure that other Federal agencies are aware of and have the necessary information to comply with the States' requirements on wellhead protection activities, if the States choose to utilize the authority in the Safe Drinking Water Act (SDWA) Amendments of 1986. In addition, the Agency will coordinate the transmittal of mandated State reports on their wellhead protection efforts.

Major emphasis will be placed on State ground-water protection strategies in 1989. In addition to implementing their strategies, States will be concurrently

reviewing and refining their current strategy efforts to focus on the totality of their ground-water protection and cleanup concerns. The Agency will issue guidance on this comprehensive approach and will provide technical and financial assistance (through Clean Water Act (CWA) section 106 grants) to enable States to determine clearly the protection measures needed for their ground-water resources, particularly in relation to the uses of the resource. This comprehensive strategy will provide States with flexibility in setting priorities for their ground-water protection activities.

EPA will continue working to incorporate the classification guidelines for ground-water resources in all pertinent EPA programs, promoting this policy with States, and assisting States in the development and application of their own classification systems.

In 1989, the Agency will continue both to designate Sole Source Aquifers (SSAs) and to review projects financially assisted by the Federal government which may affect a designated SSA.

1988 Program

In 1988, the Agency is allocating a total of \$6,892,700 supported by 81.1 total workyears for this program, of which \$3,692,700 is for the Salaries and Expenses appropriation and \$3,200,000 is for the Abatement, Control and Compliance appropriation.

During 1988, the Agency will direct activities toward providing state-of-the-art knowledge and technological approaches in the area of wellhead protection. States are looking to EPA for expert advice and consultation on the methodologies and approaches to the hydrogeologic and other assessments pertinent to the delineation of Wellhead Protection Areas (WHPAs), a key feature of the WHP program. Direct EPA involvement in supporting States' efforts will be augmented by the development and publication of technical assistance documents on such WHP issues as contingency planning for alternative sources of water supplies, assessing and managing risk in WHPAs, and identifying and controlling for sources of contaminants in WHPAs. Training sessions for State and Indian tribe officials, initiated in 1987, will continue and will be expanded to include the technical aspects of wellhead protection.

The issuance of the ground-water classification guidelines is an important step in achieving a national focus on ground-water protection. Final ground-water classification guidelines will be issued in 1988 and will be implemented as Agency policy. The classification system will be incorporated into regulations, guidelines and policy statements of all Agency programs with ground-water elements and offers a consistent approach for determining ground-water protection and cleanup activities based on the use, value, and vulnerability of the resource. EPA will work with States which have ground-water classification systems to help determine the equivalence of the State systems to EPA's and the application of the State systems to Federal programs where appropriate, and will assist interested States in establishing similar/equivalent systems.

The Agency is continuing to assist States in developing and implementing ground-water protection strategies in order to achieve the goal of every State having a completed and comprehensive ground-water protection strategy in place and implementation in process by the end of 1988.

In 1988, the Agency will implement a ground-water repository system which has the capability to store, share, and analyze data collected by EPA, the States and private industry on the quality of ground water, as well as to be linked with other ground water related systems such as USGS. The data-sharing system, part of

the Agency's STORET system, will be used by States as well as Agency programs. Related to this activity is an endeavor to develop common data standards, formats, and guidance for ground-water data collection and storage for EPA programs with ground-water protection issues.

The Agency will continue to designate Sole Source Aquifers (SSAs) in 1988. It is estimated that the number of designated SSAs will increase to approximately 50 by the end of 1988.

The Agency, in conjunction with the appropriate State and local agencies, will also initiate a study to identify existing and potential point and non-point sources of pollution, as well as possible control measures, in the Spokane-Rathdrum Valley Aquifer in Washington and Idaho.

1987 Accomplishments

In 1987, the Agency obligated a total of \$5,621,100 supported by 61.7 total workyears for this program, of which \$2,887,600 was from the Salaries and Expenses appropriation and \$2,733,500 was from the Abatement, Control and Compliance appropriation.

In the 1986 SDWA Amendments, Congress established a new program which focuses direct attention on ground-water resources, particularly those which serve as drinking water supplies for public water systems. The legislative intent of the Wellhead Protection program is that it be a State-developed and State-administered program with the Federal government providing major technical assistance and support for State efforts. In fact, EPA was directed to issue guidances to assist States in the program by June 1987. Consequently, the Agency assembled workgroups composed of EPA, State, and local representatives, as well as other experts in the field of wellhead protection, to focus on programmatic and technical aspects of wellhead protection, including the delineation of wellhead protection areas (WHPAs). Guidance on the delineation of WHPAs was issued in accordance with its statutory deadline and has been acknowledged as a significant accomplishment in this new and emerging environmental concern. In addition, EPA issued guidance on the overall development of a Wellhead Protection program. These two documents provided the framework for a national program to train State, local and tribal officials in the WHP program during the summer of 1987.

Also in 1987, EPA implemented a streamlined process for reviewing petitions for the designation of Sole Source Aquifers. In 1987, the Agency completed review and approval procedures on 10 of these petitions. Furthermore, an interim rule on criteria for identifying and establishing critical aquifer protection areas was published in the Federal Register in accordance with the requirement in the SDWA Amendments of 1986.

In early 1987 the Agency issued draft ground-water classification guidelines which are being established as Agency policy. EPA continued to assist States in their ground-water program efforts, including the management of the CWA section 106 ground-water grants for the development and implementation of State ground-water protection strategies. By the end of 1987, approximately 31 States and Territories had developed and adopted strategies, and 23 States/Territories were in varying stages of completing their strategies.

ENVIRONMENTAL PROTECTION AGENCY

1989 Budget Estimate

Table of Contents

DRINKING WATER

Page

ENFORCEMENT

Drinking Water Enforcement..... DW-42

DRINKING WATER
Drinking Water Enforcement

		ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988

(DOLLARS IN THOUSANDS)							
PROGRAM							

Drinking Water Enforcement							
Salaries & Expenses		\$2,530.3	\$4,573.1	\$3,558.6	\$3,558.6	\$3,777.9	\$219.3
	TOTAL	\$2,530.3	\$4,573.1	\$3,558.6	\$3,558.6	\$3,777.9	\$219.3
TOTAL:							
Salaries & Expenses		\$2,530.3	\$4,573.1	\$3,558.6	\$3,558.6	\$3,777.9	\$219.3
	TOTAL	\$2,530.3	\$4,573.1	\$3,558.6	\$3,558.6	\$3,777.9	\$219.3
Drinking Water Enforcement	TOTAL	\$2,530.3	\$4,573.1	\$3,558.6	\$3,558.6	\$3,777.9	\$219.3
PERMANENT WORKYEARS							

Drinking Water Enforcement		57.8	90.7	90.7	84.4	90.7	6.3
TOTAL PERMANENT WORKYEARS		57.8	90.7	90.7	84.4	90.7	6.3
TOTAL WORKYEARS							

Drinking Water Enforcement		62.9	90.7	90.7	90.7	90.7	
TOTAL WORKYEARS		62.9	90.7	90.7	90.7	90.7	

DRINKING WATER

Drinking Water Enforcement

Budget Request

The Agency requests a total of \$3,777,900 supported by 90.7 total workyears for 1989, an increase of \$219,300 from 1988. All of the request is for the Salaries and Expenses appropriation.

Program Description

Drinking Water Enforcement-- The program ensures that the nation's Public Water Systems (PWSs) and Underground Injection Control (UIC) owners/operators comply with the provisions of the Safe Drinking Water Act (SDWA) in primacy as well as non-primacy States and on Indian Lands. The SDWA Amendments of 1986 call for EPA to develop more stringent standards and a host of revised regulations in order to protect public health and keep drinking water sources free from contamination. The effects of the revised regulations on the universe of public water systems are difficult to ascertain; however, the incidence of non-compliance is expected to increase, particularly among small systems that have limited capabilities and resources to meet the requirements. The drinking water program has therefore made substantial revisions to its compliance and implementation strategy to reduce non-compliance and eventually eliminate a significant number of PWS violations. The program will also implement a mobilization program which includes support from other Federal agencies, discussions with concerned members of the private sector (e.g. insurance agencies), public interest groups, and professional organizations such as the American Water Works Association (AWWA).

The definitions of significant non-compliers (SNCs) in the PWS and UIC programs have been revised to allow for a greater enforcement presence in cases where systems/wells posed the most serious threats to human health and the environment. The PWS Supervision program now incorporates chemical/radiological violations and violations of compliance schedules and the UIC program has expanded its definition to include all classes of injection wells.

DRINKING WATER ENFORCEMENT

1989 Program Request

The Agency requests a total of \$3,777,900 supported by 90.7 total workyears for this program, all of which will be for the Salaries and Expenses appropriation. This represents an increase of \$219,300 which reflects increased personnel costs.

1989 will mark an active year for enforcement actions due to the need to ensure compliance with new standards and monitoring requirements, and provisions for unregulated contaminant monitoring established in the 1986 Amendments.

Headquarters will help establish the criterion for "high risk" contaminant problems and support actions taken against Class V wells that have been identified as threatening to underground sources of drinking water (USDW). In addition, the program will continue to oversee the progress of civil enforcement cases including review of Regional enforcement referral documents and case files, and monitoring the progress of cases at the Department of Justice (DOJ) to ensure resolution after referral. The review of these cases will be facilitated through the use of the Administrative Order (AO) compliance tracking system which will monitor the status of Notices of Violation (NOVs), AOs and the corresponding activities related to enforcement actions. This tracking system will provide Headquarters with an

accurate inventory of cases, allow for a more consistent and documented information exchange between the Regions and Headquarters, and provide information for appropriate follow-up activities once enforcement actions are initiated.

The Regional offices will focus their resources to help systems in non-primacy States and Indian lands adapt to the host of new requirements and keep additional non-compliance rates to a minimum. These efforts will include the use of NOVs, compliance orders, and civil referrals to DOJ for more serious maximum contaminant level (MCL) violations. The programs will provide support for cases prepared by Regional Counsels and coordinate with other offices to present accurate and verifiable compliance information when necessary. An area of increased emphasis for the Regions will be to follow through to ensure that States take appropriate action to bring the SNCs into compliance, to avoid Regional enforcement actions against violators.

Class I UIC wells (waste disposal injections) will require increased attention in 1989 because of the continuing need to issue and reissue permits and because of the new monitoring regulation. Failure to apply for a permit, test for well mechanical integrity, or provide monitoring reports will provide sufficient grounds for Regional enforcement actions.

1988 Program

In 1988, the Agency is allocating a total of \$3,558,600 supported by 90.7 total workyears for this program, all of which is from the Salaries and Expenses appropriation.

A number of statutory requirements take effect in 1988 which are requiring the enforcement of public notification procedures, volatile organic contaminant (VOC) monitoring requirements, and monitoring for unregulated contaminants.

The Regional programs continue to issue AOs against violators of PWS and UIC program requirements to achieve compliance with regulations and standards set by the Agency. The issuance of AOs is the cornerstone of the enforcement program in establishing a Federal presence which will help minimize the number of violations EPA must address.

While attention is directed toward the SNCs, a thorough coverage of all violations is necessary. The Regional offices are concentrating on reducing the rate of non-compliance using their resources in the most efficient way possible and using experience gained in 1987 to initiate enforcement actions quickly and appropriately.

The implementation and utilization of the AO tracking system will help the program maintain a current inventory of the actions under enforcement considerations. The tracking system also helps to determine the status of the actions and the level of involvement needed by the Agency. The Regions are involved in assisting Regional Counsels with documentation concerning violations which require additional and more stringent enforcement actions and participating in activities related to civil enforcement referrals to the DOJ.

1987 Accomplishments

In 1987, the Agency obligated a total of \$2,530,300 supported by 62.9 total workyears for this program, all of which was from the Salaries and Expenses appropriation.

Numerous Administrative Orders were issued in this first year of commitment to reduce the universe of MCL violations. A number of achievements have contributed to the importance of the enforcement program including a precedent-setting AO

which required the abandonment of 1,388 wells and a series of AOs with Pennzoil Corporation to plug and abandon certain oil and gas production wells. The PWS program issued 184 enforcement actions against violators while the UIC program issued 107. The UIC program also produced the first successful criminal prosecution under the SDWA which received wide publicity for the conviction of a well owner who falsified test results.

1987 also marked the initiation of the timely and appropriate determination for States. The provisions of this initiative set out a timeframe and several enforcement actions which States should use to promote compliance among the water systems within their jurisdiction. Appropriate actions were defined in four categories: 1) State issuance of an Administrative Order, 2) referral to State Attorney General, 3) filing of a criminal case, or 4) establishing a bilateral agreement between the State and the violator which includes a compliance schedule. In the one-year period ending in March, 1986 there were over 1400 SNCs. Nine months later the States had addressed 482 of these. For the period ending August 30, 1986, the States had taken action on 357 of the 1,245 SNCs.

Statistics reflecting the efficiency of the timely and appropriate actions were encouraging, with 34% of all SNC systems resolved within the allowed timeframe. The states themselves were active in enforcement, taking a total of 313 enforcement actions in 1987.

ENVIRONMENTAL PROTECTION AGENCY

1989 Budget Estimate

Table of Contents

	<u>Page</u>
<u>HAZARDOUS WASTE</u>	<u>HW-1</u>
RESEARCH & DEVELOPMENT	
Hazardous Waste Research.....	HW-8
Scientific Assessment.....	HW-14
Monitoring Systems and Quality Assurance.....	HW-15
Health Effects.....	HW-16
Environmental Engineering and Technology.....	HW-17
Environmental Processes and Effects.....	HW-18
Integrated Hazardous Waste Research.....	HW-19
ABATEMENT & CONTROL	
Waste Management Regulations, Guidelines and Policies.....	HW-21
Regulations, Guidelines & Policies - Hazardous Waste.....	HW-25
RCRA Regulatory Program - Office of Air & Radiation.....	HW-27
RCRA Regulatory Program - Office of Water.....	HW-27
Regulations, Guidelines & Policies - Underground Storage Tanks...	HW-30
Financial Assistance.....	HW-32
Hazardous Waste Management Financial Assistance to States.....	HW-33
Hazardous Waste Initiative Grants.....	HW-35
Underground Storage Tanks State Grants.....	HW-36
Waste Management Strategies Implementation.....	HW-37
Hazardous Waste Management Regulatory Strategies Implementation..	HW-39
Emergency Planning/Community Right-to-know - Title III.....	HW 42
ENFORCEMENT	
Hazardous Waste Enforcement.....	HW-45

HAZARDOUS WASTE

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988

(DOLLARS IN THOUSANDS)						

APPROPRIATION						

Salaries & Expenses	\$66,980.7	\$74,312.4	\$72,737.0	\$72,737.0	\$73,769.6	\$1,032.6
Abatement Control and Compliance	\$154,240.8	\$149,255.8	\$159,968.0	\$155,976.9	\$161,493.8	\$5,516.9
Research & Development	\$35,179.5	\$30,737.2	\$30,121.2	\$30,391.2	\$27,164.2	-\$3,227.0
TOTAL, Hazardous Waste	\$256,401.0	\$254,305.4	\$262,826.2	\$259,105.1	\$262,427.6	\$3,322.5
PERMANENT WORKYEARS	1,360.9	1,374.1	1,415.8	1,386.2	1,402.9	16.7
TOTAL WORKYEARS	1,413.2	1,485.4	1,415.8	1,492.9	1,492.9	
OUTLAYS	\$251,921.7	\$241,089.1	\$226,907.9	\$243,412.2	\$251,030.4	\$7,618.2
AUTHORIZATION LEVELS	The Hazardous and Solid Waste Amendments of 1984 reauthorized this program at a level of \$249,529,000 for 1988. Reauthorization for 1989 is pending.					

HAZARDOUS WASTE

OVERVIEW AND STRATEGY

The Solid Waste Disposal Act as amended by the Resource Conservation and Recovery Act (RCRA) of 1976, and the Hazardous and Solid Waste Amendments (HSWA) of 1984, provides the legislative mandate for a nationwide program to safely and effectively manage hazardous wastes from generation through disposal.

This mandate can be achieved by developing and implementing a program that: establishes regulatory priorities by assessing the risk of different hazardous waste management activities; permits facilities that provide safe capacity; and closes those facilities that cannot operate in accordance with regulatory requirements. A highly visible compliance monitoring program, supported by timely and appropriate enforcement action against violators, will provide the credible deterrence that is needed to meet this mandate. Informing the public of these risk trade-offs will build an educated constituency that will be better able to understand and participate in the regulatory decision-making process.

Although the Agency has made substantial progress towards the major milestones established by HSWA, much yet remains to be accomplished to ensure that current and future waste management practices are, and continue to be, protective of human health and the environment.

A significant portion of the hazardous waste universe is not yet adequately defined or regulated. As additional handlers become regulated through HSWA, environmental contamination at many active, closed and underground storage tank (UST) facilities must be addressed through permitting and corrective action requirements. Regulations must be developed with increased emphasis on implementation and enforcement, and State permitting and enforcement capabilities must be augmented.

To address these areas, the Agency has developed a strategy that encompasses six major objectives. These are to: (1) implement strong State programs; (2) emphasize permitting of hazardous waste facilities; (3) strengthen compliance monitoring and enforcement; (4) develop new regulations and significantly improve existing regulations; (5) develop and implement a regulatory program for underground storage tanks; and (6) conduct research and development to support regulatory programs.

Implement Strong State Programs

Effective national management of hazardous wastes is dependent on a strong partnership between the States and the Federal government. An important prerequisite to that relationship is States' assumption of authorization for the HSWA provisions. To encourage HSWA authorization, EPA will work closely with the States to determine which State legislative and regulatory modifications are necessary for States to achieve equivalence with the Federal program. The States will continue to modify their authorities to incorporate the relevant HSWA provisions into their programs.

EPA will assist the States in upgrading their programs to meet new and modified Federal standards and by continuing to provide technical assistance, training, guidance, and financial support. The Agency and the States will continue to operate within the Interim National Criteria, which defines key factors and performance expectations for managing and evaluating the RCRA program. EPA will continue to manage and evaluate the State grant process and to coordinate the transition to the new RCRA information management system.

Emphasize Permitting of Hazardous Waste Facilities

Permitting activities are significantly affected by HSWA -- permits must incorporate applicable HSWA provisions -- resulting in a more extensive and complex permitting program at both the State and Federal levels. Requirements such as double liners, corrective action for prior releases, exposure assessments, and land disposal restriction provisions entail more extensive effort on each permit, particularly regarding corrective action of releases from solid waste management units.

In addition, permit modifications will become increasingly important, complex, and numerous as these new requirements go into effect, as corrective action requirements are further defined, and as facilities modify their processes to minimize waste or expand their capacity.

The Agency and the States will continue to jointly process and issue permits, with States preparing those portions of RCRA permits for which they are authorized, and EPA preparing those portions of the permits for which States are not yet authorized. The major permitting objectives include meeting the November 1988 deadline for permitting land disposal facilities and meeting the November 1989 deadline for permitting incineration facilities.

Strengthen Enforcement, Corrective Action and Compliance Monitoring

The Agency will develop enforcement strategies for new regulations, such as corrective action and new waste listings, and complete strategies for cross-media concerns, such as air emissions from RCRA facilities and municipal waste combustion. The Agency will provide training and technical assistance to the Regions and States for these new requirements, with particular emphasis in policy or precedent-setting areas, such as the new land disposal restriction or corrective action requirements.

Corrective action activities at operating and environmentally significant closing facilities will be expanded. Facilities requiring corrective action will be addressed through the most appropriate RCRA authority or through the use of Superfund enforcement and program authorities in selected instances. The Agency will continue to seek the owner/operators' cooperation in determining the nature and extent of contamination and in developing corrective action alternatives that reduce the potential for cleanup under Superfund, and to provide effective oversight for actions initiated.

As required by policy and statute, the Agency will continue to inspect land disposal and treatment and storage facilities to review their compliance with existing requirements, as well as new permit, closure, and corrective action requirements. In addition, significant generators will be inspected to ensure compliance with the new land ban regulations. Commercial facilities will also be inspected to ensure that off-site Superfund wastes will be managed in an environmentally safe manner. Program reviews, oversight inspections, and enforcement actions will be conducted in States when appropriate. The Agency will tie its enforcement efforts to those facilities that are deemed high-priority violators due to the type, the severity, and/or the frequency of violation and will initiate enforcement action in a timely and appropriate manner.

Develop New and Revise Existing Regulations

The Agency will develop new regulations and revise its existing regulations in order to maintain the protective integrity of the regulatory program in a dynamic, constantly changing national marketplace. Major emphasis will focus on further definition of the hazardous waste universe, predicated on a risk-based approach to determining what should or should not fall into various categories of regulation. Development of clear national standards for a strong State-implemented solid

(non-hazardous) waste management program will ensure that public health is protected in this important emerging area. The Agency will promulgate several major mandated regulations including rules requiring corrective action for releases of hazardous constituents from solid waste management units, location standards for new and existing hazardous waste facilities, and rules banning land disposal of untreated hazardous wastes for the second Third of listed wastes.

The Agency will enhance its efforts to address emerging solid waste management (Subtitle D) issues by serving as a national technical clearinghouse for solid waste information, research, options, and guidelines. The Agency will promulgate revised criteria and develop guidance for municipal solid waste landfills, collect information on industrial Subtitle D units and assist the States, which are responsible for implementing solid waste management programs. Work will also continue on municipal waste combustion ash, including conducting analyses and issuing guidance on ash management.

The Agency will continue development of a risk-based decision-making system that will serve as a basis for future regulation and policy development. This system will take into account site-specific and other unique considerations to capture those wastes that are potentially hazardous and exclude wastes that are not. Management standards will be reviewed to ensure a continuum of control that matches the degree of hazard posed by a waste to the stringency of regulations governing management of that waste. Activities toward this end will include revising hazardous waste lists based on concentration of toxic constituents.

Develop and Implement the UST Program

With the promulgation of the financial responsibility regulation for hazardous substance tanks in 1989, all major Federal regulations will be in place. However, regulatory efforts will still be required in the area of used oil tanks, bulk storage tanks, and a variety of individual sumps and reservoirs.

The Agency's objective is to encourage and support continual improvements in State UST programs. The thrust of the program will center on implementation of the prevention program by the States. The Agency will review and approve State program applications. The Agency will assist States in developing State program legislation, and alternative program funding mechanisms. In addition, the Agency will work together with the States to explore State trust funds to provide financial assurance in the absence of commercially available insurance.

The Agency will continue to provide practical support to the States and local governments, which are the implementors of this program. Technical studies in such areas as release detection and corrective action will continue. The results of these studies will be widely distributed in non-technical formats such as brochures and videotapes. The Agency will provide training and technical assistance to the States to assist them in their outreach to the more than 3,000 counties and the regulated community.

Conduct Research and Development to Support Hazardous Waste Regulatory Program

The Research and Development program will develop scientific and technical information to support hazardous waste regulatory development and implementation. Major thrusts include continued development of analytical methods to identify hazardous wastes and improved methods for monitoring of groundwater. Areas of continued research effort include: studies of contaminant behavior in groundwater to allow for improved evaluation approaches; identification and evaluation of alternatives to conventional means of disposing and destroying wastes; evaluation of controls for emissions from municipal waste combustors; and engineering studies to improve design, installation, corrective action and leak detection methods for underground storage tanks. Work will continue on waste minimization and risk assessments to support listing and waste-banning decisions. A risk assessment methodology for municipal waste combustors will be completed.

HAZARDOUS WASTE

<u>PROGRAM ACTIVITIES</u>	<u>Actual 1987</u>	<u>Budget Estimate 1988</u>	<u>Current Estimate 1988</u>	<u>Request 1989</u>	<u>Increase (+) Decrease (-) 1989 vs 1988</u>
<u>Regulations</u>					
RCRA Standards ⁺	<u>28</u>	<u>39</u>	<u>46</u>	<u>44</u>	<u>-2</u>
Proposals.....	19	14	27	22	-5
Promulgations.....	9	25	19	22	+3
Listings/Variances.....	<u>104</u>	<u>302</u>	<u>114</u>	<u>162</u>	<u>+48</u>
Listings.....	3	12	9	7	-2
Delisting Petition					
Review.....	95	95	25	25	--
Case-by-Case Extensions.....	5	40	20	10	-10
BDAT Variance Review.....	0	75	5	5	--
No Migration Petitions.....	1	80	30	50	+20
UIC Petition Reviews.....	*	**	25	65	+40
<u>Implementation</u>					
Guidances.....	31	27	45	29	-16
Reports to Congress.....	3	3	6	2	-4
State Authorizations:					
Base Program.....	42	49	44	47	+3
Non-HSWA Cluster I.....	4	**	33	9	-24
Non-HSWA Cluster II....	1	**	37	10	-27
Non-HSWA Cluster III...	1	**	10	21	+11
HSWA Cluster I.....	2	**	8	22	+14
Final Permit:					
Determinations.....	722	971	637	583	-54
(cumulative).....	2,757	3,836	3,394	3,977	+583
UIC Permit Revisions	*	**	50	150	+100
<u>Enforcement and Corrective Actions</u>					
Inspections.....	12,867	13,250	12,352	12,370	+18
Administrative Orders.....	1,386	1,700	1,595	1,641	+46
Civil Litigation.....	169	324	246	248	+2
Criminal Litigation.....	73	117	109	109	--
Corrective Action					
Facility Assessments.....	467	605	231	117	-114
Monitoring of Corrective					
Action Activities.....	73	**	248	336	+88
POTW Corrective Measures....	*	**	15	105	+90

+ Outputs for the Office of Water's Hazardous Waste Regulatory Development
Activities are not included

* Not reported in 1987

** Not reported in 1988

ENVIRONMENTAL PROTECTION AGENCY

1989 Budget Estimate

Table of Contents

	<u>Page</u>
<u>HAZARDOUS WASTE</u>	
RESEARCH & DEVELOPMENT	
Hazardous Waste Research.....	HW-8
Scientific Assessment.....	HW-14
Monitoring Systems and Quality Assurance.....	HW-15
Health Effects.....	HW-16
Environmental Engineering and Technology.....	HW-17
Environmental Processes and Effects.....	HW-18
Integrated Hazardous Waste Research.....	HW-19

HAZARDOUS WASTE
Hazardous Waste Research

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988
----- (DOLLARS IN THOUSANDS) -----						
PROGRAM -----						
Scientific Assessment - Hazardous Waste						
Salaries & Expenses	\$1,183.7	\$1,343.7	\$1,276.7	\$1,276.7	\$1,304.7	\$28.0
Research & Development	\$2,808.1	\$2,990.4	\$2,443.9	\$2,443.9	\$2,443.9	
TOTAL	\$3,991.8	\$4,334.1	\$3,720.6	\$3,720.6	\$3,748.6	\$28.0
Monitoring Systems & Quality Assurance - Hazardous Waste						
Salaries & Expenses	\$3,972.4	\$4,227.3	\$3,994.8	\$3,994.8	\$4,082.3	\$87.5
Research & Development	\$10,261.7	\$10,058.4	\$9,390.4	\$9,274.8	\$9,274.8	
TOTAL	\$14,234.1	\$14,285.7	\$13,385.2	\$13,269.6	\$13,357.1	\$87.5
Health Effects - Hazardous Waste						
Salaries & Expenses	\$646.4	\$713.6	\$682.2	\$682.2	\$697.1	\$14.9
Research & Development	\$1,805.8	\$1,908.5	\$964.0	\$950.2	\$950.2	
TOTAL	\$2,452.2	\$2,622.1	\$1,646.2	\$1,632.4	\$1,647.3	\$14.9
Environmental Engineering & Technology - Hazardous Waste						
Salaries & Expenses	\$5,302.6	\$5,711.6	\$5,157.3	\$5,157.3	\$4,810.7	-\$346.6
Research & Development	\$11,703.5	\$10,153.9	\$9,850.9	\$10,322.6	\$10,011.7	-\$310.9
TOTAL	\$17,006.1	\$15,865.5	\$15,008.2	\$15,479.9	\$14,822.4	-\$657.5
Environmental Processes & Effects - Hazardous Waste						
Salaries & Expenses	\$3,538.7	\$3,451.7	\$3,209.8	\$3,209.8	\$3,280.1	\$70.3
Research & Development	\$6,100.4	\$5,626.0	\$4,672.0	\$4,599.7	\$4,483.6	-\$116.1
TOTAL	\$9,639.1	\$9,077.7	\$7,881.8	\$7,809.5	\$7,763.7	-\$45.8

8-MH

HAZARDOUS WASTE

Hazardous Waste Research

Principal Outputs by Objective

Objective 1: Develop Data to Support the Use of Alternate Technologies

- 1989: • Technical Resource Document on the minimization and control of hazardous waste combustion by-products (Engineering)
 - Waste Minimization Audits Guidance Manual (Engineering)
 - Summary of performance of existing treatment systems for control of hazardous wastes banned from land disposal (Engineering)
- 1988: • Report on evaluation of innovative technology for the treatment of hazardous waste streams (Engineering)
 - Report on emerging chemical and biological treatment methods for halogenated aromatic chemical waste streams (Engineering)
- 1987: • Technical Resource Document for metals/cyanides, corrosives, and halogenated organics (Engineering)
 - Report on decontamination of PCB-bearing sediments (Engineering)

Objective 2: Develop and Evaluate Tests and Procedures for Conducting Risk Assessments

- 1989: • Health and Environmental Effects Documents (Sci. Assessment)
 - Uncertainty analysis in model selection criteria (Sci. Assessment)
 - Field validation of solute transport model for prediction of waste concentrations in groundwater (Envir. Processes)
 - Report on hydrolysis rate constants for enhancing property-reactivity correlations (Envir. Processes)
- 1988: • Health and Environmental Effects Documents (Sci. Assessments)
 - Risk Assessment Field Guide for RCRA (Sci. Assessment)
 - User's Manual for Metals-Speciation Model (MINTEQ) (Envir. Processes)
- 1987: • Health and Environmental Effects Profiles (Sci. Assessment)
 - Report on organic multimedia human exposure model (Envir. Processes)

Objective 3: Conduct the Assessment and Control Research Necessary to Address Dioxin

- 1989: • Report on plant uptake of dioxin (Envir. Processes)
- 1988: • Impact of pharmacokinetics on 2,3,7,8-TCDD exposure and risk assessments (Sci. Assessment)
 - Final Report on pharmacokinetics and immunotoxicity of 2,3,7,8-TCDD in rhesus monkeys (Sci. Assessment)
 - Report on ingestion of soil by children (Sci. Assessment)
 - Photodegradation evaluation of dioxins in soils (Envir. Processes)
- 1987: • Final Report on vapor-phase photolysis of 2,3,7,8-TCDD (Sci. Assessment)

Objective 4: Develop Procedures to Identify and Measure Chemicals in Wastes

- 1989: ° Evaluation of the proximity of Subtitle-D sites to wet environments (Monitoring)
- ° Development of automated expert systems for determining location standards for Subtitle-D facilities in wet environments (Monitoring)
- 1988: ° Guidance Document for determining monitoring methods for Subtitle-D sites in or near wet environments (Monitoring)
- 1987: ° Report on hazardous waste generator data and characteristics of sanitary landfills in Florida (Monitoring)

Objective 5: Develop Data to Support Implementation of Land Disposal Regulations

- 1989: ° Guidance Document for landfills (Envir. Engineering)
- ° Guidance Document for surface impoundments (Envir. Engineering)
- 1988: ° Expert System for evaluating RCRA closure plans (Envir. Engineering)
- 1987: ° Technical Resource Document: Design, construction and evaluation of clay liners for waste management facilities (Envir. Engineering)

Objective 6: Develop Data to Support Implementation of the Incineration Regulations

- 1989: ° Detailed methodology-risk assessment for incinerators (Sci. Assessment)
- ° Best Practices Manual for hazardous waste destruction in high temperature industrial processes (Envir. Engineering)
- 1988: ° Report on Vermont model incinerator/resource recovery facility assessment (Sci. Assessment)
- 1987: ° Interim report on assessment of health risks associated with exposure to municipal waste combustion emissions (Sci. Assessment)

Objective 7: Provide Quality Assurance Support to the Hazardous Waste Program

- 1989: ° Provide quality control samples for RCRA Appendix VIII chemicals (Monitoring)
- 1988: ° Annual Report on quality control samples program for RCRA (Monitoring)
- 1987: ° Annual Report on quality control samples program for RCRA (Monitoring)

Objective 8: Develop Procedures to Prevent and Contain Hazardous Releases

- 1989: ° Report on the evaluation of automatic product monitoring devices for underground storage tanks (Envir. Engineering)
- 1988: ° Report on results of long-term monitoring program at three UST sites (Monitoring)
- 1987: ° Report on available methods for detecting underground storage tank leaks (Monitoring)

HAZARDOUS WASTE

Hazardous Waste Research

Budget Request

The Agency requests a total of \$41,339,100 supported by 222.8 total workyears for 1989, a decrease of \$3,372,900 and a decrease of 8.1 total workyears from 1988. Of the request, \$14,174,900 will be for the Salaries and Expenses appropriation and \$27,164,200 will be for the Research and Development appropriation, decreases of \$145,900 and \$3,227,000 respectively.

Program Description

The Resource Conservation and Recovery Act (RCRA) authorizes a regulatory program to identify and manage wastes which pose a substantial hazard to human health or the environment. The Act also requires the promulgation of standards related to Underground Storage Tank systems for both chemicals and petroleum products. Research pursued in this program provides the scientific and engineering basis for characterizing wastes, determining the hazards they pose, and formulating controls. Section 311 of the Clean Water Act also mandates some of the research conducted under this program, specifically the hazardous materials release efforts. This program provides for research in conjunction with private industry to develop the scientific data necessary for preventing, controlling, cleaning up and disposing of hazardous material releases.

Objective 1: Develop Data to Support the Use of Alternative Technologies. This research supports implementation of RCRA provisions that require the banning of high hazard wastes from land disposal. The effectiveness of treatment alternatives and waste altering processes is being evaluated and performance parameters established.

Objective 2: Develop and Evaluate Tests and Procedures for Conducting Risk Assessments. This research will develop risk assessment methodologies, as well as actual risk assessments for use by decisionmakers regarding the listing/delisting of wastes and evaluation of exposure information contained in permit applications.

Objective 3: Conduct the Assessment and Control Research Necessary to Address Dioxin. This research evaluates the potential for human risk from dioxin in the environment. Research supporting this objective is intended to help the Agency assess and monitor the dioxin contamination problem and begin implementing procedures for addressing it.

Objective 4: Develop Procedures to Identify and Measure Chemicals in Wastes. This research develops and validates the analytical procedures and techniques required to characterize wastes for Sections 3001 and 3013 of RCRA. These procedures and techniques are used for listing and other regulatory decisions made by the Office of Solid Waste.

Objective 5: Develop Data to Support Implementation of the Land Disposal Regulations. This research effort provides support for permitting of land disposal and land treatment facilities as required by Section 3005 of RCRA. Support is also provided for land disposal closure requirements.

Objective 6: Develop Data to Support Implementation of the Incineration Regulations. This research evaluates laboratory, pilot and full-scale units to obtain performance data on a range of thermal treatment devices. In addition, municipal waste combustion processes are evaluated. Results are used by permitting officials to evaluate permit requests and to monitor for compliance with performance requirements.

Objective 7: Provide Quality Assurance Support to the Hazardous Waste Program. This activity provides a quality assurance program to ensure a scientific data base of known quality exist to support RCRA regulatory activities. The program includes a repository of calibration standards, reference materials and on-site evaluations of contractor laboratories.

Objective 8: Develop Procedures to Prevent and Contain Hazardous Releases. This research addresses requirements established by the Clean Water Act (CWA) §311 and RCRA's Underground Storage Tank (UST) program. Research assesses the most cost-effective technology and scientific techniques available to prevent and control releases of hazardous substances.

SCIENTIFIC ASSESSMENT

1989 Program Request

The Agency requests a total of \$3,748,600 supported by 23.1 total workyears for this program, of which \$1,304,700 will be for the Salaries and Expenses appropriation and \$2,443,900 will be for the Research and Development appropriation. This represents an increase of \$28,000 in the Salaries and Expenses appropriation and no change in the Research and Development appropriation or in total workyears. The increase in the Salaries and Expenses appropriation reflects a general enhancement of inhouse support for scientific assessment activities.

Develop and Evaluate Tests and Procedures for Conducting Risk Assessments. Health and environmental effects documents, reference doses, and technical evaluations will be provided to support the RCRA listing, permitting and land disposal restriction programs. A methodology for incorporating biomarkers data on dose and effects into risk assessments will be developed.

Conduct the Assessment and Control Research Necessary to Address Dioxin. Research questions identified in the 1987 review of earlier dioxin risk assessments will be investigated. Topics under consideration include additional work on reducing exposure uncertainties, evaluation of the extent of dioxin uptake, and determining the mechanism of dioxin interaction with target organs.

Develop Data to Support Implementation of the Incineration Regulations. A comprehensive risk assessment methodology for evaluating health risks from municipal waste incineration will be completed. This methodology will ensure consistency among existing approaches to assessing potential risks from incineration.

1988 Program

In 1988, the Agency is allocating a total of \$3,720,600 supported by 23.1 total workyears for this program, of which \$1,276,700 is from the Salaries and Expenses appropriation and \$2,443,900 is from the Research and Development appropriation. In 1988, the program is emphasizing production of health and environmental effects documents for the listing/delisting programs and reference doses for the land disposal restriction program. Work is continuing on the determination of patterns of soil ingestion in children for use in exposure assessments, and a comprehensive risk assessment methodology to be used in evaluating risks from municipal incineration is being developed to permit assessment of potential risks from this disposal practice. The program will continue its assessment of a model municipal waste combustor which was initiated during 1987.

1987 Accomplishments

In 1987, the Agency obligated a total of \$3,991,800 supported by 22.3 total workyears for this program, of which \$1,183,700 was from the Salaries and Expenses appropriation and \$2,808,100 was from the Research and Development appropriation. The 1987 program emphasized preparation of health and environmental effects documents, reference doses, and carcinogenicity profiles. Six exposure information reports were reviewed and assistance on health/exposure assessment was provided to workgroups and the permit assistance team. An assessment of a model municipal waste combustor was initiated.

MONITORING SYSTEMS AND QUALITY ASSURANCE

1989 Program Request

The Agency requests a total of \$13,357,100 supported by 47.8 total workyears for this program, of which \$4,082,300 will be for the Salaries and Expenses appropriation and \$9,274,800 will be for the Research and Development appropriation. This represents an increase of \$87,500 in the Salaries and Expenses appropriation and no change in the Research and Development appropriation or in total workyears. The increase in the Salaries and Expenses appropriation reflects a general enhancement of inhouse support to evaluate methods to analyze hazardous chemicals in wastes.

Develop Procedures to Identify and Measure Chemicals in Wastes. Research in this program will provide validation of analytical methods and fill gaps or replace SW-846 methods that show deficiencies in accuracy, precision or repeatability. These SW-846 methods are used to determine the chemical composition of wastes, detect trace levels of toxic constituents, and rapidly screen for hazardous constituents. Automated methods for subsurface monitoring will be developed and evaluated for their ability to detect and track waste plume migration toward and into groundwater. An expert system will be developed for use in evaluating Subtitle-D facility locations. Remote sensing will be provided to assist permit writers. New monitoring methods will be developed for incinerator emissions, biodegraded/chemically altered components of landfill leachates, and subsurface monitoring for soil gases.

Provide Quality Assurance Support to the Hazardous Waste Program. Samples and reference materials of wastes will be furnished to laboratories to standardize monitoring methods and for calibration of RCRA analytical techniques.

Develop Procedures to Prevent and Contain Hazardous Releases. Remote sensing will be provided to the Regions for monitoring spills and spill threats under emergency conditions in support of §311 of the Clean Water Act. In addition, leak monitoring methods outside underground storage tanks will be evaluated in support of leak prevention and corrective action. This activity will include evaluation of leak monitoring methods to establish which existing instrumentation meets established performance criteria.

1988 Program

In 1988, the Agency is allocating a total of \$13,269,600 supported by 47.8 total workyears for this program, of which \$3,994,800 is from the Salaries and Expenses appropriation and \$9,274,800 is from the Research and Development appropriation. Resources in 1988 are supporting RCRA requirements to determine waste composition, to detect levels of toxic constituents in groundwater and in the air, and to characterize hazardous constituents through the evaluation, validation, and development of new protocols and methods for SW-846. Monitoring methods are being evaluated and developed for use at Subtitle-D landfills in wet environments and fractured zones. Aerial photography is also being provided to assist in the

assessment and mitigation of spills from facilities engaged in production, storage, processing, and distribution of hazardous materials. Performance criteria for evaluating leak monitoring methods are being established and available techniques for conducting external leak monitoring from underground storage tanks are being evaluated.

1987 Accomplishments

In 1987, the Agency obligated a total of \$14,234,100 supported by 51.3 total workyears for this program, of which \$3,972,400 was from the Salaries and Expenses appropriation and \$10,261,700 was from the Research and Development appropriation. During 1987, monitoring methods to detect hazardous constituents in groundwater, air, and soils were developed, evaluated, and validated. Generic methods for analysis of compounds containing hazardous constituents were developed. Advanced analytical methods for waste detection were under development. Biological procedures were evaluated as possible analytical screening techniques. Over 40,000 quality control check samples and more than 25,000 organic calibration standards were distributed to RCRA laboratories. All contractor laboratories were evaluated.

HEALTH EFFECTS

1989 Program Request

The Agency requests a total of \$1,647,300 supported by 12.0 total workyears for this program, of which \$697,100 will be for the Salaries and Expenses appropriation and \$950,200 will be for the Research and Development appropriation. This represents an increase of \$14,900 in the Salaries and Expenses appropriation and no change in the Research and Development appropriation or total workyears. The increase in the Salaries and Expenses appropriation reflects a general enhancement of inhouse support for this program.

Develop Data to Support Implementation of the Incineration Regulations. This research will provide methods and health effects data on municipal and hazardous waste combustion emissions and residual complex mixtures to assist in the assessment of potential human health risks. Combustion control technologies will be assessed using biological potency methods to evaluate comparative hazard potential.

1988 Program

In 1988, the Agency is allocating a total of \$1,632,400 supported by 12.0 total workyears for this program, of which \$682,200 is from the Salaries and Expenses appropriation and \$950,200 is from the Research and Development appropriation. This research is assessing the potential for health effects from air emissions and residues from incinerators using various bioassay procedures. Health endpoints being considered include genotoxicity, pulmonary toxicology, and other major target organ effects. The 1988 health effects program reflects a substantial resource reduction from the 1987 level because of a shift from the development of toxicity screens for hazardous waste characterization to support for a systematic program to reduce the uncertainty in risk assessments and to support a program focused on health effects associated with waste incineration.

1987 Accomplishments

In 1987, the Agency obligated a total of \$2,452,200 supported by 12.2 total workyears for this program, of which \$646,400 was from the Salaries and Expenses appropriation and \$1,805,800 was from the Research and Development appropriation. A screening protocol for waste toxicity was completed and an incineration health effects program was initiated with the mutagenicity testing completed on 15 samples from 6 hazardous waste incinerators.

ENVIRONMENTAL ENGINEERING AND TECHNOLOGY

1989 Program Request

The Agency requests a total of \$14,822,400 supported by 84.8 total workyears for this program, of which \$4,810,700 will be for the Salaries and Expenses appropriation and \$10,011,700 will be for the Research and Development appropriation. This represents decreases of \$346,600 and \$310,900 respectively, and a decrease of 8.1 total workyears. The decrease in these appropriations reflects the phasing down of engineering evaluations for Best Demonstrated Applicable Technology (BDAT) in support of the land disposal restriction program. The workyear decrease reflects an Agency initiative to shift some Hazardous Waste engineering personnel to the Superfund Innovative Technology Evaluation (SITE) program.

Develop Data to Support the Use of Alternative Technologies. This research will evaluate emerging alternative treatment processes for priority wastes likely to be restricted from land disposal. Efforts in support of waste minimization will provide the technical foundation for furthering the acceptance of technologies that reduce the generation of hazardous waste. Technical Resource Documents will be produced for use by State and Regional personnel and a summary report on the performance evaluation program from inception to date will be prepared.

Develop Data to Support Implementation of the Land Disposal Regulations. Major issues associated with disposal of hazardous waste to the land will be addressed including construction quality assurance, liner leachate collection systems, computerized expert systems, municipal solid waste disposal pollution potential, air emissions from treatment, storage, and disposal facilities and research in support of land disposal facility closure.

Develop Data to Support Implementation of the Incineration Regulations. This program will provide performance assessments of various thermal destruction systems tested at pilot- and full-scale. Information will be provided for both industrial processes and incinerators to support regulation of toxic metal emissions and emission of products of incomplete combustion. Methods will be developed for predicting and avoiding intermittent operating conditions that result in process failure and the inability to meet established performance standards. An evaluation of new municipal waste incinerators will be completed.

Develop Procedures to Prevent and Contain Hazardous Releases. Underground storage tank research will result in publications on prevention practices, assessment of retrofit technologies for leaking underground tanks, identification and evaluation of reliable leak detection methods for chemical underground tanks, and improvement of emergency response and remedial corrective action technologies.

1988 Program

In 1988, the Agency is allocating a total of \$15,479,900 supported by 92.9 total workyears for this program, of which \$5,157,300 is from the Salaries and Expenses appropriation and \$10,322,600 is from the Research and Development appropriation. Activities in 1988 include performance evaluations for alternatives to land disposal of wastes, investigating major land disposal issues, and conducting performance evaluation for thermal destruction systems. Existing technologies for detecting leaks from petroleum and chemical tank systems are being evaluated and improved methods are being designed.

1987 Accomplishments

In 1987, the Agency obligated a total of \$17,006,100 supported by 98.5 total workyears for this program, of which \$5,302,600 was from the Salaries and Expenses

appropriation and \$11,703,500 was from the Research and Development appropriation. The 1987 program produced performance evaluations of treatment processes to establish BDAT for wastes under review for restriction from land disposal. Waste minimization opportunity audits were conducted at four facilities, research continued on chemical and biological processes for waste destruction (field testing and laboratory testing both), information was provided on compacted solid liners and flexible membrane liners, and data were produced to support rulemaking on industrial boilers that burn hazardous waste. A report on standard dispersant effectiveness testing was completed and a new method for determining the effectiveness of chemical dispersants for controlling floating hazardous materials was developed.

ENVIRONMENTAL PROCESSES AND EFFECTS

1989 Program Request

The Agency requests a total of \$7,763,700 supported by 55.1 total workyears for this program, of which \$3,280,100 will be for the Salaries and Expenses appropriation and \$4,483,600 will be for the Research and Development appropriation. This represents an increase of \$70,300 and a decrease of \$116,100 respectively, and no change in total workyears. The increase in Salaries and Expenses appropriation reflects a general enhancement of inhouse support for this program. The decrease in the Research and Development appropriation reflects a shift of some extramural research to the inhouse research program.

Develop and Evaluate Procedures for Conducting Risk Assessments. Research on multimedia site assessment models in support of hazardous waste listing and delisting activities, methods for risk characterization of complex wastes, and methods for predicting subsurface contamination will be undertaken. Complex mixtures will be emphasized and a transport model for predicting waste concentrations in groundwater will be field evaluated.

Conduct the Assessment and Control Research Necessary to Address Dioxin. This research will study the extent of dioxin uptake by plants. Emphasis will be placed on defining the conditions under which plant uptake could be a problem in the food chain.

Develop Procedures to Prevent and Contain Hazardous Releases. Further improvement of the bioassessment protocol will occur. This protocol can be used by the program office to test samples collected at spills and hazardous waste sites to determine if they are bioavailable or toxic to aquatic and terrestrial organisms.

1988 Program

In 1988, the Agency is allocating a total of \$7,809,500 supported by 55.1 total workyears for this program, of which \$3,209,800 is from the Salaries and Expenses appropriation and \$4,599,700 is from the Research and Development appropriation. This research supports the listing, delisting, risk assessment, siting, and land disposal restriction programs by providing multimedia assessment methods and data. Laboratory experiments are being conducted to determine plant uptake of dioxin. The multimedia bioassessment screening protocol used in evaluating damage caused by spills and risks potentially associated with waste sites is being revised based on the results of field evaluations. In addition, various studies are being conducted on subsurface characteristics contributing to heavy metal contamination of groundwater, on evaluation of immiscible flow processes controlling contaminant transport in groundwater, and on validation of existing saturated and unsaturated zone contaminant transport models are being conducted.

1987 Accomplishments

In 1987, the Agency obligated a total of \$9,639,100 supported by 48.2 total workyears for this program, of which \$3,538,700 was from the Salaries and Expenses appropriation and \$6,100,400 was from the Research and Development appropriation. During 1987 the program completed the final version of a methodology to allow the pollution potential of any hydrogeologic setting to be evaluated. A seminar was conducted on transport and fate of contaminants in the subsurface, a user's manual was prepared on the quantitative geochemical model for predicting the equilibrium behavior of metal species in a variety of environments, and research studies indicated that in situ bioremediation has the potential for remediation of aquifers contaminated by leaking underground storage tanks.

INTEGRATED HAZARDOUS WASTE RESEARCH

1989 Program Request

The Agency requests no resources for this activity in 1989. Having funded the Center for Environmental Management at Tufts University since 1983, the Agency feels this Center is now fully established and should seek continued funding on a competitive basis. Other sources of funding are available from the private sector as well as from other government sources.

1988 Program

In 1988, the Agency is allocating a total of \$2,800,000 supported by no work-years for this program, all of which is from the Research and Development appropriation. This program provides research funding to the Center for Environmental Management located at Tufts University. The Tufts program is addressing a wide variety of research and public policy issues including alternative technologies, public perceptions associated with disposal facilities, development of programs for public education, health effects, risk communication, waste minimization, and alternatives to whole animal testing.

1987 Accomplishments

In 1987, the Agency obligated a total of \$2,500,000 for this program from the Research and Development appropriation. These resources were used to fund research on health effects, monitoring systems, alternative technologies, and risk communication research projects. Several new health effects projects were initiated.

ENVIRONMENTAL PROTECTION AGENCY

1989 Budget Estimate

Table of Contents

	<u>Page</u>
<u>HAZARDOUS WASTE</u>	
ABATEMENT & CONTROL	
Waste Management Regulations, Guidelines and Policies.....	HW-21
Regulations, Guidelines & Policies - Hazardous Waste.....	HW-25
RCRA Regulatory Program - Office of Air & Radiation.....	HW-27
RCRA Regulatory Program - Office of Water.....	HW-27
Regulations, Guidelines & Policies - Underground Storage Tanks...	HW-30
Financial Assistance.....	HW-32
Hazardous Waste Management Financial Assistance to States.....	HW-33
Hazardous Waste Initiative Grants.....	HW-35
Underground Storage Tanks State Grants.....	HW-36
Waste Management Strategies Implementation.....	HW-37
Hazardous Waste Management Regulatory Strategies Implementation..	HW-39
Emergency Planning/Community Right-to-know - Title III.....	HW 42

HAZARDOUS WASTE
Waste Management Regulations, Guidelines & Policies

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988
----- (DOLLARS IN THOUSANDS) -----						
PROGRAM -----						
Regulations, Guidelines & Policies-Hazardous Waste						
Salaries & Expenses	\$15,506.2	\$15,689.7	\$15,926.5	\$15,926.5	\$15,811.2	-\$115.3
Abatement Control and Compliance	\$42,048.8	\$37,791.0	\$40,267.2	\$39,801.9	\$41,386.0	\$1,584.1
TOTAL	\$57,555.0	\$53,480.7	\$56,193.7	\$55,728.4	\$57,197.2	\$1,468.8
RCRA Regulatory Program - Office of Air and Radiation						
Salaries & Expenses	\$555.1	\$638.5	\$621.4	\$621.4	\$627.6	\$6.2
Abatement Control and Compliance	\$2,943.9	\$3,265.0	\$3,265.0	\$3,265.0	\$3,265.0	
TOTAL	\$3,499.0	\$3,903.5	\$3,886.4	\$3,886.4	\$3,892.6	\$6.2
RCRA Regulatory Program - Office of Water						
Salaries & Expenses	\$1,741.2	\$2,708.0	\$2,489.8	\$2,489.8	\$2,646.7	\$156.9
Abatement Control and Compliance	\$6,062.4	\$5,325.0	\$5,325.0	\$4,585.0	\$5,325.0	\$740.0
TOTAL	\$7,803.6	\$8,033.0	\$7,814.8	\$7,074.8	\$7,971.7	\$896.9
Regulations, Guidelines and Policies - UST						
Salaries & Expenses	\$1,867.7	\$3,603.9	\$3,506.3	\$3,506.3	\$3,550.7	\$44.4
Abatement Control and Compliance	\$9,886.3	\$5,200.0	\$5,200.0	\$4,650.0	\$4,200.0	-\$450.0
TOTAL	\$11,754.0	\$8,803.9	\$8,706.3	\$8,156.3	\$7,750.7	-\$405.6

HAZARDOUS WASTE

Waste Management Regulations, Guidelines, and Policies

Budget Request

The Agency requests a total of \$76,812,200 supported by 377 total workyears for 1989, an increase of \$1,966,300 and a decrease of 4.5 total workyears from 1988. Of the request, \$22,636,200 will be for the Salaries and Expenses appropriation and \$54,176,000 will be for the Abatement, Control, and Compliance appropriation, increases of \$92,200 and \$1,874,100, respectively.

Program Description

The program areas under this subactivity are:

Regulations, Guidelines, and Policies - Hazardous Waste -- This program provides national direction for the Hazardous Waste management program under the Resource Conservation and Recovery Act (RCRA) of 1976, including the Hazardous and Solid Waste Amendments (HSWA) of 1984. Activities include promulgating and refining regulations for the identification, tracking, management and disposal of hazardous wastes; providing national oversight and guidance for implementing consistent State and Regional hazardous waste permitting programs; conducting technical studies, regulatory impact analyses and economic analyses; and assessing control options and technologies necessary for regulatory decision-making.

RCRA Regulatory Program - Office of Air and Radiation -- The major objective of this program is setting air emission standards as required by HSWA for area sources at hazardous waste treatment, storage, and disposal facilities (TSDFs). These regulations will protect public health from previously unregulated sources of toxic air pollutants and volatile organic compounds (VOCs). TSDFs are a potentially large source of emissions for which virtually no Federal or State air regulations exist because of the complex nature of the source category, a lack of technical data, and a lack of demonstrated control systems.

RCRA Regulatory Program - Office of Water -- This program provides support for implementation of HSWA requirements that have an impact on the Water Quality and Drinking Water programs. The Office of Water has lead responsibility for review of disposal of hazardous waste into injection wells; a study, regulation revisions, and corrective action requirements to address hazardous waste in publicly-owned treatment works (POTWs); a study of the impact on groundwater from wastewater treatment lagoons; and rules and waivers for retrofitting surface impoundments.

Regulations, Guidelines, and Policies - Underground Storage Tanks (UST) -- This program has responsibility for implementing Subtitle I of HSWA. The objective of the Subtitle I program is to control and prevent leakage from underground storage tanks through developing and implementing a comprehensive regulatory program. Activities include promulgating regulations and corrective action standards; developing compliance and enforcement strategies; issuing policy and technical guidance; and providing training, technical and administrative support to the States in the development of State UST programs.

REGULATIONS, GUIDELINES AND POLICIES -- HAZARDOUS WASTE

1989 Program Request

The Agency requests a total of \$57,197,200 supported by 234.1 total workyears for this program, of which \$15,811,200 will be for the Salaries and Expenses appropriation and \$41,386,000 will be for the Abatement, Control, and Compliance appropriation. This represents a decrease of \$115,300 and an increase of \$1,584,100, respectively, and a decrease of 4.5 total workyears from 1988 levels. The decreases reflect the completion of regulations in 1988. The increase will support Subtitle D regulatory efforts for municipal landfills and mining waste programs.

Several major regulations mandated by HSWA will be promulgated in 1989, including rules requiring corrective action for releases of hazardous waste from solid waste management units and location standards for new and existing hazardous waste facilities. The Agency will continue work on banning untreated hazardous wastes from land disposal by promulgating rules on the second Third of wastes listed under Section 3001 and proposing rules on the last Third. The Agency will investigate national capacity for hazardous waste storage, treatment, and disposal and will develop incentives for increased capacity to avoid shortages as the land disposal restrictions come into effect.

The Agency will develop guidance on the implementation of new corrective action regulations and incineration rules which will deal with currently unaddressed metals emissions and products of incomplete combustion. Training programs on corrective measures will be developed, workshops will be conducted to assist State and Regional permit writers, and Permit Assistance Teams will continue providing technical assistance to Regions and States. The Agency will provide oversight and guidance to facilitate State authorizations for new HSWA requirements and revisions to the base program. The Agency will continue to process delisting petitions and variance requests that require regulatory revisions or national policy determinations, such as petitions requesting variances from land disposal restrictions.

The Agency will continue development of a risk-based decision-making system that will, to a greater extent than in the past, take into account site-specific and other unique considerations to capture those wastes that are potentially hazardous and exclude wastes that are not. Management standards will be reviewed to ensure a continuum of control that matches the degree of hazard posed by a waste to the stringency of regulations governing management of that waste. The Agency will continue revisions of the hazardous waste list based on concentration of toxic constituents by promulgating rules "relisting" two groups of the highest priority listed wastes. Mining waste management standards will be promulgated under Subtitle D, and will be the first such tailored program for Section 8002 large volume wastes. The Agency will similarly address oil and gas production wastes and utility wastes based on the findings of Reports to Congress submitted in 1988 and on subsequent regulatory determinations.

1988 Program

In 1988, the Agency is allocating a total of \$55,728,400 supported by 238.6 total workyears for this program, of which \$15,926,500 is from the Salaries and Expenses appropriation and \$39,801,900 is from the Abatement, Control, and Compliance appropriation.

The Agency is continuing to develop and implement HSWA and pre-HSWA rules. Major HSWA-mandated activities in 1988 include criteria revisions for municipal solid waste landfills, double liner and leachate collection and containerized liquids regulation development. Restrictions on the land disposal of hazardous wastes are a high priority, with promulgation of the first Third of listed wastes

and a proposal for treatment standards for the second Third of wastes planned for 1988. Improvements to the current hazardous waste management program are underway, with regulations for permit modifications, experimental unit permitting, expansions to facilities under interim status, and mobile treatment unit permitting expected in 1988. The Agency is developing regulations amending statistical methods for groundwater monitoring, as well as expanding the options available to the regulated community for demonstrating financial responsibility in the event of the need for corrective action due to releases of hazardous waste into the environment. Work continues on investigating the scope of, and developing management standards for large volume wastes. Reports to Congress on oil and gas production wastes and utility wastes will be developed, to be followed by determinations of the regulatory status of those wastes. The Agency is developing tailored standards under Subtitle D for mining wastes.

Implementation efforts are a high priority in 1988. The Agency is developing guidance on location of hazardous waste facilities, corrective measures, landfill alternative closure, and liability coverage mechanisms. Outreach to the public on existing regulations and effective waste management practices is increasing. Wide distribution of public information brochures on waste minimization will help to decrease the amount of hazardous waste entering the waste management system and to reduce overall costs incurred in managing waste. The Agency is continuing to oversee and encourage authorization of States to implement new HSWA requirements.

The Agency expects an increase in the number of requests for variances from land disposal restriction requirements as the restrictions come into effect, and will process these petitions as necessary. The Agency continues to process petitions to delist hazardous wastes based on site-specific considerations.

1987 Accomplishments

In 1987, the Agency obligated a total of \$57,555,000 supported by 247.4 total workyears for this program, of which \$15,506,200 was from the Salaries and Expenses appropriation and \$42,048,800 was from the Abatement, Control, and Compliance appropriation.

The Agency continued development of HSWA regulations. In the land disposal restriction program, the solvents and dioxins rule was promulgated, as was the rule setting treatment standards for California List wastes. Regulations governing the permitting of miscellaneous units (Subpart X) were proposed. Other proposals included the waste-as-fuel, liner/leak detection, and containerized liquids rules. Several proposed rules amending permitting regulations were developed, including rules for mobile treatment unit permitting, interim status expansions, schedules of compliance, and rules for major and minor permit modifications. The Agency completed Reports to Congress on municipal waste combustion and hazardous waste minimization.

The Agency developed guidance for State and Regional permit writers, as well as for regulated industry and the public, in order to clarify Agency policy and to provide technical assistance on regulations. These implementation efforts included development of the Alternate Concentration Limits guidance, the RCRA Facility Assessment guidance, and the National Corrective Action strategy, as well as publication of guidance on secondary containment requirements for hazardous waste tanks. The Agency met the HSWA deadline for resolving outstanding delisting petitions. Permit Assistance Teams assisted permit writers in the field to expedite and improve the quality of permits issued.

RCRA REGULATORY PROGRAM - OFFICE OF AIR AND RADIATION

1989 Program Request

The Agency requests a total of \$3,892,600 supported by 13.0 total workyears for this program, of which \$627,600 will be for the Salaries and Expenses appropriation and \$3,265,000 will be for the Abatement, Control, and Compliance appropriation. This represents an increase of \$6,200 in the Salaries and Expenses appropriation, no change in the Abatement, Control, and Compliance appropriation, and no change in total workyears. The increase will provide additional funds for operating and support costs.

In 1989 the program will continue to support the proposal of regulations for area source types of hazardous waste TSDFs. This will include an assessment of the nature and quantities of emissions for TSDFs, development of emission modeling and testing methods, assessment of public health risks, evaluation of emission control techniques and economic analyses. As a result of these efforts, the Agency expects to propose final rules to control emissions for seven types of TSDF area sources: landfills, surface impoundments, land treatment, containers, waste piles, storage tanks, and transfer operations.

1988 Program

The Agency is allocating a total of \$3,886,400 supported by 13.0 total workyears for this program, of which \$621,400 is from the Salaries and Expenses appropriation and \$3,265,000 is from the Abatement, Control, and Compliance appropriation.

In 1988 efforts are continuing on the development of air emission regulations for TSDF area sources. Proposed regulations are being developed for the seven TSDF source types listed above.

1987 Accomplishments

In 1987 the Agency obligated a total of \$3,499,000 supported by 11.6 total workyears for this program, of which \$555,100 was from the Salaries and Expenses appropriation and \$2,943,900 was from the Abatement, Control, and Compliance appropriation.

In 1987 efforts continued on the development of air emission regulations for TSDF area sources.

RCRA REGULATORY PROGRAM - OFFICE OF WATER

1989 Program Request

The Agency requests a total of \$7,971,700 supported by 62.3 total workyears for this program, of which \$2,646,700 is for the Salaries and Expenses appropriation and \$5,325,000 is for the Abatement, Control, and Compliance appropriation. This represents increases of \$156,900 and \$740,000, respectively, and no change in total workyears from 1988. The increase in Salaries and Expenses reflects increased operating costs. The increase in Abatement, Control, and Compliance reflects the Office of Drinking Water's (ODW) and the Office of Municipal Pollution Control's (OMPC) need to provide support to States and Regions in the review of petitions for exemptions to the ban on untreated hazardous waste disposal.

During 1989, EPA Headquarters will propose regulations for the pharmaceuticals industry, which will improve controls on toxic pollutants, hazardous wastes, and hazardous constituents. Technical guidance for the textiles and timber Domestic Sewage Study industries will be published. Regulations development will continue on the equipment manufacturing and rebuilding industry and will be initiated on the hazardous waste treaters industry. Information collection on the transportation industry will resume in 1989. Sludge use and disposal screening for RCRA constituents will continue. The sewer exfiltration study will be completed. The Regions will develop new local limits to address hazardous pollutants and will increase the number of spill prevention plans initiated. The Regions will also increase the enforcement of new regulations for hazardous pollutants. EPA and States will continue to implement changes to the general and specific prohibition of the pretreatment regulations.

EPA and States will continue to implement the corrective action requirement for POTWs that accept hazardous waste. EPA will follow up on the original survey with a supplemental Section 3007 POTW survey. Headquarters will provide guidance and training on remedial investigations, corrective measures and permitting modifications to ensure that POTWs comply with RCRA reporting and permit-by-rule requirements. EPA and States will collect and analyze data submitted by POTWs, and the Regions will undertake or oversee necessary facility assessments, conduct visual site inspections and sampling visits, and implement remedial investigations and corrective measures at appropriate POTWs. There will be an increase in permit modifications incorporating corrective action requirements.

EPA and the States will continue implementation of corrective action requirements for Class I Underground Injection Control (UIC) wells to comply with Section 3004(u) of RCRA. Work will continue on site and remedial investigations. Compliance with permit conditions will be monitored to ensure that facilities which were placed on schedules for corrective action are complying with the requirements.

Pursuant to Sections 3004(f) and (g), petitions will continue to be reviewed from operators who want to continue inspecting banned wastes. Any necessary UIC permit modifications required to implement the land ban provisions will also be reviewed.

1988 Program

In 1988, the Agency is allocating a total of \$7,074,800 supported by 62.3 total workyears for this program, of which \$2,489,800 is from the Salaries and Expenses appropriation and \$4,585,000 is from the Abatement, Control, and Compliance appropriation.

During 1988, some changes are being promulgated to the National Pollutant Discharge Elimination System (NPDES) and general pretreatment regulations due to the Domestic Sewage Study. The Regions are also implementing regulatory changes, requiring additional discharge prohibitions and spill prevention plans. Guidance is being developed to implement and enforce both these changes and local limits for hazardous pollutants. Specific regulatory development is underway on two industries. Information sampling of ten Domestic Sewage Study industries is continuing and decision documents are being prepared, along with regulations or guidance, as appropriate. Sludge disposal and use screening for RCRA constituents are continuing and regulations are being developed.

Where necessary, Headquarters will work with Regions and States to assess double liner requirements and/or assess compliance with these requirements. RCRA requires interim-status surface impoundments to comply with requirements for double liner, leachate collection systems and groundwater monitoring. Waivers to these requirements can be requested.

The Regions will screen and evaluate double liner exemption applications as they are submitted to determine if the facilities are engaged in "aggressive biological treatment" and are in compliance with permits. Petitions are being reviewed to reopen permits. NPDES permits are being modified where applications are denied or where facilities are required to double line existing surface impoundments. Enforcement is increasing where permittees are in non-compliance with NPDES permits due to new RCRA double liner or other requirements.

Headquarters is developing procedural guidance and providing training to Regions and States on data collection and evaluation and on implementing corrective action requirements for any release of hazardous waste material from a solid waste management unit. Training is being provided to Regions and authorized States on RCRA permit-by-rule requirements and, for POTWs that receive hazardous waste, the Regions are emphasizing implementation of these permit requests. POTWs are being screened to identify those which receive hazardous waste by dedicated pipe, truck or rail. EPA is issuing RIDER permits for corrective action and is monitoring compliance. Enforcement efforts are focusing on ensuring that POTWs comply with their reporting mandates and with other RCRA permit-by-rule requirements.

Regional UIC permit writers are conducting corrective action investigations for Class I hazardous waste wells, but the highest priority is being given to wells with permits issued after November 1984. Such permits did not include a schedule for corrective action. Owners or operators of Class I wells must certify compliance with requirements for groundwater monitoring and financial responsibility in order to retain authorization to inject hazardous materials. The Regions are also reviewing petitions from operators of hazardous waste injection wells, who are seeking exemptions from the injection ban under Part 148.

Headquarters completed the Municipal Wastewater Lagoon Study and forwarded it to Congress in December 1987.

During 1988, the Agency plans to propose an additional set of regulations covering wastes regulated under Sections 3004(f) and (g) and promulgate final regulations covering the petition process. In addition, EPA expects to review up to 90 petitions from operators of hazardous waste injection wells who are seeking exemptions from the injection ban, and revise or modify up to 200 hazardous waste injection well permits. Several guidances outlining the criteria and procedures to be used in developing geologic data and modeling waste fate and transport are under development.

1987 Accomplishments

In 1987, the Agency obligated a total of \$7,803,600 supported by 40.4 total workyears for this program, of which \$1,741,200 was from the Salaries and Expenses appropriation and \$6,062,400 was from the Abatement, Control, and Compliance appropriation.

During 1987, emphasis was placed on implementing RCRA permit-by-rule requests for POTWs that receive hazardous waste, especially the corrective action requirement. EPA screened POTWs to identify those which received hazardous waste by dedicated pipe or which received manifested hazardous waste by truck or rail and established RCRA permit-by-rule requirements for POTWs. EPA oversaw the early stages of corrective action, modified permits and monitored compliance with corrective action requirements.

EPA developed procedural guidance for Regions and authorized States to establish requirements of the RCRA permit-by-rule and to assist them in identifying POTWs subject to that constraint, including corrective action requirements. Guidance was developed for implementation of the first stage of the corrective action process and RCRA permit-by-rule requirements.

The Agency developed regulations and amendments to existing UIC regulations to implement Sections 3004(f) and (g) of the HSWA. The regulations which were proposed in August 1987 provide the framework for both considering petitions submitted by operators seeking to demonstrate "no migration" and upgrading the technical requirements in existing UIC regulations which are applicable to hazardous waste injection wells. EPA continued studies necessary to support regulatory development and program implementation.

Guidance on corrective action for Class I UIC wells was issued and assistance provided on compliance and enforcement of corrective action and interim status requirements and on implementation of corrective action requirements. Class I wells subject to corrective action were identified.

The Agency also established the framework for implementing these regulations, including assistance to major States in petition reviews.

REGULATIONS, GUIDELINES AND POLICIES -- UNDERGROUND STORAGE TANKS (UST)

1989 Program Request

The Agency requests a total of \$7,750,700 supported by 67.6 total workyears for this program, of which \$3,550,700 will be for the Salaries and Expenses appropriation and \$4,200,000 will be for the Abatement, Control, and Compliance appropriation. This represents an increase of \$44,400 and a decrease of \$450,000, respectively, and no change in total workyears. The increase in Salaries and Expenses reflects a slight increase in support costs. The decrease in Abatement, Control, and Compliance reflects the completion of the data collection and economic and program analyses needed for regulatory development.

The Agency will promulgate financial responsibility regulations for owner/operators of underground storage tanks containing hazardous substances. Data collection, analysis and regulatory development efforts will be necessary to propose regulations for tanks storing used oil, bulk storage petroleum tanks, and a variety of individual sumps and reservoirs. The Agency will continue its analysis to determine whether and how exempted heating oil and farm fuel tanks might be regulated.

Implementation activities will be an increasing portion of the Agency's task. Because the program will be implemented at the State and local level, the Agency's role will be to develop policy and technical guidelines, and public guidance documents, as well as to provide interpretations of rules. In addition, the Agency will provide technical support and training to the States as they develop their programs.

Another major activity in 1989 will be the review of State program applications. The Agency will review and approve applications for a significant number of States and continue to work with others on the development and preparation of applications for Federal approval.

The Agency will negotiate and administer State grants and will oversee and evaluate State programs. The Agency will also assist and oversee State enforcement activities, including inspections and enforcement actions against violators.

1988 Program

In 1988, the Agency is allocating a total of \$8,156,300 supported by 67.6 total workyears for this program, of which \$3,506,300 is from the Salaries and Expenses appropriation and \$4,650,000 is from the Abatement, Control, and Compliance appropriation.

The Agency will issue final regulations on corrective action, leak detection, leak prevention, and technical performance standards for new and existing tanks which contain petroleum products and hazardous substances. Policy and guidance are being developed on the process and requirements for States to apply for authorization of their regulatory programs. The regulatory or prevention program is being integrated with the cleanup program funded by the Leaking Underground Storage Tank Trust Fund.

The Agency is negotiating and overseeing State UST grants and providing technical assistance and guidance for implementation and enforcement. Efforts continue to assist the States with program development and the program application process.

1987 Accomplishments

In 1987, the Agency obligated a total of \$11,754,000 supported by 38.6 total workyears for this program, of which \$1,867,700 was from the Salaries and Expenses appropriation and \$9,886,300 was from the Abatement, Control, and Compliance appropriation.

In 1987, the Agency proposed regulations on tank standards for new and existing tanks, financial responsibility for owner/operators of petroleum tanks, and State program approval. The program developed policy and guidance to implement and enforce the new regulatory requirements. The Agency conducted oversight of State programs and assisted them in program development. In addition, the Agency negotiated and administered State UST grants, conducted inspections under the Interim Prohibition regulations and initiated enforcement actions against violators.

HAZARDOUS WASTE
Financial Assistance

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988
----- (DOLLARS IN THOUSANDS)						
PROGRAM -----						
Hazardous Waste Management Financial Assistance To States Abatement Control and Compliance	\$62,919.5	\$66,000.0	\$64,812.0	\$64,812.0	\$66,000.0	\$1,188.0
TOTAL	\$62,919.5	\$66,000.0	\$64,812.0	\$64,812.0	\$66,000.0	\$1,188.0
Hazardous Waste Management Initiative Grants Abatement Control and Compliance	\$1,208.7					
TOTAL	\$1,208.7					
Underground Storage Tanks State Grants Abatement Control and Compliance	\$6,903.1	\$6,700.0	\$6,579.0	\$6,579.0	\$9,000.0	\$2,421.0
TOTAL	\$6,903.1	\$6,700.0	\$6,579.0	\$6,579.0	\$9,000.0	\$2,421.0
TOTAL: Abatement Control and Compliance	\$71,031.3	\$72,700.0	\$71,391.0	\$71,391.0	\$75,000.0	\$3,609.0
Financial Assistance TOTAL	\$71,031.3	\$72,700.0	\$71,391.0	\$71,391.0	\$75,000.0	\$3,609.0

HAZARDOUS WASTE

Financial Assistance

Budget Request

The Agency requests a total of \$75,000,000 for this program for the Abatement, Control, and Compliance appropriation. This is an increase of \$3,609,000 from the level provided in 1988.

Program Description

The three program areas under this subactivity are:

Hazardous Waste Management Financial Assistance to States -- This program provides financial assistance to States for the development, implementation, and enforcement of comprehensive hazardous waste management programs that meet the requirements of Subtitle C of the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. States are required to provide a 25 percent match to these funds. Objectives of the grant program are to provide incentives to the States to: (1) develop and administer State hazardous waste management programs controlling the generation, transportation, storage, treatment, and disposal of hazardous wastes; (2) develop environmentally sound permits for as many priority hazardous waste management facilities as possible; and (3) enforce hazardous waste management program regulations to protect human health and the environment.

HSWA greatly expanded the Hazardous Waste management program in the States. It increased the number and complexity of requirements that States must meet to achieve equivalence with the Federal Hazardous Waste management program. Key provisions in HSWA strengthened requirements for corrective action, broadened restrictions on the land disposal of hazardous waste, and set deadlines for the issuance of RCRA permits.

Hazardous Waste Initiative Grants -- This program provides financial assistance to foster State and local hazardous waste management efforts focused on innovative waste management activities, such as waste reduction, waste exchange, siting, use of alternatives to land disposal, and assistance to small quantity generators.

Underground Storage Tank Grants -- This program supports development and implementation of State Underground Storage Tank (UST) programs. States will develop regulatory standards that meet or exceed Federal standards for underground storage, release detection, leak prevention, and corrective action programs. States will also develop the necessary enforcement authorities to ensure compliance with those standards.

HAZARDOUS WASTE MANAGEMENT FINANCIAL ASSISTANCE TO STATES

1989 Program Request

The Agency requests a total of \$66,000,000 for this program, all of which will be for the Abatement, Control, and Compliance appropriation. This represents an increase of \$1,188,000 to provide additional support for State corrective action and permit modification processing.

The Agency will continue to provide financial assistance to the States to develop legislation and regulations to achieve equivalence with the Federal Hazardous Waste management program. The States will participate in implementing the requirements of HSWA for which they are not yet authorized, particularly corrective action.

The States will place high priority on processing permit applications for commercial incineration facilities and for facilities seeking to expand treatment and incineration capacity. The States will also place a high priority on processing applications for incinerator operating permits to meet the November 1989 deadline. In addition, the States will issue an increasing number of permit modifications for operating facilities. A significant number of these will be due to corrective action requirements. A small number of storage and treatment permits will be drafted to ensure that operating facilities are in compliance with groundwater monitoring regulations, that groundwater contamination is characterized, and that corrective action plans are developed.

The States will tie their enforcement efforts to those facilities that are deemed high priority violators due to the type, the severity, or the frequency of violation. The States will continue to undertake timely and appropriate enforcement at these facilities. Facilities that violate corrective action schedules will be targeted for enforcement action. States will annually inspect all land disposal and incineration facilities, half of the treatment and storage facilities, and a targeted universe of generators and transporters in order to enforce the land ban restrictions. Additional inspections at commercial facilities will be conducted to ensure that these facilities can manage off-site Superfund waste in an environmentally safe manner.

The States will ensure that corrective action initiated in prior years is fully supported and thorough oversight is provided through proper review, inspections, and appropriate follow-up enforcement. States will initiate new facility assessments at facilities seeking permits and will establish priorities for addressing releases at closed facilities that are determined to be environmentally significant.

1988 Program

In 1988, the Agency is allocating a total of \$64,812,000 for this program, all of which is from the Abatement, Control, and Compliance appropriation.

The States are continuing to develop legislation and regulations to achieve equivalence with the Federal Hazardous Waste management program. A significant number of States are submitting applications for authorization for the various provisions of HSWA as they become effective. The States and Regions are jointly processing permits for those HSWA provisions for which States are not authorized, particularly corrective action.

The States are placing a high priority on processing permit applications for land disposal and incineration facilities. The processing of permit modifications at permitted facilities is taking on increasing importance. In addition, the States, in conjunction with the Regions, have developed and are implementing facility management plans for land disposal facilities and other facilities of environmental significance.

The States are inspecting the handlers of hazardous waste and are taking enforcement actions against those handlers that present the greatest threat to human health and the environment. Special emphasis is being placed on initiating enforcement actions to support the new land ban requirements. The States are ensuring that land disposal facilities are in compliance with groundwater

standards, that commercial facilities are in compliance with the Superfund off-site policy, and that releases from environmentally significant facilities are detected. The States are developing comprehensive training programs to maintain a high quality work force and improve facility compliance with complex RCRA requirements.

Corrective action activities fully support study and cleanup of facilities applying for permits as well as those closed or closing land disposal facilities already assessed. Additional assessments will be done at those facilities scheduled to be permitted in 1989.

1987 Accomplishments

In 1987, the Agency obligated a total of \$62,919,500, all of which was from the Abatement, Control, and Compliance appropriation. These grant funds supported the development and authorization of State hazardous waste management programs, implementation of authorized programs, and implementation of the Federal program in unauthorized States. By the end of 1987, one State achieved authorization for initial HSWA requirements and 43 States achieved full pre-HSWA authorization. In addition, States continued to develop legislation and regulations consistent with HSWA provisions. The States and Regions completed 722 final determinations on permit applications. The States conducted the inspections required of them by legislation and EPA policies. Moreover, they took appropriate and timely enforcement action against those facilities that were in significant non-compliance with RCRA regulations, especially those facilities exhibiting groundwater violations. RCRA facility assessments were performed at both closing land disposal facilities and at land disposal facilities applying for operating permits.

HAZARDOUS WASTE MANAGEMENT INITIATIVE GRANTS

1989 Program Request

The Agency requests no funds for this program. Resources to support activities under this program are provided under the Hazardous Waste Management Financial Assistance to States program.

1988 Program

In 1988, the Agency is allocating no funds for this program. Resources to support activities under this program are provided under the Hazardous Waste Management Financial Assistance to States program.

1987 Accomplishments

In 1987, the Agency obligated a total of \$1,208,700 for this program, all of which was from the Abatement, Control, and Compliance appropriation. These funds were carryover funds from 1986 that were awarded to State and local agencies to develop or implement innovative hazardous waste management efforts, such as waste reduction, and for accelerating permit issuance to new or expanding hazardous waste management facilities.

UNDERGROUND STORAGE TANK GRANTS

1989 Program Request

The Agency requests a total of \$9,000,000 for this program, all of which will be for the Abatement, Control, and Compliance appropriation. This represents an increase of \$2,421,000 which will provide for expanded State programs to implement the final regulations for petroleum and hazardous substance tanks.

Resources provided to the States will be used to supplement State funds in the development and implementation of State Underground Storage Tank (UST) programs. In 1989, some States will continue to work on program development. A significant number of States are expected to develop regulatory standards no less stringent than the Federal requirements, including tank standards, leak detection and reporting, financial responsibility, and corrective action standards. Once these standards are in place, they will be applying for Federal program approval.

These States will then begin a higher level of implementation activities. States will need to identify and notify tank owners of the new requirements and conduct tank owner education sessions. States will receive an increased number of release notifications and requests for information and guidance as owners implement leak detection requirements on at least 350,000 tanks. Also, State enforcement programs will be expanding to ensure compliance with the new Federal regulations.

1988 Program

In 1988, the Agency is allocating a total of \$6,579,000 for this program, all of which is from the Abatement, Control, and Compliance appropriation. UST grant funds are being used to stimulate development of State UST programs. States are continuing development of legislative authorities and proposed regulatory standards no less stringent than proposed Federal standards. An important activity is the continuation of efforts to develop multi-year funding mechanisms, such as permit and license fees, gasoline taxes and surcharges, and general revenues. Implementation activities are continuing as States process tank notifications. Enforcement efforts focus on the development of compliance and enforcement programs and, in some cases, on the enforcement of existing State regulations equivalent to the Interim Prohibition requirements.

1987 Accomplishments

In 1987, the Agency obligated a total of \$6,903,100 for the program, all of which was from the Abatement, Control, and Compliance appropriation. States used these funds to develop State UST programs that meet or exceed the proposed Federal standards. The States received and processed tank notifications on 1.7 million tanks. A number of States established fee systems related to the number of tanks registered; these funds will help to pay a portion of future State costs. Other States developed innovative approaches to prevention programs. For example, a few States are forbidding fuel distributors to fill tanks lacking a registration seal or certificate.

HAZARDOUS WASTE
Waste Management Strategies Implementation

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988
--	----------------	----------------------------	-----------------	-----------------------------	-----------------	--

(DOLLARS IN THOUSANDS)

PROGRAM

Hazardous Waste
Management Regulatory
Strategies
Implementation

Salaries & Expenses	\$15,195.0	\$16,124.4	\$15,368.8	\$15,368.8	\$15,776.3	\$407.5
Abatement Control and Compliance	\$3,628.0	\$5,479.8	\$5,479.8	\$4,229.8	\$8,279.8	\$4,050.0
TOTAL	\$18,823.0	\$21,604.2	\$20,848.6	\$19,598.6	\$24,056.1	\$4,457.5

TOTAL:

Salaries & Expenses	\$15,195.0	\$16,124.4	\$15,368.8	\$15,368.8	\$15,776.3	\$407.5
Abatement Control and Compliance	\$3,628.0	\$5,479.8	\$5,479.8	\$4,229.8	\$8,279.8	\$4,050.0

Waste Management
Strategies
Implementation

TOTAL	\$18,823.0	\$21,604.2	\$20,848.6	\$19,598.6	\$24,056.1	\$4,457.5
-------	------------	------------	------------	------------	------------	-----------

PERMANENT WORKYEARS

Hazardous Waste
Management Regulatory
Strategies
Implementation

	354.8	382.9	382.9	340.4	380.0	39.6
--	-------	-------	-------	-------	-------	------

TOTAL PERMANENT WORKYEARS

	354.8	382.9	382.9	340.4	380.0	39.6
--	-------	-------	-------	-------	-------	------

HM-37

HAZARDOUS WASTE
Waste Management Strategies Implementation

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988
----- (DOLLARS IN THOUSANDS) -----						
TOTAL WORKYEARS						

Hazardous Waste Management Regulatory Strategies Implementation	388.2	382.9	382.9	374.9	380.0	5.1
TOTAL WORKYEARS	388.2	382.9	382.9	374.9	380.0	5.1

HAZARDOUS WASTE

Waste Management Strategies Implementation

Budget Request

The Agency requests a total of \$24,056,100 supported by 380.0 total workyears for 1989, an increase of \$4,457,500 and 5.1 total workyears from 1988. Of the request, \$15,776,300 will be for the Salaries and Expenses appropriation and \$8,279,800 will be for the Abatement, Control, and Compliance appropriation, increases of \$407,500 and \$4,050,000, respectively.

Program Description

Hazardous Waste Management Regulatory Strategies Implementation -- This program supports Regional implementation of the Hazardous Waste management program mandated under the Resource Conservation and Recovery Act (RCRA) of 1976, including the Hazardous and Solid Waste Amendments (HSWA) of 1984. The Regions assist the States in developing hazardous waste management programs equivalent to the Federal program by providing guidance and technical assistance for developing program capabilities and authorization applications, and by jointly processing permit applications until the States are authorized for HSWA. In addition, the Regions oversee State programs to ensure that implementation of RCRA is carried out in a nationally consistent manner and that minimum RCRA standards are followed. This program also supports Regional activities to implement the Hazardous Waste management program directly in States that are not authorized.

HAZARDOUS WASTE MANAGEMENT REGULATORY STRATEGIES IMPLEMENTATION

1989 Program Request

The Agency requests a total of \$24,056,100 supported by 380.0 total workyears for this program, of which \$15,776,300 will be for the Salaries and Expenses appropriation and \$8,279,800 will be for the Abatement, Control, and Compliance appropriation. This represents increases of \$407,500 and \$4,050,000, respectively, and an increase of 5.1 total workyears. The increases will allow EPA to serve as a technical clearinghouse for solid waste information and to support States in developing their solid waste management programs, as well as funding cooperative agreements for State mining waste programs. Regional management support of the permitting, permit modification and permit appeals workload will also increase.

The Regions and States will aggressively work toward meeting the November 1989 deadline for issuing incinerator permits to operating facilities. EPA and the States will process an increasing number of permit modifications, particularly applications that will result in new storage or treatment capacity or in processes that minimize a facility's waste. Other important permitting activities will include the processing of permit appeals, particularly those for land disposal facility permits; incorporating land ban regulations into permits; and processing the most environmentally significant storage and treatment permit applications.

The Regions and States will also work together to process closure plans and request post-closure permit applications from environmentally significant closing land disposal facilities. Public involvement in permitting and closure processes will be encouraged through public education and outreach activities.

An important activity of the Regions will be to provide adequate oversight of State permitting activities. Regions will review State permit actions to ensure technical adequacy, enforceability, and national consistency as well as to provide

State permit writers with technical assistance. The Agency will provide specific guidance during the review of more complex regulatory requirements, such as corrective action and closure and post-closure plans. In addition, the Regions will implement the Agency's national oversight policy through evaluation of State performance, including program reviews, file audits, and analysis of routine reports.

Regions will continue to support the development and upgrading of State legislation and regulations to achieve equivalence with the Federal Hazardous Waste management program. The Regions will also provide technical information and support to the States as they develop effective Subtitle D programs by adoption and implementation of the revised Federal Subtitle D criteria for municipal landfills. The Regions will also increase support for State development of mining waste programs through cooperative agreements with appropriate States.

1988 Program

In 1988, the Agency is allocating a total of \$19,598,600 supported by 374.9 total workyears for this program, of which \$15,368,800 is from the Salaries and Expenses appropriation and \$4,229,800 is from the Abatement, Control, and Compliance appropriation. The Regions are supporting the States in the development of hazardous waste management programs equivalent to the Federal program. With most States authorized for the pre-HSWA program, the Agency is focusing on oversight and technical support activities. In addition, the Regions are providing technical assistance to the States as they develop legislation and regulations consistent with the provisions of HSWA, and as they keep pace with regulatory revisions to the base program.

The Regions and States are jointly processing those permit applications with HSWA provisions for States not yet authorized. High priorities for the EPA and the States are processing the remainder of land disposal facility permit applications by the November 1988 deadline and processing a large number of incineration facility permits to work towards meeting the November 1989 deadline. Closure plans are being reviewed, and facility management plans for environmentally significant facilities are being developed. In addition, the Regions continue to review exposure assessment information for landfills and surface impoundments. Finally, the Regions are overseeing State permit actions on facilities to ensure national consistency, providing technical assistance to State permit writers, and conducting State program reviews.

1988 Explanation of Changes from the Enacted Level

The net decrease of \$1,250,000 results from the mining waste program being delayed since regulations are not yet finalized.

1987 Accomplishments

In 1987, the Agency obligated a total of \$18,823,000 supported by 388.2 workyears of which \$15,195,000 was from the Salaries and Expenses appropriation and \$3,628,000 was from the Abatement, Control, and Compliance appropriation.

The Regions assisted States in achieving authorization to implement a hazardous waste management program equivalent to the Federal program. By the end of 1987, 43 States had achieved full authorization for the pre-HSWA program and one State had achieved authorization for initial HSWA requirements. Additionally, with Regional assistance, the States began to develop legislation and regulations consistent with the provisions of HSWA. The Regions and States made 722 final

determinations on permit applications. In addition, the Regions developed a facility management plan for each incineration facility and continued to develop plans for other environmentally significant facilities.

HAZARDOUS WASTE
Emergency Planning/Community Right to Know - Title III

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988
----- (DOLLARS IN THOUSANDS) -----						
PROGRAM						

Emergency Planning						
Community Right To Know						
Salaries & Expenses			\$1,148.6	\$1,148.6	\$1,478.7	\$330.1
Abatement Control and Compliance			\$2,938.0	\$2,603.0	\$2,938.0	\$335.0
TOTAL			\$4,086.6	\$3,751.6	\$4,416.7	\$665.1
FEMA EMERGENCY TRAINING						
- TITLE III						
Abatement Control and Compliance			\$5,000.0	\$5,000.0		-\$5,000.0
TOTAL			\$5,000.0	\$5,000.0		-\$5,000.0
TOTAL:						
Salaries & Expenses			\$1,148.6	\$1,148.6	\$1,478.7	\$330.1
Abatement Control and Compliance			\$7,938.0	\$7,603.0	\$2,938.0	-\$4,665.0
PERMANENT WORKYEARS						

Emergency Planning			32.0	21.6	28.0	6.4
Community Right To Know						
TOTAL PERMANENT WORKYEARS			32.0	21.6	28.0	6.4
TOTAL WORKYEARS						

Emergency Planning			32.0	22.0	28.0	6.0
Community Right to Know						
TOTAL WORKYEARS			32.0	22.0	28.0	6.0

HM-42

HAZARDOUS WASTE

Emergency Planning/Community Right-To-Know

Title III

Budget Request

The Agency requests a total of \$4,416,700 supported by 28.0 total workyears for 1989, an increase of \$665,100 and 6.0 total workyears over 1988. Of the request, \$1,478,700 will be for the Salaries and Expenses appropriation and \$2,938,000 will be for the Abatement, Control, and Compliance appropriation, increases of \$330,100 and \$335,000, respectively. The Agency is not requesting \$5,000,000 in emergency training grants under Section 305(a). Instead, the Federal Emergency Management Agency (FEMA) will request funding for these grants.

Program Description

This program has responsibility for implementing most sections of Title III of the Superfund Amendments and Reauthorization Act of 1986. The objectives of the Title III program include emergency planning at the State and local levels; community right-to-know reporting of hazardous substance inventories; analysis of methods to detect, monitor, and prevent accidental releases; and tracking and reporting releases of toxic substances. Activities supporting these objectives focus on the development of regulations and guidance for implementation and enforcement of Title III and also on assistance to State and local governments in meeting emergency planning and community right-to-know responsibilities. All efforts are designed to maximize the effective and responsible use of information generated by the law.

1989 Program Request

The Agency requests a total of \$4,416,700 supported by 28.0 total workyears for this program, of which \$1,478,700 will be for the Salaries and Expenses appropriation and \$2,938,000 will be for the Abatement, Control, and Compliance appropriation. This represents increases of \$330,100 and \$335,000, respectively, and an increase of 6.0 total workyears.

These increases reflect the Local Emergency Planning Committees' completion of emergency plans, which are due in early 1989. The plans will require reviewing and updating by these local groups. Field exercises will be performed to test the practical effectiveness of the plans. EPA and the Regional Response Teams will provide assistance to States and priority area communities in all of these planning activities. Also, those local groups that do not complete plans by the deadline will need further assistance.

The Occupational Safety and Health Administration's expansion of facilities affected by the Hazard Communication Standard will increase community right-to-know activity and intensify trade secret claims collection and review. EPA will develop information management tools aimed at assisting effective data collection, organization, use, and distribution. To further the responsible interpretation and use of Title III information, the Agency plans to finalize its risk communication guidelines. Other efforts to enhance compliance by affected groups will be finalized and implemented.

Review and revision of regulations will proceed, including possible additions to the list of extremely hazardous substances, which incorporates chronic toxicity, flammability and reactivity criteria. The final rule for the

non-manufacturing and final-year hazardous chemical reporting thresholds will be completed. EPA will continue its participation in the review of the Section 305(a) training grants distributed by FEMA.

1988 Program

In 1988, the Agency is allocating a total of \$3,751,600 supported by 22.0 total workyears, of which \$1,148,600 is from the Salaries and Expenses appropriation and \$2,603,000 is from the Abatement, Control, and Compliance appropriation. Also, the Agency is allocating a total of \$5,000,000 from the Abatement, Control, and Compliance appropriation to FEMA for Section 305(a) training grants to States.

The Agency is conducting analyses to support rule-makings for community right-to-know reporting quantities, reporting information forms, trade secret claims and the non-manufacturing and final-year reporting thresholds. Supporting analyses on these threshold levels will also be conducted. The Agency is completing its study of public alert programs and emergency systems for detecting, monitoring and preventing releases of extremely hazardous substances and the results will be submitted to Congress. The program is evaluating additional hazard criteria for the extremely hazardous substance list, and is planning to promulgate additional rules on trade secrets and community right-to-know.

As the local committees begin their formulation of emergency plans, critical guidance and assistance to these groups through the Regional Response Teams is being provided. Further guidance to industry on community right-to-know information is being refined and distributed. The Agency plans to develop the necessary infrastructure to support Title III needs in the areas of information management, risk communication and enforcement. Trade secret claims are being evaluated. Finally, EPA is remaining involved with FEMA's Section 305(a) training grants.

1987 Accomplishments

In 1987, the Agency obligated a total of \$3,436,500 and 3.7 total workyears for this program, all of which was from the Hazardous Substance Superfund appropriation. Also, FEMA obligated a total of \$4,728,100 from the Hazardous Substance Superfund for Section 305(a) training grants to States.

The Agency met all statutory deadlines including promulgating four regulations, issuing the National Response Team's Hazardous Materials Emergency Planning Guide, and completing the Section 305(b) Interim Report to Congress. Rule-making was completed on the list of extremely hazardous substances, threshold planning quantities and emergency notification requirements (Sections 302 to 304). Other rules proposed in 1987 included the hazardous chemical inventory forms and community right-to-know reporting guidelines. The technical guidance document for hazard analysis neared completion and a computer planning and response system was designed in coordination with the Department of Commerce's National Oceanic and Atmospheric Administration.

EPA worked with FEMA in developing guidance to States and Indian tribes on criteria for submitting Section 305(a) grant proposals. In addition, EPA participated in the review of the proposals and provided recommendations to FEMA on the distribution of these grants. Establishment of the State and local Title III structure proceeded close to schedule -- all State Emergency Response Commissions were appointed, though some Local Emergency Planning Committee members are still being named.

ENVIRONMENTAL PROTECTION AGENCY

1989 Budget Estimate

Table of Contents

	<u>Page</u>
<u>HAZARDOUS WASTE</u>	
ENFORCEMENT	
Hazardous Waste Enforcement.....	HW-45

HAZARDOUS WASTE
Hazardous Waste Enforcement

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988
----- (DOLLARS IN THOUSANDS) -----						
PROGRAM						

Hazardous Waste Enforcement						
Salaries & Expenses	\$17,471.7	\$20,100.0	\$19,354.8	\$19,354.8	\$19,703.5	\$348.7
Abatement Control and Compliance	\$18,640.1	\$19,495.0	\$21,102.0	\$20,451.2	\$21,100.0	\$648.8
TOTAL	\$36,111.8	\$39,595.0	\$40,456.8	\$39,806.0	\$40,803.5	\$997.5
TOTAL:						
Salaries & Expenses	\$17,471.7	\$20,100.0	\$19,354.8	\$19,354.8	\$19,703.5	\$348.7
Abatement Control and Compliance	\$18,640.1	\$19,495.0	\$21,102.0	\$20,451.2	\$21,100.0	\$648.8
Hazardous Waste Enforcement TOTAL	\$36,111.8	\$39,595.0	\$40,456.8	\$39,806.0	\$40,803.5	\$997.5
PERMANENT WORKYEARS						

Hazardous Waste Enforcement	422.2	492.0	492.0	448.7	485.1	36.4
TOTAL PERMANENT WORKYEARS	422.2	492.0	492.0	448.7	485.1	36.4
TOTAL WORKYEARS						

Hazardous Waste Enforcement	454.5	492.0	492.0	481.7	485.1	3.4
TOTAL WORKYEARS	454.5	492.0	492.0	481.7	485.1	3.4

HAZARDOUS WASTE

Hazardous Waste Enforcement

Budget Request

The Agency requests a total of \$40,803,500 supported by 485.1 total workyears for 1989, increases of \$997,500 and 3.4 total workyears above 1988 levels. Of the request, \$19,703,500 will be for the Salaries and Expenses appropriation and \$21,100,000 will be for the Abatement, Control, and Compliance appropriation, increases of \$348,700 and \$648,800, respectively.

Program Description

Hazardous Waste Enforcement -- This program serves to ensure national compliance with the Resource Conservation and Recovery Act (RCRA) of 1976, including the Hazardous and Solid Waste Amendments (HSWA) of 1984. The goal of the RCRA program is to promote management practices that ensure the handling and disposal of hazardous waste in an environmentally sound manner. The principal objectives are to: (1) inspect and evaluate hazardous waste generator, transporter, and facility compliance with the statutory, regulatory, and permit requirements imposed under RCRA; (2) take timely and appropriate follow-up enforcement actions whether administrative, civil, or criminal; (3) address releases at RCRA facilities by defining and monitoring appropriate corrective actions; and (4) assist and evaluate program implementation in the States by providing national guidance, technical support, training and follow-up enforcement, when appropriate.

HAZARDOUS WASTE ENFORCEMENT

1989 Program Request

The Agency requests a total of \$40,803,500 supported by 485.1 total workyears for 1989, increases of \$997,500 and 3.4 total workyears. Of the request, \$19,703,500 will be for the Salaries and Expenses appropriation and \$21,100,000 will be for the Abatement, Control, and Compliance appropriation, increases of \$348,700 and \$648,800 respectively. The increases support the additional workload associated with ongoing corrective action.

Enforcement resources will be targeted to develop the enforcement strategies for new regulations that encompass an expanded universe of RCRA facilities, such as new waste listings, and for implementation of new policy directions, such as land bans, surface impoundment compliance and corrective action. This includes guidelines for monitoring, through tests and recordkeeping requirements, the compliance of generators, owners, and operators with new listings and waste definitions to determine whether their wastes are hazardous. Enforcement strategies for rules addressing major cross-media concerns such as air emissions from treatment, storage and disposal facilities (TSDFs) and municipal waste combustion will be completed. Policies and guidance will be developed for using RCRA and CERCLA enforcement tools in a complementary manner to ensure that the worst facilities will be addressed in as timely a manner as possible. Policies and guidelines will also be developed for closure compliance.

Corrective action activities will be expanded at operating and environmentally significant closing facilities. The Agency will continue to assess the need for corrective action at facilities seeking operating permits, and will seek the cooperation of owners and operators in developing corrective action plans. Facilities requiring corrective action will be addressed by the most appropriate means, whether through the permit/post-closure process, issuance of a section 3008(h)

administrative order, or use of Superfund enforcement and program authorities for a select number of closed or closing facilities. The Agency will increase emphasis on monitoring the progress of corrective actions initiated by owners and operators.

The Agency will conduct thorough inspections at all land disposal facilities annually, and at treatment and storage facilities biennially, as required by policy and statute, to review compliance with permit, closure, and corrective action requirements. Significant generators will be inspected to ensure compliance with the land ban regulations. The Agency will thoroughly inspect all Federal, State, and local government-owned or government-operated TSDFs. Additional inspections at commercial facilities will be conducted to ensure that these facilities can manage off-site Superfund wastes in an environmentally safe manner.

The Agency will conduct inspections and technical evaluations in unauthorized States and will provide support for these evaluations in authorized States. Regional and State capabilities in inspections and training of field personnel will be emphasized as a high priority, through conducting joint inspections, providing guidelines, checklists and basic inspection protocols. Timely and appropriate enforcement by the States will be promoted by offering technical assistance, sampling, laboratory analysis, and other technical expertise as needed. In addition, the Regions will conduct oversight inspections and initiate enforcement actions where appropriate.

The Agency will emphasize enforcement efforts at those facilities that are deemed high priority violators due to the type, the severity, or the frequency of violation. The Agency will continue to undertake timely and appropriate enforcement at these facilities. Facilities that violate corrective action schedules as stated in permits or corrective action orders will be targeted for enforcement actions.

The Agency will conduct program reviews of the compliance monitoring and enforcement programs, including corrective action, in all participating States. With the increased restrictions of land disposal resulting from the Land Bans, retrofitting requirements, and facility closings, the Agency will place increased emphasis on providing guidance and direction to the States for monitoring generators and transporters. The Agency will work closely with the States to augment their capabilities to enforce new HSWA requirements, to train new State personnel, to evaluate State grant accomplishments, and to facilitate HSWA authorization.

The Agency will continue to perform detailed analyses to ensure sound financial and programmatic management. A strong information program will support improvements introduced in prior years, allow implementation of the RCRA Information System (RCRIS), address Congressional and public inquiries and support program analysis and evaluation activities. The Agency will coordinate closely with the States to effect a smooth transition from the present RCRA Hazardous Waste Data Management System (HWDMS) to RCRIS, which emphasizes automated data transfer, wide accessibility, and standardized formats among the Regions, States, and Headquarters.

1988 Program

The Agency is allocating a total of \$39,806,000 supported by 481.7 total workyears, of which \$19,354,800 will be from the Salaries and Expenses appropriation, and \$20,451,200 will be from the Abatement, Control, and Compliance appropriation.

The Agency is initiating development of enforcement strategies for new program components such as corrective action at environmentally significant RCRA facilities; generators' compliance with waste characterization, treatment, and land ban requirements; and coordination with Superfund enforcement activities at Federal facilities.

The Agency provides program direction, training, and technical assistance to both the Regions and the States for compliance monitoring, corrective action requirements and procedures, and information management. Evaluation of Regional and State performance and promulgation of nationally consistent interpretations of rules, regulations, and policies are also major responsibilities of the Agency. Support and evaluation of the States' programs continue through technical assistance, training, oversight inspections, and program reviews.

The Agency is inspecting the handlers of hazardous waste and taking enforcement actions against those handlers that present the greatest threat to human health and the environment. Special emphasis is placed on initiating enforcement actions that will lead to compliance with the new land ban requirements. The Agency is ensuring that land disposal facilities are in compliance with groundwater standards, that commercial facilities are in compliance with the Superfund off-site policy, and that releases from environmentally significant facilities are detected.

Corrective action activities support assessment and monitoring of cleanup at facilities applying for operating permits as well as monitoring those closed or closing land disposal facilities already assessed. In addition, a priority scheme is being implemented that will emphasize response at environmentally significant RCRA closing treatment and storage facilities.

1987 Program

The Agency obligated a total of \$36,111,800 supported by 454.5 total workyears, of which \$17,471,700 was from the Salaries and Expenses appropriation, and \$18,640,100 was from the Abatement, Control, and Compliance appropriation.

The Enforcement Response Policy was revised to direct the enforcement resources of the Regions and the States to the worst offenders, broadening programmatic enforcement efforts from land disposers to include treaters, storers, and generators with significant violations. The Enforcement program issued land ban guidance, developed a model 3008(h) administrative order and began the delegation of authority to the Regions for issuing such orders. The Agency revised the Superfund off-site policy to further ensure that off-site disposal of Superfund hazardous waste is managed in an environmentally sound manner.

The Agency performed the mandated inspections and addressed virtually all of the significant non-compliers with formal enforcement actions. RCRA Facility Assessments were performed to support the land disposal and incinerator permit deadlines and to address significant closing land disposal facilities. RCRA Facility Investigations were formally required either through the imposition of permit conditions, permit modifications, or issuance of section 3008(h) administrative orders.

PESTICIDES

ENVIRONMENTAL PROTECTION AGENCY

1989 Budget Estimate

Table of Contents

	<u>Page</u>
<u>PESTICIDES</u>	P-1
RESEARCH & DEVELOPMENT	
Pesticides Research.....	P-8
Scientific Assessment.....	P-14
Monitoring Systems and Quality Assurance.....	P-14
Health Effects.....	P-15
Environmental Engineering and Technology.....	P-16
Environmental Processes and Effects.....	P-17
ABATEMENT & CONTROL	
Registration, Special Registration & Tolerances.....	P-20
Registration.....	P-22
Special Registration.....	P-24
Tolerances.....	P-25
Generic Chemical Review.....	P-27
Generic Chemical Review.....	P-28
ENFORCEMENT	
Pesticides Enforcement.....	P-32
Pesticides Enforcement.....	P-35
Pesticides Enforcement Grants.....	P-36
Pesticides Certification & Training.....	P-37
Pesticides Certification & Training Grants.....	P-38

PESTICIDES

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988

(DOLLARS IN THOUSANDS)						

APPROPRIATION						

Salaries & Expenses	\$38,322.3	\$42,149.7	\$42,244.0	\$42,244.0	\$42,827.1	\$583.1
Abatement Control and Compliance	\$25,644.1	\$26,443.1	\$35,143.1	\$35,143.1	\$86,443.1	\$51,300.0
Research & Development	\$7,311.6	\$7,254.1	\$6,922.1	\$6,844.7	\$8,149.8	\$1,305.1
TOTAL, Pesticides	\$71,278.0	\$75,846.9	\$84,309.2	\$84,231.8	\$137,420.0	\$53,188.2
PERMANENT WORKYEARS	789.0	757.1	777.6	805.5	782.1	-23.4
TOTAL WORKYEARS	796.9	818.2	831.8	831.7	831.7	
OUTLAYS	\$69,183.1	\$76,403.7	\$76,802.7	\$76,732.2	\$115,605.0	\$38,872.8
AUTHORIZATION LEVELS	Authorization for the Federal Insecticide, Fungicide, Rodenticide Act expired September 30, 1986. Reauthorization is pending.					

PESTICIDES

OVERVIEW AND STRATEGY

Pesticides are among the most beneficial and the most hazardous of substances. Pesticide products provide benefits to society, contributing to agricultural productivity and controlling human diseases. Yet they are inherently hazardous since they are specifically formulated to be injurious to living target organisms, and are deliberately introduced into the environment for that purpose. The Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), as amended, and Sections 402, 406, 408, and 409 of the Federal Food, Drug, and Cosmetic Act (FFDCA) give the Environmental Protection Agency authority to regulate the distribution and use of pesticides in the United States. The Agency is responsible for ensuring that pesticides perform their intended functions without unreasonable adverse effects on public health and the environment. This is a task of enormous scope and complexity. An estimated 2.7 billion pounds of pesticide active ingredients are used annually in this country, representing about 1,500 different active ingredients and 50,000 products.

The 1989 Pesticides program strategically builds and expands upon accomplishments achieved by EPA in previous years, and reflects a continued commitment to fulfill the Congressional mandate to balance health and environmental protection with economic stability and growth. Traditionally, the Pesticides program has functioned as a national licensing program, focusing on the review of chemicals. In 1989, this national program will continue to play a major role, but will be enhanced by an increased Regional/State implementation presence. The Agency's 1989 pesticide regulation strategy includes the following elements: 1) registration of new products and control of pesticide residues in the food chain, 2) review and reregistration of existing products, 3) assuring pesticides are used correctly, and 4) research and development to support and improve EPA's ability to evaluate the risks and benefits of pesticides. In 1989, the Agency will place major emphasis on issuing Final Regulatory Standards and Tolerance Reassessments (FRSTRs) for existing pesticides with complete data sets, and achieving closure on the reregistration of these pesticides by revising formulations and labels for the affected end-use products, as required. The Agency also plans to make significant progress on the storage and disposal of cancelled/suspended pesticides.

Registration Activities

FIFRA and FFDCA authorize EPA to set the terms and conditions of pesticide registration, marketing, and use. Under the Registration program, new pesticide products are registered on the basis of data reviewed by Agency scientists, and current registrations are amended to add new uses and/or new formulations. Manufacturers are required to conduct a full range of health and environmental testing before marketing their new products. This testing uses sophisticated methodology and techniques, enabling the Agency to more accurately determine the potential for groundwater contamination, residues on food or feed, worker and applicator exposure/environmental risks, and chronic and acute health hazards.

The Special Registration program will continue to perform an auxiliary function by permitting certain unregistered pesticide uses for experimental purposes and to deal with emergency pest situations. It also provides oversight and guidance to State Registration and Experimental Use Permit programs. The Tolerance program establishes safe and enforceable maximum permissible residue levels (or in some instances exemptions from tolerance requirements) for both active and inert pesticide ingredients in or on raw agricultural commodities and processed foods.

Generic Chemical Review (including Reregistration)

The registrations of the majority of existing pesticide chemicals are supported by data bases which the Agency has found insufficient by today's standards to support the required determination of "no unreasonable adverse effects." The Generic Chemical Review program is designed to remedy this by requiring the upgrading of the scientific data base supporting registrations, reviewing available data about each chemical, and formulating scientifically based regulatory positions to guide the modification, cancellation, or reregistration of existing products and the registration of new products. The major activities which support this program are as follows:

(1) Registration Standards provide the basis for the interim reregistration of existing products and for the registration of new products containing currently registered active ingredients. Initially established on the basis of a thorough review of existing information on each pesticide, the Standards identify data gaps which must be filled, and explain the Agency's interim regulatory position on the use of active ingredients common to large numbers of pesticide products. The program is focusing on the review of the highest volume pesticides and food-use pesticides first in order to have the greatest impact.

(2) Final Regulatory Standards and Tolerance Reassessments (FRSTRs) with closure will be a major area of emphasis in 1989. When all the data required by a Registration Standard have been obtained, the initial Standard is revised to become a FRSTR, which permits the Agency to reregister the active ingredient. This in turn permits the program to achieve real world impact through reregistration closure, involving end-use product formulation and label changes, as required, for all products containing reregistered active ingredients. Alternatively, review during either the initial Registration Standard or the second-round standard (FRSTR) may result in initiation of Special Review.

(3) Special Review is a formal process by which pesticides suspected of causing unreasonable adverse effects are subjected to intensive risk/benefit analysis and appropriate regulatory action is taken, such as restricting or prohibiting specific uses of a pesticide. Special Reviews will continue to be a high priority.

(4) Greater emphasis will be placed on emerging problem areas, such as pesticides in ground water and endangered species protection from pesticides. These problems will entail a shift to more site-specific risk assessments and management decisions, requiring a larger Regional and State role. In 1989, the Agency will begin the implementation of its strategy for dealing with the problem of Agricultural Chemicals in Groundwater.

(5) Costs for the disposal of cancelled/suspended pesticides (currently ethylene dibromide (EDB), dinoseb, and 2,4,5-T/Silvex) will increase substantially in 1989. With 1988 funds, the Agency plans to complete final disposal of EDB stocks and a significant portion of the 2,4,5-T/Silvex stocks in 1988, depending on the availability of permitted facilities. In 1989, the Agency expects to make significant progress on final disposal of remaining 2,4,5-T/Silvex stocks and on transportation, storage and disposal of dinoseb.

Pesticides Enforcement

The enforcement provisions of FIFRA are carried out in major part through the cooperative efforts of the States and Territories, under a program of Federal-State cooperative enforcement agreements established with EPA. Participating States and Territories conduct use inspections, inspect pesticide-producing establishments, maintain marketplace surveillance, and inspect dealers and users of restricted-use pesticides. In most instances in which violations are detected, the States and Territories develop and prosecute enforcement cases as appropriate. In limited

numbers of cases, States and Territories may refer cases to EPA for action. The Agency encourages the States and Territories to design and operate their enforcement programs so as to place greatest emphasis upon compliance with the use provisions of FIFRA, thereby producing the greatest environmental benefit. The Agency will continue to support and manage these cooperative efforts in 1989.

The Agency conducts Federal pesticides compliance monitoring programs in cases in which States or Territories are unable or unwilling to support comprehensive compliance monitoring programs of their own. Federal programs in such instances include use investigations, import and export surveillance, and the preparation and prosecution of enforcement cases. Other activities that are exclusively the responsibilities of the Agency include providing technical and compliance assistance to the States, the regulated community and the public, and operating an automated data system which maintains information on compliance inspections, enforcement actions, and pesticide production. Through its technical and compliance assistance efforts, the Agency also emphasizes such areas as ground water contamination, farm-worker protection, development of State enforcement response policies under FIFRA Sections 26 and 27, and tracking FIFRA Section 3(c)(2)(B) product registration cancellations.

Research and Development

The Office of Research and Development (ORD) will continue to support the Office of Pesticide Programs (OPP) by performing research in the areas of test method development and validation; biomarkers, dosimetry and extrapolation; exposure monitoring; environmental engineering and technology; ecology; and biotechnology. In addition, ORD will continue to provide technical support to OPP in exposure assessment and monitoring procedures and risk assessment methodologies for oncogenicity, mutagenicity and both reproductive and developmental toxicity.

Additional biotechnology research will be performed in the areas of health effects, including the interactive genetic aspects of microbial pesticide agents containing recombinant genes with health implications, and environmental effects, including development of multispecies testing protocols. Increased resources will be used by ORD to develop and test technologies for the destruction and disposal of cancelled/suspended pesticides.

PESTICIDES

	Actual 1987	Budget Estimate 1988	Current Estimate 1988	Request 1989	Increase (+) Decrease (-) 1989 vs. 1988
PROGRAM ACTIVITIES					
Incremental Outputs					
Special Review Decisions..	15	13	13	13	---
New Chemical and Biochemical/ Microbial Agent Reviews .	253	330	330	330	---
Old Chemical Reviews	4,038	4,025	3,750	3,850	+100
Amended Registration Reviews	7,947	5,825	5,950	5,950	---
New Use Reviews	568	300	300	300	---
Emergency Exemption Reviews	391	250	250	250	---
Experimental Use Permit Reviews	329	400	400	400	---
24(c) State Registration Reviews	466	475	475	475	---
Temporary Tolerance Petition Reviews	108	150	150	150	---
Tolerance Petition Reviews	465	475	475	475	---
Inert Ingredient Reviews	49	60	60	60	---
Producer Establishment Inspections a/.....	1,910	2,070	2,070	2,070	---
Use/Reentry and Experimental Use Observations a/.....	18,457	18,000	18,000	18,000	---
Marketplace Investigations a/.....	8,428	4,000	4,000	4,000	---
Import Inspections a/.....	412	630	630	630	---
Applicator License and Record Inspections ..	9,196	18,000	18,000	18,000	---
State Dealer Record Inspections	6,399	18,100	18,100	18,100	---
Federal Laboratory Inspections	86	0	0	0	---
Test Study Audits	478	0	0	0	---
Warning Letters a/	5,380	5,220	5,220	5,220	---
Administrative Orders a/ ..	741	475	475	475	---
Civil Litigations a/	---	---	---	---	---
Criminal Litigations a/ ..	104	175	175	175	---
Registration Standard Guidance Packages Established	25	20	15	15	---
Final Regulatory Standards and Tolerance Reassessments (FRSTRs)	2	5	10	12	+2
Cumulative Outputs					
Registration Standard Guidance Packages Established	167	187	182	197	+15
Review of Incoming Studies on Existing Chemicals ...	1,478	2,183	2,068	2,658	+590

a/ Includes both Federal and State enforcement activities

ENVIRONMENTAL PROTECTION AGENCY

1989 Budget Estimate

Table of Contents

	<u>Page</u>
<u>PESTICIDES</u>	
RESEARCH & DEVELOPMENT	
Pesticides Research.....	P-8
Scientific Assessment.....	P-14
Monitoring Systems and Quality Assurance.....	P-14
Health Effects.....	P-15
Environmental Engineering and Technology.....	P-16
Environmental Processes and Effects.....	P-17

PESTICIDES
Pesticides Research

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988
--	----------------	----------------------------	-----------------	-----------------------------	-----------------	--

(DOLLARS IN THOUSANDS)

PROGRAM

Scientific Assessment -
Pesticides

Salaries & Expenses	\$384.0	\$440.8	\$420.3	\$420.3	\$429.5	\$9.2
Research & Development	\$316.7	\$363.3	\$363.3	\$363.3	\$343.6	-\$19.7
TOTAL	\$700.7	\$804.1	\$783.6	\$783.6	\$773.1	-\$10.5

Monitoring Systems &
Quality Assurance
Pesticides

Salaries & Expenses	\$392.8	\$438.7	\$415.8	\$415.8	\$424.9	\$9.1
Research & Development	\$1,178.1	\$1,065.4	\$969.4	\$957.2	\$957.2	
TOTAL	\$1,570.9	\$1,504.1	\$1,385.2	\$1,373.0	\$1,382.1	\$9.1

Health Effects -
Pesticides

Salaries & Expenses	\$1,883.4	\$2,215.1	\$2,122.6	\$2,122.6	\$2,169.1	\$46.5
Research & Development	\$1,849.6	\$1,811.0	\$1,681.0	\$1,667.9	\$1,667.9	
TOTAL	\$3,733.0	\$4,026.1	\$3,803.6	\$3,790.5	\$3,837.0	\$46.5

Environmental
Engineering And
Technology - Pesticides

Salaries & Expenses	\$55.5	\$61.0	\$52.0	\$52.0	\$159.4	\$107.4
Research & Development	\$801.5	\$907.9	\$801.9	\$790.2	\$2,115.0	\$1,324.8
TOTAL	\$857.0	\$968.9	\$853.9	\$842.2	\$2,274.4	\$1,432.2

Environmental Processes
& Effects - Pesticides

Salaries & Expenses	\$2,661.9	\$3,187.2	\$3,026.0	\$3,026.0	\$3,092.3	\$66.3
Research & Development	\$3,165.7	\$3,106.5	\$3,106.5	\$3,066.1	\$3,066.1	
TOTAL	\$5,827.6	\$6,293.7	\$6,132.5	\$6,092.1	\$6,158.4	\$66.3

PESTICIDES
Pesticides Research

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988

(DOLLARS IN THOUSANDS)						

TOTAL:

Salaries & Expenses	\$5,377.6	\$6,342.8	\$6,036.7	\$6,036.7	\$6,275.2	\$238.5
Research & Development	\$7,311.6	\$7,254.1	\$6,922.1	\$6,844.7	\$8,149.8	\$1,305.1

Pesticides Research	TOTAL	\$12,689.2	\$13,596.9	\$12,958.8	\$12,881.4	\$14,425.0	\$1,543.6
---------------------	-------	------------	------------	------------	------------	------------	-----------

PERMANENT WORKYEARS

Scientific Assessment - Pesticides	6.1	6.7	6.7	6.7	6.7	
Monitoring Systems & Quality Assurance Pesticides	6.3	7.4	7.4	7.3	7.3	
Health Effects - Pesticides	32.1	38.7	38.7	38.1	38.1	
Environmental Engineering And Technology - Pesticides	5	1.0	1.0	1.0	3.0	2.0
Environmental Processes & Effects - Pesticides	46.9	61.8	61.8	61.2	61.2	
TOTAL PERMANENT WORKYEARS	91.9	115.6	115.6	114.3	116.3	2.0

PESTICIDES
Pesticides Research

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988
----- (DOLLARS IN THOUSANDS) -----						
TOTAL WORKYEARS						

Scientific Assessment - Pesticides	6.3	6.7	6.7	6.7	6.7	
Monitoring Systems & Quality Assurance Pesticides	7.1	7.4	7.4	7.3	7.3	
Health Effects - Pesticides	35.4	38.7	38.7	38.1	38.1	
Environmental Engineering And Technology - Pesticides	1.3	1.0	1.0	1.0	3.0	2.0
Environmental Processes & Effects - Pesticides	55.2	61.8	61.8	61.2	61.2	
TOTAL WORKYEARS	105.3	115.6	115.6	114.3	116.3	2.0

P-10

PESTICIDES

Pesticides Research

Principal Outputs by Objective

Objective 1: Develop and Validate Test Methods for FIFRA Studies

- 1989: o Report on short-term predictors of chronic toxicity to pesticides on crustacean populations. (Environmental Processes)
 - o Assessment of neurotoxicity in workers occupationally exposed to organophosphorus pesticides: A neurobehavioral and biochemical study (Health)
- 1988: o Report on the role of salinity in toxicity of pesticides to crustaceans (Environmental Processes)
- 1987: o Final Report: Methods manual for spawning, culturing and testing antherinid fishes (Environmental Processes)
 - o Report describing validated test protocol to detect and characterize neurotoxicity (Health)

Objective 2: Perform Health Research on Biological Markers, Dosimetry and Extrapolation

- 1989: o Report on markers and dosimetry research activity for exposure monitoring (Monitoring)
 - o Report on biomarkers as indicators of pesticide exposure (Monitoring)
- 1988: o Systems plan for implementation of biomarkers/pharmacokinetics research program (Monitoring)

Objective 3: Perform Ecological Research Including Transport, Fate and Field Validation

- 1989: o Report on field validation of enclosure protocols for evaluating pesticides in natural waters (Environmental Processes)
 - o Groundwater pesticides assessment manual for the Office of Pesticide Programs, States and county extension professionals (Environmental Processes)
- 1988: o Report on effects of field applications of agricultural pesticides on estuarine biota (Environmental Processes)
- 1987: o User guide/manual for unsaturated-saturated zone pesticide exposure model (Environmental Processes)

Objective 4: Perform Engineering Research in Support of FIFRA

- 1989: o Report on the performance results of a pilot-scale trial burn of Dinoseb pesticide formulations (Engineering)
 - o Report on performance result of full-scale incineration operations of EDB inventory disposal (Engineering)

- o Report on small pilot-scale combustion characteristics of the pesticide Dinoseb utilizing low-NOx burner techniques (Engineering)
- 1988: o Report on field study of the effectiveness of protective clothing for agricultural pesticide operations (Engineering)
- o Report on laboratory study of the effectiveness of protective clothing materials for agricultural pesticide operations (Engineering)
- 1987: o Report on evaluations of the permeation resistance of polymer gloves for agricultural use in pesticide formulation (Engineering)

Objective 5: Perform Exposure Monitoring Research

- 1989: o Final report on the Non-Occupational Pesticide Exposure Study (NOPES) methodology (expanded to include a second city) (Monitoring)
- 1988: o Progress report on completion of the NOPES (Monitoring)

Objective 6: Perform Research on Biotechnology and Microbial and Biochemical Pest Control Agents

- 1989: o Final report on validation of selected multispecies test systems for natural and genetically engineered microbial pest control agents (Environmental Processes)
- o Microsporidion classification based on monoclonal antibodies
- o Report on survival of BCAs released into the atmosphere (Environmental Processes)
- 1988: o Report on the movement and survival of a biological control agent in two natural systems (Environmental Processes)
- 1987: o Report on laboratory testing and evaluation of selected MPCAs on non-target (terrestrial) arthropods (Environmental Processes)

Objective 7: Perform Studies on Ecotoxicity and Develop Environmental Risk Assessment Protocols

- 1989: o Report on relative importance of uptake routes of an organophosphate chemical (Environmental Processes)
- o Final report on biological data base for risk assessment (Environmental Processes)
- 1988: o Report on physiochemical factors affecting acute toxicity (Environmental Processes)

Objective 8: Provide Support Services for FIFRA Activities

- 1989: o Annual report on operation of pesticide repository (Monitoring)
- 1988: o Report on the spread of antibiotic resistance in the environment (Monitoring)

PESTICIDES

Pesticides Research

Budget Request

The Agency requests a total of \$14,425,000 supported by 116.3 total workyears for 1989, an increase of \$1,543,600 and 2.0 total workyears from 1988. Of the request, \$6,275,200 will be for the Salaries and Expenses appropriation and \$8,149,800 will be for the Research and Development appropriation, increases of \$238,500 and \$1,305,100, respectively.

Program Description

The Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) and the Federal Food, Drug and Cosmetics Act require the regulation of pesticide use to avoid unreasonable adverse effects to public health and the environment. The research program improves our understanding of how pesticides interact with human activities and the environment, to assure that their use minimizes damage from pests, while maximizing the protection of man's food, health and the environment.

Objective 1: Develop and Validate Test Methods for FIFRA Studies. This research effort develops and validates environmental and health test methods for use by industry to assist them in meeting pesticide registration requirements and enforcement responsibilities under Sections 3 and 26 of FIFRA.

Objective 2: Perform Health Research on Biological Markers, Dosimetry and Extrapolation. This research effort develops methods for extrapolating from high to low doses between mammalian species, evaluates dermal penetration of pesticides and examines structure activity relationships. Biological markers are evaluated and tested to determine their potential use in exposure monitoring studies. This information is used by the Agency to evaluate pesticide data submitted by industry as part of the registration and re-registration process.

Objective 3: Perform Ecological Research Including Transport, Fate and Field Validation. This research effort validates laboratory studies by quantifying pesticide effects through field testing in order to evaluate mortality, reproduction and recovery potential of fishes, invertebrates, birds and other organisms. This approach allows comparison between laboratory studies and actual field results. This research also investigates the movement of pesticides through the environment in order to determine the eventual disposition of pesticides in the environment.

Objective 4: Perform Engineering Research in Support of FIFRA. This research effort provides information on protective clothing and equipment for pesticide loaders, mixers, and applicators to meet the Office of Pesticides Programs' (OPP) regulatory needs under FIFRA.

Objective 5: Perform Exposure Monitoring Research. This research effort develops equipment and specialized monitoring protocols and procedures for total human exposure monitoring for pesticide exposure to characterize sources and routes of exposure for national pesticide monitoring efforts.

Objective 6: Perform Research on Biotechnology and Microbial and Biochemical Pest Control Agents. This research effort evaluates the effects of microbial and biochemical pest control agents (MBPCAs) and products of biotechnology on humans and the environment to support registration activities of OPP.

Objective 7: Perform Studies on Ecotoxicity and Develop Environmental Risk Assessment Protocols. This research effort provides the means to determine the risk posed to actual ecosystems by environmental pollutants by determining critical endpoints and devising mathematical models in order to predict impacts. This work will provide risk assessment protocols and guidelines for use in determining potential effects to terrestrial and aquatic ecosystems.

Objective 8: Provide Support Services for FIFRA Activities. This activity provides support to risk and exposure assessments by providing quality assurance materials and reference compounds for pesticide residue analyses.

SCIENTIFIC ASSESSMENT

1989 Program Request

The Agency requests a total of \$773,100 supported by 6.7 total workyears for this program, of which \$429,500 will be for the Salaries and Expenses appropriation and \$343,600 will be for the Research and Development appropriation. This represents an increase of \$9,200 and a decrease of \$19,700, respectively, and no change in total workyears. The decrease in the Research and Development appropriation reflects a minor shift from extramural research to inhouse research.

Develop and Validate Test Methods for FIFRA Studies. The Scientific Assessment program will continue to develop methods to determine reproductive dysfunction as well as pesticide specific assessment methods for exposure and health risks from cancer and mutagenicity. These methods will be used by industry to meet pesticides registration and re-registration responsibilities under Section 3 of FIFRA.

Provide Support Services for FIFRA Activities. The Scientific Assessment program will continue to prepare health risk assessments for cancer, mutagenicity, adverse reproductive/developmental effects and exposure to support OPP implementation of FIFRA Section 3 provisions for evaluating risk from pesticides use. Other efforts will provide for consultation on program office assessments.

1988 Program

In 1988, the Agency is allocating a total of \$783,600 supported by 6.7 total workyears for this program, of which \$420,300 is from the Salaries and Expenses appropriation and \$363,300 is from the Research and Development appropriation. The program is continuing to develop exposure risk assessment methods and prepare and review health risk assessments.

1987 Accomplishments

In 1987, the Agency obligated a total of \$700,700 supported by 6.3 total workyears for this program, of which \$384,000 was from the Salaries and Expenses appropriation and \$316,700 was from the Research and Development appropriation. In 1987, an analysis was made of the Linuron data base, a pesticide which was under Special Review, in order to validate the accuracy of data submitted to OPP. A technical issue paper on chlorodane and heptachlor was peer reviewed.

MONITORING SYSTEMS AND QUALITY ASSURANCE

1989 Program Request

The Agency requests a total of \$1,382,100 supported by 7.3 total workyears for this program, of which \$424,900 will be for the Salaries and Expenses appropriation and \$957,200 will be for the Research and Development appropriation.

This represents an increase of \$9,100 in the Salaries and Expenses appropriation and no change in the Research and Development appropriation or total workyears. The increase in the Salaries and Expenses appropriation reflects a general enhancement of inhouse support for the monitoring program.

Perform Health Research on Biological Markers, Dosimetry and Extrapolation. In this area, systematic studies will be undertaken to identify and test biological markers for use in monitoring human exposure to priority pesticide chemicals.

Perform Exposure Monitoring Research. This research will develop methods of measurement for total human exposure to pesticides. These methods will be used to provide data on actual human exposure to individual pesticides and to quantify frequency distributions and geographical and seasonal variability. Previous work has determined that site measurements of various pollutants do not provide representative data on actual personal exposure to individuals.

Provide Support Services for FIFRA Activities. This program will operate the pesticide and industrial chemical repository which annually distributes over 30,000 standard samples to over 1500 laboratories in over 50 countries. Emphasis will be placed on certification of compared purity in preparation and distribution of materials.

1988 Program

In 1988, the Agency is allocating a total of \$1,373,000 supported by 7.3 total workyears for this program, of which \$415,800 is from the Salaries and Expenses appropriation and \$957,200 is from the Research and Development appropriation. In 1988, a coordinated effort with the health research program will be underway to identify and test biological markers of exposure to priority pesticide chemicals. Monitoring equipment, expertise and staff to provide protocols and methodologies for total human exposure monitoring for pesticides will be provided.

1987 Accomplishments

In 1987, the Agency obligated a total of \$1,570,900 supported by 7.1 total workyears for this program, of which \$392,800 was from the Salaries and Expenses appropriation and \$1,178,100 was from the Research and Development appropriation. Annual reports were published for the data comparison program for pesticides and for the pesticides and industrial chemicals repository. The Non-Occupational Pesticide Exposure Study (NOPES) was initiated.

HEALTH EFFECTS

1989 Program Request

The Agency requests a total of \$3,837,000 supported by 38.1 total workyears for this program, of which \$2,169,100 will be for the Salaries and Expenses appropriation and \$1,667,900 will be for the Research and Development appropriation. This represents an increase of \$46,500 in the Salaries and Expenses appropriation and no change in the Research and Development appropriation or total workyears. The increase in the Salaries and Expenses appropriation reflects a general enhancement of inhouse support for the health effects program.

Develop and Validate Test Methods for FIFRA Studies. Health effects efforts will develop and refine bioassays for the detection of adverse developmental and reproductive effects for use by industry as part of FIFRA Section 3 evaluation of risks. Techniques will be developed, validated, refined and implemented for determining genetic effects caused by human exposure to chemical carcinogens

and mutagens. Methods will be developed to define the relationship between biological indicators of neurotoxicity and disease.

Perform Health Research on Biological Markers, Dosimetry and Extrapolation. Research efforts will develop animal models for assessing health risks caused by pesticides, including comparison of in vivo and in vitro methods for estimating the dermal penetration of pesticides. These models will assist in the evaluation of pesticides data submitted as part of the registration and re-registration process.

Perform Research on Biotechnology and Microbial and Biochemical Pest Control Agents. Research in this area will provide methods for detecting, identifying and monitoring biological pesticide agents in mammalian cells as a basis for test protocols to support microbial pesticide registration. Emphasis will be on the interactive aspects of genetically altered microbial pesticide control agents with health implications. The results of this research will provide the basis for validation of Subpart M guidelines for testing microbial pesticides.

1988 Program

In 1988, the Agency is allocating a total of \$3,790,500 supported by 38.1 total workyears for this program, of which \$2,122,600 is from the Salaries and Expenses appropriation and \$1,667,900 is from the Research and Development appropriation. Data on the effects of microbial and biochemical pest control agents and genetically engineered pesticides will be provided, health effects test methods are being developed, and research on extrapolation, dosimetry and biological markers are being performed.

1987 Accomplishments

In 1987, the Agency obligated a total of \$3,733,000 supported by 35.4 total workyears for this program, of which \$1,883,400 was from the Salaries and Expenses appropriation and \$1,849,600 was from the Research and Development appropriation. In 1987, protocols were developed in the area of immunotoxicology in support of FIFRA testing guidelines.

ENVIRONMENTAL ENGINEERING AND TECHNOLOGY

1989 Program Request

The Agency requests a total of \$2,274,400 supported by 3.0 total workyears for this program, of which \$159,400 will be for the Salaries and Expenses appropriation and \$2,115,000 will be for the Research and Development appropriation. This represents increases of \$107,400 and \$1,324,800, respectively, and an increase of 2.0 total workyears. This increase will fund additional testing and evaluation of environmentally sound and cost-effective technologies for the destruction and disposal of pesticides which have been cancelled and suspended under FIFRA.

Perform Engineering Research in Support of FIFRA. This research effort will increase to provide engineering support to test and evaluate environmentally safe and cost-effective technologies for the destruction and disposal of pesticide stocks cancelled and suspended under FIFRA. Activities will include assessments of existing or proposed technologies, recommending and preparing action plans for disposal, and technical specifications for the disposal/destruction of cancelled and suspended pesticides. Evaluation of selected protective garments for pesticide applicators and formulators will also be conducted.

1988 Program

In 1988, the Agency is allocating a total of \$842,200 supported by 1.0 total workyear for this program, of which \$52,000 is from the Salaries and Expenses appropriation and \$790,200 is from the Research and Development appropriation. Engineering research activities are continuing to provide information on the effectiveness of protective garments for pesticide mixers, loaders and applicators as well as research on disposal/destruction technologies for cancelled and suspended pesticides.

1987 Accomplishments

In 1987, the Agency obligated a total of \$857,000 supported by 1.3 total workyears for this program, of which \$55,500 was from the Salaries and Expenses appropriation and \$801,500 was from the Research and Development appropriation. Significant progress was made on the development of a laboratory method for measuring the permeation of pesticide formulations through polymer gloves.

ENVIRONMENTAL PROCESSES AND EFFECTS

1989 Program Request

The Agency requests a total of \$6,158,400 supported by 61.2 total workyears for this program, of which \$3,092,300 will be for the Salaries and Expenses appropriation and \$3,066,100 will be for the Research and Development appropriation. This represents an increase of \$66,300 in Salaries and Expenses and no change in the Research and Development appropriation or total workyears. The increase in the Salaries and Expenses appropriation reflects a general enhancement of inhouse support for this program.

Develop and Validate Test Methods for FIFRA Studies. Research efforts will develop and validate bioassays and other methodologies for use as standardized testing protocols to determine the effects of chemical pesticides on marine, freshwater and terrestrial animals. These efforts will provide testing methods which the Agency can recommend for use by pesticide manufacturers.

Perform Ecological Research Including Transport, Fate and Field Validation. Research in this area will concentrate on the development, refinement and validation of techniques and models to predict pesticide transport, degradation and fate, as well as exposure estimates of pesticides through surface and subsurface matrices. The effects of pesticides on estuarine biota and avians will be investigated. Aquifer types, run-off problems, and no till agricultural practices will be evaluated for their relationship to groundwater pollution.

Perform Research on Biotechnology and Microbial and Biochemical Pest Control Agents. Research in this area will develop and improve testing protocols for unaltered Microbial Pest Control Agents (MPCAs) and genetically altered Biological Control Agents (BCAs). Research results will supply testing protocols for subpart M guidelines used by industry to provide data on which regulatory actions are based.

Perform Studies on Ecotoxicity and Develop Environmental Risk Assessment Protocols. Research in this area will develop methodologies to predict risk to ecosystems. The development of ecological risk assessment protocols and guidance for terrestrial and aquatic ecosystems is necessary to quantify the probability that adverse effects may occur as a result of exposure to pesticides and to estimate the significance of such effects in the environment. Activities will include developing risk assessment methodologies for pesticides by combining exposure and hazard data via transport, fate and effects models. Physiochemical factors and

impacts of pesticides on different populations will be incorporated into ecological risk assessments.

1988 Program

In 1988, the Agency is allocating a total of \$6,092,100 supported by 61.2 total workyears for this program, of which \$3,026,000 is from the Salaries and Expenses appropriation and \$3,066,100 is from the Research and Development appropriation. This program will develop test methods in support of FIFRA guidelines, perform research on transport, fate and field validation, and determine the effects of biological pest control agents.

1987 Accomplishments

In 1987, the Agency obligated a total of \$5,827,600 supported by 55.2 total workyears for this program, of which \$2,661,900 was from the Salaries and Expenses appropriation and \$3,165,700 was from the Research and Development appropriation. Sixteen major reports supplied the Agency information on toxicity methods, on field effects and exposure estimates, and on biotechnological studies and risk evaluations.

ENVIRONMENTAL PROTECTION AGENCY

1989 Budget Estimate

Table of Contents

	<u>Page</u>
<u>PESTICIDES</u>	
ABATEMENT & CONTROL	
Registration, Special Registration & Tolerances.....	P-20
Registration.....	P-22
Special Registration.....	P-24
Tolerances.....	P-25
Generic Chemical Review.....	P-27
Generic Chemical Review.....	P-28

PESTICIDES
Registration, Special Registration & Tolerances

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988
--	----------------	----------------------------	-----------------	-----------------------------	-----------------	--

(DOLLARS IN THOUSANDS)

PROGRAM

Registration						
Salaries & Expenses	\$9,232.7	\$8,839.1	\$8,776.0	\$8,776.0	\$8,758.3	-\$17.7
Abatement Control and Compliance	\$3,369.1	\$3,230.0	\$3,230.0	\$3,230.0	\$3,230.0	
TOTAL	\$12,601.8	\$12,069.1	\$12,006.0	\$12,006.0	\$11,988.3	-\$17.7

Special Registration						
Salaries & Expenses	\$1,871.8	\$2,089.4	\$2,071.4	\$2,071.4	\$2,111.8	\$40.4
TOTAL	\$1,871.8	\$2,089.4	\$2,071.4	\$2,071.4	\$2,111.8	\$40.4

Tolerances						
Salaries & Expenses	\$2,607.0	\$2,898.3	\$2,873.0	\$2,873.0	\$2,927.8	\$54.8
TOTAL	\$2,607.0	\$2,898.3	\$2,873.0	\$2,873.0	\$2,927.8	\$54.8

TOTAL:						
Salaries & Expenses	\$13,711.5	\$13,826.8	\$13,720.4	\$13,720.4	\$13,797.9	\$77.5
Abatement Control and Compliance	\$3,369.1	\$3,230.0	\$3,230.0	\$3,230.0	\$3,230.0	

Registration, Special Registration & Tolerances	TOTAL	\$17,080.6	\$17,056.8	\$16,950.4	\$16,950.4	\$17,027.9	\$77.5
---	-------	------------	------------	------------	------------	------------	--------

PERMANENT WORK YEARS

Registration	183.3	166.0	170.0	161.1	160.0	-1.1
Special Registration	36.4	39.2	39.2	38.7	39.2	.5

PESTICIDES
Registration, Special Registration & Tolerances

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988
----- (DOLLARS IN THOUSANDS) -----						
Tolerances	65.1	69.9	69.9	69.0	69.9	.9
TOTAL PERMANENT WORKYEARS	284.8	275.1	279.1	268.8	269.1	.3
TOTAL WORKYEARS -----						
Registration	195.0	166.0	170.0	161.1	160.0	-1.1
Special Registration	39.0	39.2	39.2	38.7	39.2	.5
Tolerances	68.9	69.9	69.9	69.0	69.9	.9
TOTAL WORKYEARS	302.9	275.1	279.1	268.8	269.1	.3

PESTICIDES

Registration, Special Registration, and Tolerances

Budget Request

The Agency requests a total of \$17,027,900 supported by 269.1 total workyears for 1989, an increase of \$77,500 and 0.3 total workyears from 1988. Of the request, \$13,797,900 will be for the Salaries and Expenses appropriation and \$3,230,000 will be for the Abatement, Control and Compliance appropriation, an increase of \$77,500 in the Salaries and Expenses appropriation and no change in the Abatement, Control and Compliance appropriation.

Program Description

The Agency evaluates all proposed pesticides under a "no unreasonable adverse effects" standard, taking into account the economic, social, and environmental risks and benefits of the use of any pesticide. These activities are authorized by the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), which requires that a pesticide be registered by EPA before it can legally be sold, distributed, or made available for use, and the Federal Food, Drug, and Cosmetic Act (FFDCA), which requires the establishment of safe pesticide residue levels on food and feed. This subactivity includes three program areas:

Registration -- Under this program, new pesticide products may be registered and current registrations may be amended to add uses or new formulations. Registration decisions involve: 1) reviewing formulation, effect, exposure, and use data to ensure that product use will not result in "unreasonable adverse effects"; and 2) limiting the risks associated with use through label precautions, special packaging requirements, application directions, and where necessary, restriction of use to trained applicators.

Special Registration -- The purpose of this program is to respond to requests for experimental use permits and emergency exemptions. These permit the use of unregistered pesticides, or the use of registered pesticides for sites/pests not included in their registration, to generate registration data or meet pest emergencies. The program also reviews state registrations of pesticides for special local needs and state plans for experimental use permits. These functions are required by Sections 5, 18, and 24 of FIFRA.

Tolerances -- The goal of this program is to protect public health while giving appropriate consideration to the production of an adequate, wholesome, and economical food supply. This is achieved by establishing tolerance levels for residues of both active and inert pesticide ingredients (or exemption from the requirements of a tolerance) in or on raw agriculture commodities and processed foods. Temporary tolerances may be established for food or feed crops to be marketed following the application of experimental use pesticides. Testing of analytical methods ensures that established tolerances can be adequately enforced.

REGISTRATION

1989 Program Request

The Agency requests a total of \$11,988,300 supported by 160.0 total workyears for this program, of which \$8,758,300 will be for the Salaries and Expenses appropriation and \$3,230,000 will be for the Abatement, Control and Compliance appropriation. This represents a decrease of \$17,700 in the Salaries and Expenses appropriation, no change in the Abatement, Control and Compliance appropriation,

and a decrease of 1.1 total workyears. The decreases in Salaries and Expenses and total workyears reflect a minor realignment of resources within the overall Pesticides program.

In 1989, the Agency expects to conduct 330 reviews of new chemicals and biochemical/microbial agents, 3,850 reviews of old chemicals, 5,950 amended registration reviews, and 300 new use reviews. This is essentially the same level of reviews as is expected in 1988. Ongoing activities include the application of more stringent requirements for conditional registrations; the enhancement of the quality of scientific reviews through standard evaluation procedures; and the automated integration of EPA records of scientific studies, reviews, product information and other data, including product formula information. Registration reviews will continue to emphasize impact on ground water and endangered species.

The emphasis on processing of new chemicals and new uses (especially the first food use of any pesticide) will be continued in 1989. Resources used in 1988 for the old chemicals and amendments productivity initiative will be redirected in 1989 to process old chemical reviews. Continued attention will be given to biochemical/microbial agents to determine the scope of required regulatory changes and necessary interagency coordination.

Increased emphasis will be given to ground water contamination including registrant monitoring, more extensive use of environmental fate test data, geographical restrictions, and restricted use classifications. This will help prevent future environmental cleanup problems. Revisions to the Agricultural Worker Protection Standards regulations (40 CFR 170) governing pesticide-treated field reentry intervals, protective clothing, other work practices, and label warnings are expected to be published as a final rule. In 1989, registration fees will be collected following the expected publication of a final rule in 1988.

Regional liaison will be improved by detailing Headquarters personnel to Regional offices or hiring and training new staff. This will improve Regional and State understanding of Headquarters regulatory activities, involve them more routinely in consultations on policies affecting their mission, and provide feedback to Headquarters on issues of concern to specific Regions and States. Increased liaison efforts will also facilitate enforcement, improve public understanding and compliance with EPA policies, improve oversight of Section 18 (emergency exemptions) and Section 24(c) (special local needs) programs, and relieve the burden on Headquarters resources posed by special problems (e.g., container disposal, ground water contamination) which can be more effectively addressed at the Regional level.

1988 Program

In 1988, the Agency is allocating a total of \$12,006,000 supported by 161.1 total workyears for this program, of which \$8,776,000 is from the Salaries and Expenses appropriation and \$3,230,000 is from the Abatement, Control and Compliance appropriation.

In 1988, resources are being shifted from old chemical and amended registration reviews to the Regions (via the Certification and Training program) in order to develop an expert Regional capability for pesticide regulatory activities. The reduction in resources for old chemicals and amendments will reduce outputs and increase average elapsed times for these types of reviews. However, an evaluation of the productivity of the old chemicals and amendments review process will be used to attempt to reduce the cost of these activities while insuring adequate quality of required reviews. Any cost reductions achieved through the productivity initiative will result in increased outputs and shorter delays.

Proposed revisions to the Agricultural Worker Protection Standards and a final rule for registration fees are expected to be published in 1988.

1987 Accomplishments

In 1987, the Agency obligated a total of \$12,601,800 supported by 195.0 total workyears for this program, of which \$9,232,700 was from the Salaries and Expenses appropriation and \$3,369,100 was from the Abatement, Control and Compliance appropriation.

In 1987, the Registration program actively worked to reduce risks to human health and the environment by maintaining priority consideration of new chemicals and new uses to permit more rapid entry into the marketplace of new, potentially safer, chemicals which may replace hazardous chemicals that remain in use because no alternatives exist. Continued special attention was given to biochemical/microbial agents. A notice of proposed rulemaking was published in 1987 concerning imposition of registration fees.

SPECIAL REGISTRATION

1989 Program Request

The Agency requests a total of \$2,111,800 supported by 39.2 total workyears for this program, all of which will be for the Salaries and Expenses appropriation. This represents increases of \$40,400 and 0.5 total workyears. The increases reflect a minor realignment of resources within the overall Pesticides program.

Projected outputs for 1989 for emergency exemption reviews, experimental use permit (EUP) reviews, and State and special local need reviews are the same as in 1988. Stringent criteria for granting Section 18 exemptions, such as consideration of progress towards permanent registration and clarification of "emergency" and "significant economic loss", will continue to be applied to avoid circumvention of the full registration process. Headquarters will continue to work closely with the Regions to monitor emergency exemptions and State and local needs provisions to prevent circumvention of registration requirements.

In 1989, the Agency expects to accomplish 400 EUP reviews, 250 emergency exemption reviews and 475 State and special local need reviews. Rapid communication with affected parties and States and other measures will be continued to minimize processing times and backlogs. Special emphasis will continue to be placed on the regulatory implications of genetically engineered, microbial pesticides (GEMPs).

1988 Program

In 1988, the Agency is allocating a total of \$2,071,400 supported by 38.7 total workyears for this program, all of which is from the Salaries and Expenses appropriation.

In 1988, State participation in the Emergency Exemption, Experimental Use Permit, and Special Local Needs programs is being enhanced through EPA guidance and close Federal/State cooperation. For experimental use permits, special emphasis is being placed on the review of products of biotechnology, which involves special skills and expedited review not required of more conventional pesticides.

1987 Accomplishments

In 1987, the Agency obligated a total of \$1,871,800 supported by 39.0 total workyears for this program, all of which was from the Salaries and Expenses appropriation.

In 1987, the Agency completed a review of regulations issued in 1986 that established more stringent criteria for granting emergency exemptions. The report found that the revised regulations were helping assure the validity of the exemption requests and that compliance with the regulations was good. Certain genetically engineered microbial pesticides, requiring notification to the Agency of intended small-scale field testing, were evaluated and experimental use permits were issued, when appropriate, to allow for experimentation with nonregistered products or uses to develop data needed for registration.

TOLERANCES

1989 Program Request

The Agency requests a total of \$2,927,800 supported by 69.9 total workyears for this program, all of which will be for the Salaries and Expenses appropriation. This represents increases of \$54,800 and 0.9 total workyears. The increases reflect a minor realignment of resources within the overall Pesticides program.

Requested resources will permit an anticipated 475 tolerance petition reviews, 150 temporary tolerance petition reviews, and 60 reviews of inert ingredient requests, the same level as in 1988. Special emphasis will be placed on policies to ensure that tolerances reflect the most current regulatory status of each active ingredient including revocation of tolerances on cancelled pesticides and tolerance reassessments in conjunction with Registration Standard review.

Certain facets of the Tolerance Assessment System (TAS), used to determine estimates of dietary exposure to pesticide residues, will be available in micro-computer form for use by Agency officials to improve decision-making. Tolerance fees will be increased to reflect any increase in the General Schedule payscale.

The processing of tolerance petitions will be modified as required by Agency decisions in response to the 1987 National Academy of Sciences (NAS) report concerning the "Delaney Clause" of the Federal Food, Drug, and Cosmetic Act (FFDCA). Resources for follow-up to the NAS report are in the Generic Chemical Review program since the major issues relating to tolerance reassessments involve existing chemicals reviewed as part of the reregistration program.

1988 Program

In 1988, the Agency is allocating a total of \$2,873,000 supported by 69.0 total workyears for this program, all of which is from the Salaries and Expenses appropriation.

The Tolerance Assessment System (TAS) is being updated and refined for use by Agency risk managers. Increased emphasis is being placed on evaluating potential risks of inert ingredients and contaminants. Crop group tolerances continue to be used where applicable to reduce data requirements and efficiently deal with minor uses. A strategy for implementing the recommendations in the 1987 NAS report is being prepared. Tolerance fees are being increased by the percentage increase in pay for General Schedule employees.

1987 Accomplishments

In 1987, the Agency obligated a total of \$2,607,000 supported by 68.9 total workyears for this program, all of which was from the Salaries and Expenses appropriation.

The National Academy of Sciences (NAS) issued a report in response to an Agency request for a review of EPA's pesticide tolerance-setting methods in light of the "Delaney Clause" of the Federal Food, Drug, and Cosmetic Act.

The computer-based Tolerance Assessment System (TAS) was used for determining estimates of dietary exposure to pesticide residues. Tolerance fees were increased by three percent (3%) in 1987 to reflect the General Schedule payraise for civilian employees.

PESTICIDES
Generic Chemical Review

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED • 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988
--	----------------	----------------------------	-------------------	-----------------------------	-----------------	--

(DOLLARS IN THOUSANDS)

PROGRAM

Generic Chemical Review

Salaries & Expenses	\$14,213.8	\$16,353.6	\$16,604.4	\$16,604.4	\$16,696.9	\$92.5
Abatement Control and Compliance	\$10,912.9	\$10,404.7	\$19,104.7	\$19,104.7	\$70,404.7	\$51,300.0
TOTAL	\$25,126.7	\$26,758.3	\$35,709.1	\$35,709.1	\$87,101.6	\$51,392.5

TOTAL:

Salaries & Expenses	\$14,213.8	\$16,353.6	\$16,604.4	\$16,604.4	\$16,696.9	\$92.5
Abatement Control and Compliance	\$10,912.9	\$10,404.7	\$19,104.7	\$19,104.7	\$70,404.7	\$51,300.0

Generic Chemical Review	TOTAL	\$25,126.7	\$26,758.3	\$35,709.1	\$35,709.1	\$87,101.6	\$51,392.5
-------------------------	-------	------------	------------	------------	------------	------------	------------

PERMANENT WORKYEARS

Generic Chemical Review	254.9	307.2	323.2	319.4	319.3	-.1
TOTAL PERMANENT WORKYEARS	254.9	307.2	323.2	319.4	319.3	-.1

TOTAL WORKYEARS

Generic Chemical Review	272.5	307.2	323.2	319.4	319.3	-.1
TOTAL WORKYEARS	272.5	307.2	323.2	319.4	319.3	-.1

PESTICIDES

Generic Chemical Review

Budget Request

The Agency requests a total of \$87,101,600 supported by 319.3 total work-years for 1989, an increase of \$51,392,500 and a decrease of 0.1 workyears from 1988. Of the request, \$16,696,900 will be for the Salaries and Expenses appropriation, and \$70,404,700 will be for the Abatement, Control and Compliance appropriation, increases of \$92,500 and \$51,300,000, respectively.

Program Description

This subactivity includes: 1) Registration Standards and Final Regulatory Standards and Tolerance Reassessments (FRSTRs) to enable the Agency to meet efficiently the statutory mandate to update and reexamine information on currently registered pesticides and to reregister them, and 2) Special Reviews conducted to rigorously evaluate the risks and benefits of pesticides with an identified potential for producing significant adverse health or environmental effects, and to take appropriate regulatory action (e.g., suspend, cancel, modify, or return to registration).

GENERIC CHEMICAL REVIEW

1989 Program Request

The Agency requests a total of \$87,101,600 supported by 319.3 total workyears for this program, of which \$16,696,900 will be for the Salaries and Expenses appropriation, and \$70,404,700 will be for the Abatement, Control and Compliance appropriation. This represents an increase of \$92,500 in the Salaries and Expenses appropriation, an increase of \$51,300,000 in the Abatement, Control and Compliance appropriation, and a decrease of 0.1 total workyears. The increase in Salaries and Expenses reflects increased personnel costs. The increase in the Abatement, Control and Compliance appropriation reflects a substantial increase in the level of support for pesticides disposal.

The Agency's responsibility to bear the costs of disposal of cancelled/suspended pesticides will continue in 1989. Under current law, the Agency is required to accept for safe disposal those pesticide stocks which have been suspended under Section 6(c) of FIFRA, and subsequently cancelled. Significant new resources will be needed for this effort in 1989 to protect public health and the environment from the potential hazard that these pesticides present. The large increase in resources will allow for significant progress toward final disposal of 2,4,5-T/Silvex stocks and on decanning, transportation, storage and disposal of dinoseb.

The program will continue the emphasis, begun in 1988, on issuance of Final Regulatory Standards and Tolerance Reassessments (FRSTRs) with reregistration closure. Twelve FRSTRs with reregistration closure will be conducted compared to ten planned in 1988. FRSTRs are the product of the updating of Registration Standards when all of the data required by the Data Call-In and Registration Standards programs are available and reviewed.

The Agency also expects to establish 15 initial Registration Standards in 1989, the same number as in 1988. Initial standards will continue to be developed for potentially high risk pesticides, and to provide for the continued development of substantially complete data bases for FRSTR review in future years. The number

of initial standards actually established in a given year may vary according to their relative priority with respect to candidates for FRSTRs.

The Agency will continue to address the complex issues raised by the National Academy of Sciences (NAS) 1987 study of the Delaney Clause of the Federal Food, Drug, and Cosmetic Act (FFDCA). These issues have potentially far-reaching effects on the reregistration program.

As a result of ground water contamination concerns, a long-term collaborative effort is being developed by EPA Headquarters, the Regions, and the States to integrate pesticide and ground water management programs. The Agency will continue efforts to assess the potential for agricultural pesticides to contaminate the nation's supply of underground drinking water, including both the likely extent and degree of contamination. In addition, ground water contamination concerns will be considered in reregistration and registration reviews. The Regions will continue the effort begun in 1988 to develop an expert Regional capability to support pesticide regulatory activities, including a strong focus on ground water concerns, other geographic-specific environmental concerns, and Regional monitoring.

Review of studies called in during prior years, including studies of ground water contamination and chronic health effects, will be continued. Priority will be given to those studies which meet flagging criteria indicating potential adverse effects. Remaining studies will be reviewed in the course of FRSTR reviews.

Resources requested for 1989 will enable the completion of 13 Special Review decisions. Special Reviews will be initiated according to criteria which realistically reflect actual risk, and will emphasize ground water considerations, accelerated decision making, and increased use of restricted use classifications to control risk. The number of Special Reviews may vary since the initiation of Special Reviews is responsive to the identification of potential risks during Registration Standards development and the receipt of studies from Registration Standards and Data Call-In indicating potential adverse effects, the outcomes of which cannot be predetermined. If fewer or additional Special Reviews are required, resources may be shifted between Special Reviews and Registration Standards or FRSTRs. Administrative hearings will be held as required on regulatory action proposed by the Agency in the Special Review process.

The results of lab audits will be employed in the Special Review and Registration processes to assure the validity of health and environmental effects data used to support pesticide registration actions. Monitoring of selected pesticide exposure problems and accidental exposure incidents will be continued in cooperation with various Federal, State and other institutional sources. The use of Integrated Pest Management (IPM) techniques in urban pest management will be furthered in cooperation with other agencies. IPM will be considered in Special Reviews, on a case-by-case basis, among the full range of potential risk-reduction measures examined.

1988 Program

In 1988, the Agency is allocating a total of \$35,709,100 supported by 319.4 total workyears for this program, of which \$16,604,400 is from the Salaries and Expenses appropriation and \$19,104,700 is from the Abatement, Control and Compliance appropriation.

The Generic Chemical Review program element is undergoing a number of significant changes in emphasis in 1988:

The reregistration program is undergoing a shift to the production of second-round Registration Standards or FRSTRs including label and formulation changes on end-use products (FRSTRs with reregistration closure). This shift will permit EPA to begin to address complete data bases which are accumulating faster

than they can be reviewed, and will result in greater environmental payoffs and greater real world impacts from the reregistration program. Ten FRSTRs with reregistration closure are planned for 1988.

The Agency expects to establish 15 Registration Standards in 1988, five less than anticipated in the 1988 President's Budget. This reduction will permit a shift in resources to FRSTRs with reregistration closure. Initial standards continue to be developed for potentially high risk pesticides, and provide for the continued development of substantially complete data bases for second-round or FRSTR review in future years. Registration Standards follow-up is being enhanced to obtain more complete payoff both from Registration Standards already developed and from other actions such as the call-in of toxicology and exposure information for anti-microbials.

Resources are being redirected to respond to the Delaney Clause issues highlighted in the National Academy of Sciences report, including a likely requirement to reassess tolerances for the highest risk and most widely used pesticides. Thirteen Special Reviews are projected for 1988. Automated decision support systems for assessing dietary exposure are being enhanced to support this work.

In accordance with the shift in the focus of ground-water initiatives to the Regions and the States, Headquarters personnel are being utilized to provide ground-water technical assistance to the Regions. In addition, the Agency is continuing efforts to assess the potential for agricultural pesticides to contaminate the nation's supply of underground drinking water, including both the likely extent and degree of contamination.

Resource needs for pesticides disposal increase in 1988. Available resources are being used to continue evaluation of alternative disposal methods for all suspended/cancelled chemicals (ethylene dibromide (EDB), 2,4,5-T/Silvex, and dinoseb). The Agency plans to dispose of all national stocks of EDB and a significant portion of the 2,4,5-T/Silvex stocks, depending on the availability of permitted disposal facilities. The Agency anticipates that a portion of the dinoseb stocks that have already been cancelled/suspended may be decanned and stored in 1988.

1987 Accomplishments

In 1987, the Agency obligated a total of \$25,126,700 supported by 272.5 total workyears for this program, of which \$14,213,800 was from the Salaries and Expenses appropriation and \$10,912,900 was from the Abatement, Control and Compliance appropriation.

In 1987, two FRSTRs were conducted, 25 Registration Standards were established, and Special Review decisions were reached on 15 chemicals. New review procedures were in effect providing for early involvement of all appropriate EPA offices in the development of regulatory decisions, including Special Reviews.

In 1987, the Data Call-In program called in selected missing data for antimicrobial pesticides. The program also continued to develop improvements in the product chemistry data base necessary to determine inerts, impurities, and contaminants which are of toxicological concern in pesticide products.

Laboratory data audits were conducted by the Agency or cooperatively with other agencies to ensure the development of high-quality test data on the health and environmental effects of pesticides. The National Pesticide Monitoring Plan was completed and transmitted to Congress.

ENVIRONMENTAL PROTECTION AGENCY

1989 Budget Estimate

Table of Contents

	<u>Page</u>
<u>PESTICIDES</u>	
ENFORCEMENT	
Pesticides Enforcement.....	P-32
Pesticides Enforcement.....	P-35
Pesticides Enforcement Grants.....	P-36
Pesticides Certification & Training.....	P-37
Pesticides Certification & Training Grants.....	P-38

PESTICIDES
Pesticides Enforcement

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988
----- (DOLLARS IN THOUSANDS) -----						
PROGRAM						

Pesticides Enforcement						
Salaries & Expenses	\$4,500.2	\$4,942.1	\$4,852.0	\$4,852.0	\$5,013.3	\$161.3
Abatement Control and Compliance	\$255.0	\$105.0	\$105.0	\$105.0	\$105.0	
TOTAL	\$4,755.2	\$5,047.1	\$4,957.0	\$4,957.0	\$5,118.3	\$161.3
Pesticides Enforcement Grants						
Abatement Control and Compliance	\$8,624.2	\$8,703.4	\$8,703.4	\$8,703.4	\$8,703.4	
TOTAL	\$8,624.2	\$8,703.4	\$8,703.4	\$8,703.4	\$8,703.4	
Pesticides Certification & Training Program						
Salaries & Expenses	\$519.2	\$684.4	\$1,030.5	\$1,030.5	\$1,043.8	\$13.3
TOTAL	\$519.2	\$684.4	\$1,030.5	\$1,030.5	\$1,043.8	\$13.3
Pesticides Certification & Training Grants						
Abatement Control and Compliance	\$2,482.9	\$4,000.0	\$4,000.0	\$4,000.0	\$4,000.0	
TOTAL	\$2,482.9	\$4,000.0	\$4,000.0	\$4,000.0	\$4,000.0	
TOTAL:						
Salaries & Expenses	\$5,019.4	\$5,626.5	\$5,882.5	\$5,882.5	\$6,057.1	\$174.6
Abatement Control and Compliance	\$11,362.1	\$12,808.4	\$12,808.4	\$12,808.4	\$12,808.4	
Pesticides Enforcement TOTAL	\$16,381.5	\$18,434.9	\$18,690.9	\$18,690.9	\$18,865.5	\$174.6

PESTICIDES
Pesticides Enforcement

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988
--	----------------	----------------------------	-----------------	-----------------------------	-----------------	--

(DOLLARS IN THOUSANDS)

PERMANENT WORK YEARS

Pesticides Enforcement	97.0	104.9	104.9	98.2	104.6	6.4
Pesticides Certification & Training Program	10.4	15.4	15.4	22.1	22.4	.3
TOTAL PERMANENT WORK YEARS	107.4	120.3	120.3	120.3	127.0	6.7

TOTAL WORK YEARS

Pesticides Enforcement	105.1	104.9	104.9	104.6	104.6	
Pesticides Certification & Training Program	11.1	15.4	15.4	22.4	22.4	
TOTAL WORK YEARS	116.2	120.3	120.3	127.0	127.0	

PESTICIDES

Pesticides Enforcement

Budget Request

The Agency requests a total of \$18,865,500 supported by 127.0 total workyears for 1989, an increase of \$174,600 and no change in total workyears from 1988. Of the request, \$6,057,100 will be for the Salaries and Expenses appropriation and \$12,808,400 will be for the Abatement, Control, and Compliance appropriation, an increase of \$174,600 in the Salaries and Expenses appropriation and no change in the Abatement, Control and Compliance appropriation.

Program Description

The purpose of this subactivity is to assure that the pesticide industry -- users, producers and distributors -- complies with the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA). This is accomplished primarily by State activities conducted under cooperative agreements with EPA. In addition, this subactivity will rebuild pesticide applicator certification and training programs in general and provide nationally consistent and credible programs across the country to train and certify applicators, ensuring their competence to use restricted use pesticides.

The program areas under this subactivity include the following:

Pesticides Enforcement -- The pesticide enforcement program provides direction and assistance to the States and, where the States do not operate comprehensive programs, operates programs directly. The Regional offices negotiate and manage cooperative agreements under which the States operate enforcement and pesticide applicator certification and training programs. The Regions assist the States with enforcement actions and prepare and issue notices of violation and administrative orders in instances where a State does not participate in the cooperative enforcement program or where a State refers a case to the Agency for action. The Regions provide technical and compliance assistance to the agricultural chemical industry, commercial and private pesticide applicators, user groups, and States.

The Headquarters component of the Pesticides Enforcement program establishes national program priorities. It also provides support in the development of new FIFRA regulations and develops enforcement response policies and compliance monitoring strategies for each new rule. Special Review decisions and key Registration and Data Call-In activities also require enforcement input and assistance. Headquarters prepares annual guidance for the cooperative Federal/State enforcement program.

Pesticides Enforcement Grants -- This program accounts for the bulk of pesticide compliance activities in the United States. Under the terms of cooperative agreements with EPA, the States investigate pesticide use, misuse and reentry matters, inspect pesticide producer establishments, and provide marketplace surveillance. The States also survey pesticide imports, inspect pesticide dealer records, and review commercial applicator records under this program.

Pesticides Certification and Training -- The Agency's Pesticides Certification and Training (C&T) program provides guidance and assistance to the States and, where the States do not operate C&T programs, operates programs to train and certify applicators to use restricted use pesticides. The Regional offices negotiate and manage cooperative agreements under which the States operate certification programs. The Regions evaluate State C&T programs, identify Regional C&T issues, and assist the States in implementing regulatory decisions affecting

certification and training. The Regions conduct follow-up C&T reviews to ensure implementation of agreed-upon changes to State C&T programs.

The Headquarters staff of the Certification and Training program establishes national program priorities and C&T requirements. It develops national C&T strategies as chemicals are classified for restricted use and national C&T issues are identified. It establishes priorities for developing training material, and prepares annual guidance for the cooperative Federal/State certification program.

Pesticides Certification and Training Grants -- This program is designed to insure that only competent, trained applicators handle, apply, store and dispose of restricted use pesticides. EPA funds cooperative agreements with States to certify applicators to use restricted use pesticides. State certification programs must be approved by EPA and must provide not only initial certification, but also mechanisms for maintaining applicators' competency. This is accomplished by requiring applicators periodically to renew their certification by completing State-specific requirements.

EPA has an interagency agreement with the U.S. Department of Agriculture (USDA) to provide training to pesticide applicators by working through State Cooperative Extension Services. Applicators receive training in the areas of safe and effective use of pesticides, and changing technological and regulatory requirements.

In Colorado, EPA administers the Certification and Training program for private applicators. In Nebraska, EPA administers the Certification and Training program for both private and commercial (for-hire) applicators. Certification and training funds are used to support these Federally run programs and to develop Regional educational packages and special initiatives to meet new or emerging pesticides issues and critical gaps.

PESTICIDES ENFORCEMENT

1989 Program Request

The Agency requests a total of \$5,118,300 supported by 104.6 total workyears for this program, of which \$5,013,300 will be for the Salaries and Expenses appropriation and \$105,000 will be for the Abatement, Control and Compliance appropriation. This represents an increase of \$161,300 for the Salaries and Expenses appropriation, no change in the Abatement, Control, and Compliance appropriation, and no change in total workyears. The increase in the Salaries and Expenses appropriation reflects increased personnel costs.

In 1989, the Pesticides Enforcement program will again concentrate on State participation, under cooperative enforcement agreements, in the nationwide pesticide compliance monitoring program. The Agency will emphasize achieving compliance with rules governing pesticide use, with relatively less emphasis on product surveillance in the marketplace. The States will also be responsible for enforcing notices of intent to suspend product registrations issued under the Data Call-In program. The primary Federal role at the Regional level will be oversight and management of State cooperative agreement programs. The Regional offices also support such newer Agency programs as protection of ground-water supplies from contamination by agricultural chemicals including pesticides, endangered species protection, farmworker safety, overseeing the development of State enforcement response policies under Sections 26 and 27, and tracking and compliance followup for Section 3(c)(2)(B) cancellations.

Headquarters will provide overall program guidance and management, will assist in developing new and revised regulations and will develop compliance monitoring strategies and enforcement response policies for all such rules. Headquarters staff will also provide guidance and general oversight to the Federal/State cooperative enforcement agreement program, and technical and analytical support for Regional

activities. Both Headquarters and the Regional offices are responsible for quality assurance and quality control of all enforcement data collected by EPA.

1988 Program

In 1988, the Agency is allocating a total of \$4,957,000 supported by 104.6 total workyears for this program, of which \$4,852,000 is from the Salaries and Expenses appropriation and \$105,000 is from the Abatement, Control and Compliance appropriation.

In 1988, the Agency is continuing to emphasize State participation in pesticide compliance monitoring and enforcement activities through cooperative enforcement agreements. There are 55 cooperative enforcement agreements with States and Territories and eight additional agreements with Indian Nations. Federal compliance monitoring activities continue in States without cooperative agreements. Other Federal responsibilities include import and export surveillance, technical and compliance assistance to the States and the regulated community, and operation of a computer system maintaining pesticide producer establishment and production records and other related enforcement data.

1987 Accomplishments

In 1987, the Agency obligated a total of \$4,755,200 supported by 105.1 total workyears for this program, of which \$4,500,200 was from the Salaries and Expenses appropriation and \$255,000 was from the Abatement, Control and Compliance appropriation.

In 1987, the Federal compliance monitoring program accomplished the following: 128 inspections of pesticide producing establishments, 197 use and re-entry inspections, 203 import inspections at ports of entry, 263 marketplace inspections, and 86 laboratory inspections. EPA issued 360 administrative orders, 785 letters of warning for product/producer and use violations, 332 stop sale, use or removal orders, 67 voluntary recalls, 68 import detentions, and one criminal referral to the Department of Justice.

A total of 55 cooperative enforcement agreements were in place with States and Territories, plus another eight agreements with Indian Nations, in 1987. As part of the cooperative agreement program, the Agency provided training for State inspectors, chemists and case development staff.

PESTICIDES ENFORCEMENT GRANTS

1989 Program Request

The Agency requests a total of \$8,703,400 for this program, all of which will be for the Abatement, Control and Compliance appropriation. This represents no change from 1988.

The Agency will continue cooperative enforcement agreements with 55 participating States and Territories, and eight agreements with Indian Nations. The cooperative enforcement agreements program is designed to permit participating States and Territories to determine their program priorities and utilize the resources provided to act upon these priorities. State activities will include use and re-entry investigations, pesticide producer establishment and marketplace inspections, applicator license and record inspections, and dealer record inspections.

1988 Program

In 1988, the Agency is allocating a total of \$8,703,400 for this program, all of which is from the Abatement, Control and Compliance appropriation.

In 1988, the Agency is continuing 55 cooperative enforcement agreements with States and Territories, and eight additional agreements with Indian Nations. These agreements emphasize user compliance with label directions for proper use and application, as well as manufacturer adherence to product formulation requirements under FIFRA.

1987 Accomplishments

In 1987, the Agency obligated a total of \$8,624,200 for this program, all of which was from the Abatement, Control and Compliance appropriation.

Under the terms of their cooperative enforcement agreements, 55 participating States and Territories, plus Indian Nations, conducted 18,260 use, reentry and experimental use inspections, 1,782 inspections of pesticide-producing establishments, 9,029 applicator license and record inspections, 6,171 dealer record inspections, 8,165 marketplace inspections and 209 import inspections.

PESTICIDES CERTIFICATION AND TRAINING

1989 Program Request

The Agency requests a total of \$1,043,800 supported by 22.4 total workyears for this program, all of which will be for the Salaries and Expenses Appropriation. This represents an increase of \$13,300, and no change in total workyears. The increase in the Salaries and Expenses appropriation reflects increased personnel costs.

In 1989, emphasis will be placed on assessing State training programs and certification examinations (not previously reviewed) for private and commercial applicators, developing corrective action plans based on the reviews, finalizing revisions to the federal certification regulations, and providing technical expertise with regard to certification and training and other pesticide issues.

1988 Program

In 1988, the Agency is allocating a total of \$1,030,500 supported by 22.4 total workyears for this program, all of which is from the Salaries and Expenses Appropriation.

The Regions are working with States to oversee the remedying of State Plan deficiencies based on their evaluations and negotiations, and to implement rules governing the sale of restricted use pesticides to non-certified persons. The Regional offices are reviewing State training programs and examinations that lead to the certification of private applicators. EPA Regional pesticide experts are providing technical expertise on pesticide issues such as certification and training, application techniques, toxicity, pesticide disposal, restricted use pesticides, and topical pesticide issues.

1987 Accomplishments

In 1987, the Agency obligated a total of \$519,200 supported by 11.1 total workyears for this program, all of which was from the Salaries and Expenses appropriation.

In 1987, the Agency completed the review of 53 State Certification Plans and reached agreement on schedules for implementing corrective action in the States with priority needs in certification and training. The first National C&T Workshop in eight years was held to discuss new C&T techniques with representatives from every State. The Regions negotiated and managed 53 certification cooperative agreements.

PESTICIDES CERTIFICATION AND TRAINING GRANTS

1989 Program Request

The Agency requests a total of \$4,000,000 for this program, all of which will be for the Abatement, Control and Compliance appropriation. This represents no change from 1988.

Of the total requested, \$1,820,000 for certification agreements will help to support 53 applicator certification programs in participating States and Territories and in the Federally run programs in Colorado and Nebraska. EPA will continue its Interagency Agreement with USDA to provide training to pesticide applicators by working through State Cooperative Extension Services. A grant of \$1,680,000 to the USDA/State Extension Services will help to support 53 applicator training programs.

Remaining resources will be used to develop Regional educational packages and special initiatives to meet national and Regional emerging pesticide issues and critical information gaps. Resources will also be used to develop training programs for non-agricultural applicators for whom training expertise is not currently available.

1988 Program

In 1988, the Agency is allocating a total of \$4,000,000 for this program, all of which is from the Abatement, Control and Compliance appropriation.

Of that total, \$3,500,000 is being used to help support 53 delegated certification programs, 53 delegated training programs, and the Federally run programs in Colorado and Nebraska. The States are updating their programs to address newly restricted pesticides, changes in technology and new information on the use and effects of pesticides. The remaining \$500,000 is for seven to nine C&T special initiatives to address Regional issues and non-agricultural training needs (including proper use of restricted use pesticides in lawn care and within structures, and relating to ground-water and disposal procedures). A steering committee has been established to identify and make accessible appropriate private-sector resources that are currently not being used in C&T.

1987 Accomplishments

In 1987, the Agency obligated a total of \$2,482,900 for this program, all of which was from the Abatement, Control and Compliance appropriation. EPA helped to support 53 applicator certification programs and 53 training programs and operated programs in Colorado and Nebraska.

ENVIRONMENTAL PROTECTION AGENCY

1989 Budget Estimate

Table of Contents

	<u>Page</u>
<u>RADIATION</u>	R-1
RESEARCH & DEVELOPMENT	
Radiation Research.....	R-7
Monitoring Systems and Quality Assurance.....	R-10
Environmental Engineering and Technology.....	R-11
ABATEMENT & CONTROL	
Radiation Criteria, Standards & Guidelines.....	R-14
Radiation Program Implementation.....	R-18
Radiation Environmental Impact Assessment.....	R-21
Radon Action Program.....	R-25
Radon Action Program Implementation.....	R-28

RADIATION

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988
----- (DOLLARS IN THOUSANDS) -----						

APPROPRIATION

Salaries & Expenses	\$9,878.0	\$9,436.1	\$10,838.3	\$10,838.3	\$11,189.3	\$351.0
Abatement Control and Compliance	\$4,010.3	\$3,810.6	\$5,810.6	\$8,110.6	\$7,310.6	-\$800.0
Research & Development	\$1,524.9	\$800.0	\$1,500.0	\$1,489.2	\$2,300.0	\$810.8
TOTAL, Radiation	\$15,413.2	\$14,046.7	\$18,148.9	\$20,438.1	\$20,799.9	\$361.8

PERMANENT WORKYEARS	162.9	153.7	168.9	174.4	172.2	-2.2
TOTAL WORKYEARS	177.3	166.7	183.2	183.2	183.2	
OUTLAYS	\$18,200.5	\$17,511.4	\$15,591.6	\$17,558.2	\$18,960.8	\$1,402.6
AUTHORIZATION LEVELS						

All authorization except for Research and Development, is by virtue of the Appropriation Act. The Environmental Research Development and Demonstration Act expired September 30, 1981. Reauthorization is pending.

RADIATION

OVERVIEW AND STRATEGY

EPA's mandate to protect the public health and environment from adverse effects of radiation exposure is derived from several statutes: the Atomic Energy Act, which provides authority for Federal guidance and general environmental standards (transferred to EPA by Reorganization Plan #3 of 1970); the Clean Air Act Amendments of 1977, which provide authority to regulate radioactive air pollutants; the Resource Conservation and Recovery Act and the Uranium Mill Tailings Radiation Control Act, which charge EPA with providing standards for protection from waste materials with radioactive content; the Superfund Amendments and Reauthorization Act (SARA), which requires the Administrator to take certain actions concerning indoor radon; and other authorities contained in the Nuclear Waste Policy Act; the Federal Water Pollution Control Act; the Marine Protection, Research, and Sanctuaries Act; the Safe Drinking Water Act; the Public Health Service Act; and the National Environmental Policy Act.

These statutes generally prescribe roles of environmental assessment, technology assessment, standard-setting, and research. In some cases, enforcement responsibilities are vested in other agencies, notably the Nuclear Regulatory Commission (NRC). In these instances, EPA performs some oversight functions to ensure that established standards and guidance are followed.

The basic program strategy for EPA's Radiation Program focuses on four major objectives: (1) reduce health effects and environmental impacts; (2) assess emerging radiation problems; and (3) maintain a capability to respond to emergencies; and (4) carry out supporting research.

Reduce adverse health effects and environmental impact from radiation exposure through a program of standards and guides

Source categories that emit airborne radionuclides are assessed and regulated, where appropriate, by the promulgation and implementation of National Emission Standards for Hazardous Air Pollutants (NESHAPs), under section 112 of the Clean Air Act. In 1989 emphasis will be placed on revising the radionuclide NESHAPs already promulgated, and reviewing the decisions not to regulate other source categories, in accordance with the Court decision that limits the use of cost factors in establishing required levels. Various classes of radioactive wastes and disposal options are evaluated and regulated in a program designed to ensure that disposal takes place in an environmentally sound manner that limits exposures. Principal tasks remaining include promulgation of standards for land and ocean disposal of low-level radioactive wastes, development of regulations to determine permissible residual radioactivity levels for decommissioned nuclear facilities, and development of groundwater protection standards for inactive mill tailings sites. The Court has also ordered the Agency to revise portions of the standard for disposal of high-level radioactive wastes. Federal Guidance will be completed for general population exposure to radiofrequency radiation and submitted to the President for signature. Protective Action Guides are being developed to assist in the relocation and resettlement of populations in the event of a radiation incident.

Assess and quantify existing and emerging radiation problems and their potential impact.

Radon, a naturally occurring radioactive gas, is estimated to cause between 5,000 and 20,000 lung cancer fatalities annually. Measurements of indoor radon levels from naturally occurring radium in soil and rocks in the Reading Prong areas of Pennsylvania, New Jersey, and New York, and the elevated exposure levels

discovered in other parts of the country, demonstrate the need to address this environmental problem. The Radon Action Program will continue to be one of the Agency's highest priorities in 1989.

The Agency program to address elevated radon levels includes four major components: assessment of the problem, mitigation and prevention research and applications, development of State and private sector capability, and development and dissemination of information and education materials. These components, which incorporate functions mandated under SARA, are parts of an integrated program that emphasize a voluntary partnership of the Federal, State, and private sectors. Specific activities include conduct of the national survey of radon in residences, more intensive State surveys, and preparation for national surveys of radon in schools and workplaces. The House Evaluation Program affords State personnel and contractors the opportunity to use the latest techniques in mitigating significant radon problems in actual residences, and the Radon Measurement Proficiency program provides a vehicle for the public to gain information on the capability of private measurement firms. A similar program for mitigation contractors will be launched in 1989. A radon clearinghouse will also be established to collect information and disseminate it to the public and industry regarding measurement techniques and mitigation and prevention methods.

Knowledge of radiation exposure from some sources has become more widespread, and the potential for radiation contamination of environmental pathways is growing as greater uses are made of radioactive materials. Requests for assistance in site assessments and radiochemical analyses of environmental samples have increased substantially, particularly from the Federal sector.

Maintain a capability to respond to emergencies and to aid development and testing of State, local, and Federal plans for emergency response

The Agency maintains the Environmental Radiation Ambient Monitoring System (ERAMS) to provide a mechanism for tracking and measuring large atmospheric releases of radioactive materials across the country. This system also provides continuous information on radiation levels in environmental pathways. Two emergency response teams are maintained in a state of readiness so that they can be flown to sites where significant radiation releases have occurred or appear imminent. EPA will seek to extend the number of staff trained to participate effectively in a radiation emergency. In addition, the Agency will participate in full field exercises scheduled by the Federal Emergency Management Agency (FEMA).

Agency monitoring operations conducted at the Three Mile Island (TMI) field station will be completed and the responsibility transferred to the Commonwealth of Pennsylvania. In addition, the quality assurance program for radiochemical analyses will be maintained.

Conduct Supporting Research

The EPA Office of Research and Development (ORD) performs two key functions in support of the Agency's radiation goals. First ORD provides data needed to support the Agency's Radon Action Program. Specifically, mitigation and prevention techniques will be demonstrated and tested in homes around the country, in coordination with the Agency's House Evaluation Program. Handbooks for homeowners and technical manuals for builders and contractors will be updated, based on the results of further testing.

To assist laboratories that measure radionuclide emissions, ORD provides monitoring and quality assurance support, including inter-laboratory comparison studies. Under an interagency agreement with the Department of Energy, ORD also provides support in the form of off-site monitoring around nuclear test sites. This support includes long-term hydrological monitoring, a human surveillance investigation program, and maintenance of a radiation data base.

RADIATION

<u>PROGRAM ACTIVITIES</u>	<u>ACTUAL 1987</u>	<u>BUDGET ESTIMATE 1988</u>	<u>CURRENT ESTIMATE 1988</u>	<u>ESTIMATE 1989</u>	<u>INCREASE (+) DECREASE (-) 1989 vs 1988</u>
<u>Cumulative Outputs</u>					
Regulations:					
Proposals.....	10	12	12	12	--
Promulgations.....	10	10	10	11	+1
Reproposals.....	1	1	6	7	+1
Repromulgations.....	--	1	1	6	+5
Guides:					
Proposals.....	3	3	3	3	--
Final.....	2	3	2	3	+1

ENVIRONMENTAL PROTECTION AGENCY

1989 Budget Estimate

Table of Contents

	<u>Page</u>
<u>RADIATION</u>	
RESEARCH & DEVELOPMENT	
Radiation Research.....	R-7
Monitoring Systems and Quality Assurance.....	R-10
Environmental Engineering and Technology.....	R-11

RADIATION
Radiation Research

		ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988
----- (DOLLARS IN THOUSANDS) -----							
PROGRAM -----							
Monitoring Systems & Quality Assurance - Radiation Research Salaries & Expenses		\$160.1	\$176.0	\$164.3	\$164.3	\$167.9	\$3.6
	TOTAL	\$160.1	\$176.0	\$164.3	\$164.3	\$167.9	\$3.6
Environmental Engineering and Technology - Radiation Salaries & Expenses Research & Development		\$957.3	\$444.2	\$1,304.6	\$1,304.6	\$1,558.3	\$253.7
	TOTAL	\$1,524.9	\$800.0	\$1,500.0	\$1,489.2	\$2,300.0	\$810.8
	TOTAL	\$2,482.2	\$1,244.2	\$2,804.6	\$2,793.8	\$3,858.3	\$1,064.5
TOTAL:							
Salaries & Expenses		\$1,117.4	\$620.2	\$1,468.9	\$1,468.9	\$1,726.2	\$257.3
Research & Development		\$1,524.9	\$800.0	\$1,500.0	\$1,489.2	\$2,300.0	\$810.8
Radiation Research	TOTAL	\$2,642.3	\$1,420.2	\$2,968.9	\$2,958.1	\$4,026.2	\$1,068.1
PERMANENT WORKYEARS -----							
Monitoring Systems & Quality Assurance - Radiation Research		4.0	4.7	4.7	4.7	4.7	
Environmental Engineering and Technology - Radiation		17.7	8.0	15.5	15.4	18.0	2.6
TOTAL PERMANENT WORKYEARS		21.7	12.7	20.2	20.1	22.7	2.6

R-7

**RADIATION
Radiation Research**

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988
----- (DOLLARS IN THOUSANDS)						
TOTAL WORKYEARS -----						
Monitoring Systems & Quality Assurance - Radiation Research	4.0	4.7	4.7	4.7	4.7	
Environmental Engineering and Technology - Radiation	18.2	8.0	15.5	15.4	18.0	2.6
TOTAL WORKYEARS	22.2	12.7	20.2	20.1	22.7	2.6

RADIATION

Radiation Research

Principal Outputs by Objective

Objective 1: Provide Monitoring and Quality Assurance Support to Federal, State, and Local Laboratories

- 1989: ° Annual report for calendar year 1988 on off-site surveillance around the Nevada Test Site (Monitoring)
- ° Annual report on laboratory radionuclide intercomparison studies (Monitoring)
- 1988: ° Annual report for calendar year 1987 on off-site surveillance around the Nevada Test Site (Monitoring)
- ° Annual report on laboratory radionuclide intercomparison studies (Monitoring)
- 1987: ° Annual report for calendar year 1986 on off-site surveillance around the Nevada Test Site (Monitoring)
- ° Annual report on laboratory radionuclide intercomparison studies (Monitoring)

Objective 2: Provide the Scientific Data Necessary to Support the Radon Action Plan

- 1989: ° Report on new house radon reduction techniques (Engineering)
- ° Updated guidance to homeowners on radon reduction in existing homes (Engineering)
- 1988: ° Report on initial new house radon reduction studies (Engineering)
- 1987: ° Revised brochure on radon mitigation in the home (Engineering)
- ° Scientific symposium on diagnosing and mitigating radon (Engineering)
- ° Produced brochure on removing radon from household water (Engineering)

RADIATION

Radiation Research

Budget Request

The Agency requests a total of \$4,026,200 supported by 22.7 total workyears for this program, of which \$1,726,200 will be for the Salaries and Expenses appropriation and \$2,300,000 will be for the Research and Development appropriation. This represents increases of \$257,300 and \$810,800 respectively, with an increase of 2.6 total workyears.

Program Description

The goal of the radiation research program is to provide the Office of Radiation Programs (ORP) and other EPA, Federal, Regional, State and local officials with scientifically credible data, methods, assessments and mitigative techniques required to determine and control public exposure to radon and other radioactive materials in the environment. The following objectives support these goals:

Objective 1. Provide Monitoring and Quality Assurance Support to Federal, State, and Local Laboratories. This program provides comprehensive radiological monitoring and surveillance services to meet specific Department of Energy (DOE) requirements for its nuclear testing programs, especially at the Nevada Test Site. This work is conducted under a reimbursable arrangement with DOE. EPA also conducts a radiochemical analytical quality assurance program which supports Federal, State, and local laboratories making radioactivity measurements.

Objective 2. Provide the Scientific Data Necessary to Support the Radon Action Plan. Under this program, ORD conducts research on, demonstrates and evaluates techniques to prevent and mitigate exposure to radon gas in homes.

MONITORING SYSTEMS AND QUALITY ASSURANCE

1989 Program Request

The Agency requests a total of \$167,900 supported by 4.7 total workyears for this program, all of which will be for the Salaries and Expenses appropriation. This represents an increase of \$3,600, which reflects a general enhancement of inhouse support for the radiation monitoring program.

Provide Monitoring and Quality Assurance Support to Federal, State, and Local Laboratories. Monitoring support for DOE at the Nevada Test Site and other test locations will continue. This support consists of a radiation safety monitoring program, a long-term hydrological monitoring program, a human surveillance investigation program, and maintenance of the radiation data base. Technical expertise and guidance will be provided to Regional, State, and contractor laboratories for radiochemical analyses of environmental samples. Interlaboratory comparison studies will be conducted to provide data on the precision and accuracy of radioactivity measurements in milk, drinking water, and air.

1988 Program

In 1988, the Agency is allocating a total of \$164,300 supported by 4.7 total workyears for this program, all of which is from the Salaries and Expenses appropriation. Monitoring support is being provided to the Department of Energy at the

Nevada Test Site and other installations. Quality assurance support is being provided to Regional, State, and contractor laboratories for radiochemical analyses of environmental samples.

1987 Accomplishments

In 1987, the Agency obligated a total of \$160,100 supported by 4.0 total work-years for this program, all of which was from the Salaries and Expenses appropriation. Annual reports on the laboratory radionuclide intercomparison studies and the off-site surveillance program were published. Quality assurance support was provided.

ENVIRONMENTAL ENGINEERING AND TECHNOLOGY

1989 Program Request

The Agency requests a total of \$3,858,300 supported by 18.0 total workyears for this program, of which \$1,558,300 will be for the Salaries and Expenses appropriation and \$2,300,000 will be for the Research and Development appropriation. This represents increases of \$253,700 and \$810,800 respectively, and an additional 2.6 total workyears. The increase in funding will be used to initiate additional radon mitigation demonstrations and to conduct analyses of the data which will be gathered at the demonstration sites. The results of this research will enhance the Agency's ability to confidently recommend mitigation techniques for a variety of housing structures.

Provide the Scientific Data Necessary to Support the Radon Action Plan. Recent studies have indicated that exposure to indoor radon gas poses a significant risk to public health. Based on this high risk and growing national concern, the "Radon Gas and Indoor Air Quality Research Act of 1986" (SARA Title IV) was passed authorizing the appropriation of funds to conduct research on radon gas and other dangerous indoor pollutants. As a result, EPA is substantially enhancing the radon mitigation research program to provide the public and State and local authorities with information on techniques for reducing radon levels in a variety of structures which pose the greatest hazard. In 1989, ORD will update the mitigation manual for builders to include applications in different locations and information on the use of innovative techniques. Tests of air cleaners will be expanded, focusing on proper design and operating conditions. Many additional mitigation tests will also be initiated in existing houses and in houses under construction and extensive pre- and postmitigation diagnosis efforts will be undertaken in all homes to demonstrate and evaluate mitigation techniques.

1988 Program

In 1988, the Agency is allocating a total of \$2,793,800 supported by 15.4 total workyears for this program, of which \$1,304,600 is from the Salaries and Expenses appropriation and \$1,489,200 is from the Research and Development appropriation. Development and testing of radon gas reduction techniques is being done in existing and new houses, as well as through laboratory studies. The performance of these techniques is being demonstrated in several States and regions of the country to provide cost-effective solutions for the U.S. housing stock. ORD staff provide technical information to community leaders and participating homeowners at the demonstration sites and publish/update public information documents in the form of technical guidance manuals and homeowner brochures on an annual basis.

1987 Accomplishments

In 1987, the Agency obligated a total of \$2,482,200 supported by 18.2 total workyears for this program, of which \$957,300 was from the Salaries and Expenses appropriation and \$1,524,900 was from the Research and Development appropriation. Demonstration projects for existing houses were initiated. The brochure on home mitigation was revised and a new brochure on removing radon gas from household water was produced. A scientific symposium was held on diagnosing radon problems and developing mitigation techniques.

ENVIRONMENTAL PROTECTION AGENCY

1989 Budget Estimate

Table of Contents

	<u>Page</u>
<u>RADIATION</u>	
ABATEMENT & CONTROL	
Radiation Criteria, Standards & Guidelines.....	R-14
Radiation Program Implementation.....	R-18
Radiation Environmental Impact Assessment.....	R-21
Radon Action Program.....	R-25
Radon Action Program Implementation.....	R-28

RADIATION
Radiation Criteria, Standards & Guidelines

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988

(DOLLARS IN THOUSANDS)						

PROGRAM						

Radiation Criteria, Standards & Guidelines						
Salaries & Expenses	\$3,294.7	\$2,997.7	\$3,121.4	\$3,121.4	\$3,152.6	\$31.2
Abatement Control and Compliance	\$919.4	\$1,060.6	\$1,060.6	\$3,060.6	\$1,060.6	-\$2,000.0
TOTAL	\$4,214.1	\$4,058.3	\$4,182.0	\$6,182.0	\$4,213.2	-\$1,968.8
TOTAL:						
Salaries & Expenses	\$3,294.7	\$2,997.7	\$3,121.4	\$3,121.4	\$3,152.6	\$31.2
Abatement Control and Compliance	\$919.4	\$1,060.6	\$1,060.6	\$3,060.6	\$1,060.6	-\$2,000.0
TOTAL	\$4,214.1	\$4,058.3	\$4,182.0	\$6,182.0	\$4,213.2	-\$1,968.8
Radiation Criteria, Standards & Guidelines						
PERMANENT WORKYEARS						

Radiation Criteria, Standards & Guidelines	56.2	53.5	53.5	53.1	53.1	
TOTAL PERMANENT WORKYEARS	56.2	53.5	53.5	53.1	53.1	
TOTAL WORKYEARS						

Radiation Criteria, Standards & Guidelines	58.8	53.5	53.5	53.1	53.1	
TOTAL WORKYEARS	58.8	53.5	53.5	53.1	53.1	

R-14

RADIATION

Radiation Criteria, Standards, and Guidelines

Budget Request

The Agency requests a total of \$4,213,200 supported by 53.1 total workyears for 1989, a decrease of \$1,968,800 and no change in total workyears from 1988. Of the request, \$3,152,600 will be for the Salaries and Expenses appropriation and \$1,060,600 will be for the Abatement, Control and Compliance appropriation. This represents an increase of \$31,200 in the Salaries and Expenses appropriation and a decrease of \$2,000,000 in the Abatement, Control and Compliance appropriation.

Program Description

EPA develops, promulgates, and implements radiation environmental standards and guidelines under this subactivity. These standards and guidelines protect the public health and the environment by minimizing risk of radiation exposures from nuclear energy applications, naturally occurring radioactive materials, medical and occupational radiation exposures, and electromagnetic radiation.

RADIATION CRITERIA, STANDARDS, AND GUIDELINES

1989 Program Request

The Agency requests a total of \$4,213,200 supported by 53.1 total workyears for this program, of which \$3,152,600 will be for the Salaries and Expenses appropriation and \$1,060,600 will be for the Abatement, Control and Compliance appropriation. This represents an increase of \$31,200 in the Salaries and Expenses appropriation and a decrease of \$2,000,000 in the Abatement, Control and Compliance appropriation. The increase reflects higher personnel and support costs. The decrease reflects the completion of analytical work necessary to support revisions of radionuclide NESHAPs and high level radioactive waste in accordance with court orders.

In 1989 EPA will continue to concentrate on three major program areas: addressing airborne radionuclides, establishing standards for radioactive waste management, and developing Federal Guidance. The airborne radionuclides effort will focus on completing the revisions to NESHAPs remanded to the Agency, in accordance with the schedule established by court order. The standards previously promulgated will be revised, where required, and the decisions not to regulate will be reexamined to ensure that appropriate decisions were made. Also, a decision will be made whether to regulate phosphogypsum piles under the NESHAPs program. Transfer of NESHAPs implementation authority to the States will be pursued, and guidance will be developed for States seeking delegation of authority. Requests for alternative standards for Department of Energy (DOE) facilities and facilities licensed by the Nuclear Regulatory Commission (NRC) will be reviewed, and a national data base related to the implementation program will be maintained.

In 1989 the program to develop standards for residual radiation levels at decommissioned nuclear facilities will continue. Criteria for decommissioning nuclear reactors have been requested by both DOE and NRC. In addition, as part of the effort to address the problem of radioactive waste disposal, EPA will work towards promulgation of the final low-level radioactive waste standard and provide required implementation assistance to the Regions and States. The high-level waste standard will be repropose as a result of a court remand.

Also in 1989, the Federal guidance for radiofrequency radiation will be completed and submitted to the President for signature, and working arrangements will be established with the Federal Communications Commission, the Department of Defense, and other affected agencies for the implementation of the guidance. Technical advice, assistance, and oversight will also be provided. Development of a Protective Action Guide (PAG) for ingestion pathways will be continued. In order to ensure the uniform application of the PAGs nationwide in emergency situations, a program will be initiated to convert the PAGs to formal Federal guidance.

1988 Program

In 1988 the Agency is allocating a total of \$6,182,000 supported by 53.1 total workyears for this program, of which \$3,121,400 is from the Salaries and Expenses appropriation and \$3,060,600 is from the Abatement, Control and Compliance appropriation.

Emphasis is placed on revising the radionuclide NESHAPs in accordance with the remand of established standards. Modifications are being made, as necessary, to respond to the Court decision that limits the use of cost factors in establishing required levels. All standards that were previously promulgated are being reviewed for compliance with the Court order, and source categories that were decided as not requiring regulation are being reexamined to determine the propriety of those decisions. Agreements are being worked out with DOE and NRC setting out responsibilities for implementation of the standards for facilities under their jurisdiction.

The proposed standard for land disposal of low-level radioactive waste, including natural and accelerator produced materials, are being published. Existing standards for inactive mill tailings sites under the Uranium Mill Tailings Radiation Control Act are being augmented with the promulgation of standards for ground water protection at these sites. The residual radioactivity standards development continues, including work to develop a draft consensus pathway model. In response to a court decision, the high-level waste standard is being modified as necessary. Work on final rulemaking for radiofrequency radiation is continuing. The Agency will take final action to complete PAGs for plume and relocation in the event of a nuclear incident. These PAGs are being incorporated in the Manual of Protective Actions, used in Federal, State, and local emergency preparedness plans in the event of a domestic or foreign radiation incident.

1988 Explanation of Changes from the Enacted Level

The increase of \$2,000,000 in the Abatement, Control and Compliance appropriation supports revisions of radionuclide NESHAPs and high level radioactive waste in accordance with court orders.

1987 Accomplishments

In 1987 the Agency obligated \$4,214,100 and 58.8 total workyears for this program, of which \$3,294,700 was from the Salaries and Expenses appropriation and \$919,400 was from the Abatement, Control and Compliance appropriation.

Forty-one requests for review, acceptance, extensions and exemptions to the radionuclide NESHAPs standard were completed. The risk assessment study on phosphogypsum was completed. The risk assessment will be coupled with a future cost evaluation study of the control technology before final publication. Guidance materials were provided to the Regions on NESHAPs implementation, inspection, and enforcement. The proposed ground-water protection standards for inactive uranium tailings sites were published. Work continued on the proposed standard for land disposal of low-level radioactive wastes. Analytical work necessary to develop

environmental standards for residual radioactivity at decommissioned nuclear facilities also continued. Work on final guidance for radiofrequency radiation continued. The Occupational Exposure Guidance was signed by the President and published.

RADIATION
Radiation Program Implementation

ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988
----------------	----------------------------	-----------------	-----------------------------	-----------------	--

(DOLLARS IN THOUSANDS)

PROGRAM

Radiation Program
Implementation
Salaries & Expenses

	TOTAL	\$322.0	\$384.8	\$344.7	\$344.7	\$348.1	\$3.4
		\$322.0	\$384.8	\$344.7	\$344.7	\$348.1	\$3.4

Radiation Program
Implementation
Salaries & Expenses

	TOTAL	\$83.6
		\$83.6

TOTAL:
Salaries & Expenses

	TOTAL	\$322.0	\$468.4	\$344.7	\$344.7	\$348.1	\$3.4
--	-------	---------	---------	---------	---------	---------	-------

Radiation Program
Implementation

	TOTAL	\$322.0	\$468.4	\$344.7	\$344.7	\$348.1	\$3.4
--	-------	---------	---------	---------	---------	---------	-------

PERMANENT WORKYEARS

Radiation Program
Implementation

	TOTAL	5.8	7.0	7.0	6.4	7.0	6
--	-------	-----	-----	-----	-----	-----	---

TOTAL PERMANENT WORKYEARS

	TOTAL	5.8	7.0	7.0	6.4	7.0	.6
--	-------	-----	-----	-----	-----	-----	----

TOTAL WORKYEARS

Radiation Program
Implementation

	TOTAL	6.8	7.0	7.0	7.0	7.0
--	-------	-----	-----	-----	-----	-----

TOTAL WORKYEARS

	TOTAL	6.8	7.0	7.0	7.0	7.0
--	-------	-----	-----	-----	-----	-----

RADIATION

Radiation Program Implementation

Budget Request

The Agency requests a total of \$348,100 supported by 7.0 total workyears for 1989, an increase of \$3,400 from 1988. All of the request will be for the Salaries and Expenses appropriation.

Program Description

This program supports activities of EPA's Regional Offices and includes: participating in the implementation of standards for airborne radionuclides from the source categories regulated and participating in the review and testing of State radiological emergency response plans.

Other activities include reviewing environmental impact statements; providing the public with technical information; providing direct assistance to State and local governments with special radiation problems of a short-term nature; and providing the radiological expertise needed by the Regions to manage radiological problems associated with the drinking water and hazardous waste programs.

RADIATION PROGRAM IMPLEMENTATION

1989 Program Request

The Agency requests a total of \$348,100 supported by 7.0 total workyears, all of which will be for the Salaries and Expenses appropriation. This represents an increase of \$3,400 for this program from 1988. The increase reflects higher personnel and support costs.

In 1989 Regional Offices will participate fully in all aspects of the implementation program for sources covered by NESHAPs for airborne radionuclides from emission sources within their geographic boundaries. The testing and critique of State emergency response plans will continue to be an important element of Regional operations, along with review of updated plans. EPA assists States in the development of radiological emergency response plans and formally reviews these plans along with other Federal agencies under the coordination of FEMA. Also, the Regions will remain involved with State agencies and the public in presenting and interpreting Agency information and guidance regarding radiation problems in their area.

Regional Offices will continue to participate in identification and assessment of hazardous waste sites that are contaminated with radioactivity, and will serve as coordination points for remedial action programs for sites in their Regions. This effort supports both the EPA Headquarters hazardous waste programs and the requests from the States. The Regions will continue to be the primary reviewers of environmental impact statements for radiation facilities, such as commercial nuclear power plants, uranium mines and mills, and radioactive waste disposal facilities. They will also respond to special problems involving actual or potential radiation releases or exposures.

1988 Program

In 1988 the Agency is allocating a total of \$344,700 supported by 7.0 total workyears for this program, all of which is from the Salaries and Expenses appropriation.

In 1988 the Regional radiation program is continuing to focus on emergency preparedness and technical assistance to States. Activities include: the participation in Regional Assistance Committees; testing and critique of emergency response plans; and review of updated State and local emergency response plans as required. Regional offices are reviewing requests for construction permits, modifications to facilities, and other requirements associated with the airborne radionuclides NESHAPs. The Regional staff is also providing coordination necessary where the national program is directly involved in implementation of the radionuclide NESHAPs in areas such as waivers, exemptions, and alternate requirements. Regional programs continue to be involved in the characterization of hazardous waste sites subject to possible remedial action. This includes staff participation as on-site radiation consultants in addressing problems at sites which are on the Superfund National Priority List. The Regions are continuing as the primary reviewer of environmental impact statements for radiation facilities, such as uranium mills and mines, and radioactive waste disposal facilities.

1987 Accomplishments

In 1987 the Agency obligated a total of \$322,000 supported by 6.8 total workyears for this program, all of which was from the Salaries and Expenses appropriation.

In 1987 emergency preparedness and technical assistance to the States and other EPA Regional programs remained a central focus of the Regional radiation program. Regional Offices also reviewed requests for construction permits and requests for exemptions for facilities covered by airborne radionuclide NESHAPs. They continued to review environmental impact statements for radiation facilities, such as uranium mills and mines, and radioactive waste disposal sites. They also continued to be involved with the characterization of hazardous waste sites, and provided technical assistance and advice to the Superfund program relative to actual or possible remedial actions.

RADIATION
Radiation Environmental Impact Assessment

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988
----- (DOLLARS IN THOUSANDS) -----						
PROGRAM						

Radiation Environmental Impact Assessment Salaries & Expenses		\$277.2				
TOTAL		\$277.2				
Radiation Environmental Impact Assessment Salaries & Expenses	\$2,847.6	\$2,624.4	\$2,966.5	\$2,966.5	\$2,996.2	\$29.7
Abatement Control and Compliance	\$420.3	\$250.2	\$250.2	\$250.3	\$250.3	
TOTAL	\$3,267.9	\$2,874.6	\$3,216.7	\$3,216.8	\$3,246.5	\$29.7
TOTAL: Salaries & Expenses	\$2,847.6	\$2,624.4	\$2,966.5	\$2,966.5	\$2,996.2	\$29.7
Abatement Control and Compliance	\$420.3	\$250.2	\$250.2	\$250.3	\$250.3	
TOTAL	\$3,267.9	\$3,151.8	\$3,216.7	\$3,216.8	\$3,246.5	\$29.7
Radiation Environmental Impact Assessment						
PERMANENT WORKYEARS						

Radiation Environmental Impact Assessment	42.3	48.5	48.5	48.1	48.1	
TOTAL PERMANENT WORKYEARS	42.3	48.5	48.5	48.1	48.1	

RADIATION
Radiation Environmental Impact Assessment

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988

(DOLLARS IN THOUSANDS)						

TOTAL WORKYEARS						

Radiation Environmental Impact Assessment	47.8	48.5	48.5	48.1	48.1	
TOTAL WORKYEARS	47.8	48.5	48.5	48.1	48.1	

RADIATION

Radiation Environmental Impact Assessment

Budget Request

The Agency requests a total of \$3,246,500, supported by 48.1 total workyears for 1989, an increase of \$29,700 from 1988. Of the request, \$2,996,200 will be for the Salaries and Expenses appropriation and \$250,300 will be for the Abatement, Control and Compliance appropriation, an increase of \$29,700 and no change in total workyears from 1988.

Program Description

Activities in this program provide the information necessary to identify and analyze radiological problems having potential public health impacts. This includes support of the development of standards and guidelines, as well as monitoring of environmental radiation, conduct of laboratory analysis and technology assessments, and maintenance of an emergency preparedness capability.

RADIATION ENVIRONMENTAL IMPACT ASSESSMENT

1989 Program Request

The Agency requests a total of \$3,246,500 supported by 48.1 total workyears, of which \$2,996,200 will be for the Salaries and Expenses appropriation and \$250,300 will be for the Abatement, Control and Compliance appropriation. This represents an increase of \$29,700 for the Salaries and Expenses appropriation, and no change in the Abatement, Control, and Compliance appropriation and no change in total workyears. The increase reflects higher personnel and support costs.

In 1989 EPA will continue to support development of standards under the Clean Air Act, the Atomic Energy Act, and other legislative authorities. This will include support to the development and implementation of NESHAPs for airborne radionuclides, and may include the collection and analysis of air samples from facilities to verify compliance with existing standards. Field data collection from the Idaho survey will be completed, and analysis of data will facilitate a decision on what additional steps should be taken. EPA will continue to maintain emergency response capabilities at two field locations, and will also participate in field exercises scheduled by FEMA. In addition, EPA will extend training for nuclear accident responses to the radiation staff beyond the core group who normally participate in tests and exercises of the existing Federal emergency response plans. The 268 stations of the ERAMS which collect and analyze samples of air, precipitation, and milk to determine ambient radiation levels will continue full operation. The quality assurance program will be operated to ensure accuracy of all laboratory measurements and data analyses conducted, either in-house or through program contracts. In addition, limited support to States, other Federal agencies, and other parts of EPA will continue in the form of radiochemical analyses, technical assistance, and participation in the Conference of Radiation Control Program Directors.

Reports of radiation levels in naval harbors surveyed at the request of the Navy will be made available. Attention will be focused on assisting other Federal agencies affected by Federal guidance for radiofrequency radiation to develop a capability to incorporate and implement the guidance in their specific activities.

1988 Program

In 1988 the Agency is allocating a total of \$3,216,800 supported by 48.1 total workyears for this program, of which \$2,966,500 is from the Salaries and Expenses appropriation and \$250,300 is from the Abatement, Control and Compliance appropriation.

In 1988 EPA is continuing laboratory and technical support to regulation and guidance development. This includes field studies and analyses needed to make a decision on whether to regulate airborne radionuclides from phosphogypsum piles, and a risk assessment of the areas surrounding Pocatello and Soda Springs, Idaho. Collection of environmental information related to the proposal of regulations for residual radioactivity at decommissioned nuclear facilities is also continuing. Environmental assessments in harbors servicing nuclear-powered vessels are being provided, in accordance with an Interagency Agreement with the Navy. A similar arrangement with the Federal Communications Commission provides for measurement of radiofrequency levels in specific locations of interest or concern.

Other activities in 1988 include: maintenance of an emergency response capability, coordination of EPA Regional Office review and testing of State emergency response plans, assistance to other EPA offices and to State radiological programs, and operation of ERAMS. Responsibility for monitoring of radiation levels in the Three Mile Island area is being transferred to the Commonwealth of Pennsylvania in anticipation of completion of the removal of the reactor core.

1987 Accomplishments

In 1987 the Agency obligated a total of \$3,267,900 supported by 47.8 total workyears for this program, of which \$2,847,600 was from the Salaries and Expenses appropriation and \$420,300 was from the Abatement, Control and Compliance appropriation.

In 1987 EPA continued laboratory and technical support of regulation and guidance development. Program activities also included the maintenance of an emergency response capability, participation in a full field exercise of the Federal Radiation Emergency Response Plan at the Zion nuclear reactor, coordination of EPA Regional Office review and testing of State emergency response plans, assistance to other EPA offices and to State radiological programs, and operation of ERAMS. Ocean disposal monitoring activities continued for the development of technical criteria in support of the Agency's ocean disposal regulation, which will cover low level radioactive waste.

Radiation

Radon Action Program

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988

(DOLLARS IN THOUSANDS)						

PROGRAM						

Radon Action Program						
Salaries & Expenses	\$1,790.1	\$1,677.7	\$2,246.5	\$2,246.5	\$2,199.6	-\$126.9
Abatement & Control and Compliance	\$2,670.6	\$2,499.8	\$4,499.8	\$4,799.7	\$5,999.7	\$1,200.0
TOTAL	\$4,460.7	\$4,177.5	\$6,746.3	\$7,046.2	\$8,119.3	\$1,073.1
TOTAL:						
Salaries & Expenses	\$1,790.1	\$1,677.7	\$2,246.5	\$2,246.5	\$2,119.6	-\$126.9
Abatement Control and Compliance	\$2,670.1	\$2,499.8	\$4,499.8	\$4,799.7	\$5,999.7	\$1,200.0
Radon Action Program TOTAL	\$4,460.7	\$4,177.5	\$6,746.3	\$7,046.2	\$8,119.3	\$1,073.1
PERMANENT WORKYEARS						

Radon Action Program	27.9	31.0	38.5	38.3	35.3	-3.0
TOTAL PERMANENT WORKYEARS	27.9	31.0	38.5	38.3	35.3	-3.0
TOTAL WORKYEARS						

Radon Action Program	31.0	31.0	38.5	38.3	35.3	-3.0
TOTAL WORKYEARS	31.0	31.0	38.5	38.3	35.3	-3.0

RADIATION

Radon Action Program

Budget Request

The Agency requests a total of \$8,119,300 supported by 35.3 total workyears for 1989, an increase of \$1,073,100 and a decrease of 3.0 total workyears from 1988. Of the request, \$2,119,600 will be for the Salaries and Expenses appropriation and \$5,999,700 will be for the Abatement, Control and Compliance appropriation.

Program Description

This program supports Headquarters activities to ensure an effective and nationally consistent effort to develop and implement a comprehensive Radon Action Program to address and reduce the health impacts of radon exposure. This program also addresses the mandates of SARA, which require a program to assess the significance of the radon problem in more detail, analyze the health risks, provide assistance to States, develop measurement and mitigation techniques, and issue technical guidance and information to the public. The program is coordinated with the radon activities of DOE, and emphasizes development of State and local agency capabilities and full participation by the private sector.

RADON ACTION PROGRAM

1989 Program Request

The Agency requests a total of \$8,119,300 supported by 35.3 total workyears for this program, of which \$2,119,600 will be for the Salaries and Expenses appropriation and \$5,999,700 will be for the Abatement, Control and Compliance appropriation. This represents a decrease of \$126,900 in the Salaries and Expenses appropriation, an increase of \$1,200,000 in the Abatement, Control and Compliance appropriation, and a decrease of 3.0 total workyears. The decrease reflects a shift in emphasis to Regional implementation efforts. The increase provides for the development of a radon information clearinghouse and a mitigation contractor proficiency program.

In 1989 EPA will continue to conduct a comprehensive Radon Action Program to address and reduce the health impacts of radon exposure. Specific activities will include the continuation of the field operation and data collection phase of the national survey of radon in residences and design and pre-test of a survey to measure radon levels in schools, as required by SARA. Individual States will be assisted in the design and conduct of State-wide surveys, including the collection of screening measurements in homes, and presentation of analyses of potential radon areas to the public. The House Evaluation Program will be continued, and EPA will seek to work with other Federal agencies to ensure that residences provided to their employees do not have elevated radon levels. The Radon Measurement Proficiency Program will continue to evaluate the capability of firms to accurately measure radon levels. Information about the proficiency of individual firms will be made available to the public through appropriate means.

Also in 1989, a radon information clearinghouse will be initiated to collect, assimilate, and disseminate information on radon, including the latest measurement, mitigation, and prevention techniques. A mitigation contractor proficiency program will be devised to provide information to the public on the capability of firms working in the radon mitigation field.

1988 Program

In 1988 the Agency is allocating a total of \$7,046,200 supported by 38.3 total workyears for this program, of which \$2,246,500 is from the Salaries and Expenses appropriation and \$4,799,700 is from the Abatement, Control and Compliance appropriation.

In 1988 EPA is continuing to implement a comprehensive Radon Action Program, with emphasis on the promotion of self-sufficient State programs to reduce indoor radon levels. Specific activities include: beginning the field work associated with the national survey of radon levels in homes; providing measurement protocols needed to carry out a national survey of radon in schools; assisting seven States in designing and conducting more intensive State-wide surveys; developing standardized protocols for soil gas measurements; incorporating new technology into the House Evaluation Program; distributing an interim guide and technical guidance on radon reduction in new construction; and evaluating and designing mitigation schemes for 80 homes in the House Evaluation Program. The Agency will also update the Radon Diagnostician and Mitigation Training Course and conduct seven sessions of the updated course.

1987 Accomplishments

In 1987, the Agency obligated a total of \$4,281,900 supported by 31 workyears, of which \$1,611,300 was from the Salaries and Expenses appropriation and \$2,670,600 was from the Abatement, Control and Compliance appropriation.

EPA continued implementation of the Radon Action Program in 1987. Activities included the development of a survey design for State-wide surveys of high-risk areas. Ten States completed surveys with EPA assistance. The program also completed a design for a national survey of radon in residences. The House Evaluation Program was established to assist States in evaluating causes of and mitigation approaches for elevated indoor radon levels. The Radon Measurement Proficiency program was continued, and completed two more rounds of evaluations. Eight three-day radon diagnostician and mitigation training courses were conducted. A new brochure, "Radon Reduction in New Construction: An Interim Guide," was produced in partnership with the National Association of Home Builders.

Radiation

Radon Action Program Implementation

		ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988

(DOLLARS IN THOUSANDS)							
PROGRAM							

R-28	Radon Action Program Implementation						
	Salaries & Expenses	\$506.2	\$770.5	\$690.3	\$690.3	\$846.6	\$156.3
	TOTAL	\$506.2	\$770.5	\$690.3	\$690.3	\$846.6	\$156.3
	TOTAL:						
	Salaries & Expenses	\$506.2	\$770.5	\$690.3	\$690.3	\$846.6	\$156.3
	Radon Action Program Implementation TOTAL	\$506.2	\$770.5	\$690.3	\$690.3	\$846.6	\$156.3
PERMANENT WORKYEARS							

	Radon Action Program Implementation	9.0	14.0	14.0	12.7	17.0	4.3
	TOTAL PERMANENT WORKYEARS	9.0	14.0	14.0	12.7	17.0	4.3
TOTAL WORKYEARS							

	Radon Action Program Implementation	10.7	14.0	14.0	14.0	17.0	3.0
	TOTAL WORKYEARS	10.7	14.0	14.0	14.0	17.0	3.0

RADIATION

Radon Action Program Implementation

Budget Request

The Agency requests a total of \$846,600 supported by 17.0 total workyears for 1989, an increase of \$156,300 and 3.0 total workyears from 1988. All of the request will be for the Salaries and Expenses appropriation.

Program Description

This program is the Regional component of EPA's national Radon Action Program, which addresses indoor radon exposure. Activities support implementation of the national program and include working directly with State and local agencies to assist them to develop self-sufficient radon programs. This involves providing technical assistance to State personnel in developing expertise in measurement, diagnostic evaluation, and mitigation, as well as disseminating information and guidance on radon to the public and local agencies.

RADON ACTION PROGRAM IMPLEMENTATION

1989 Program Request

The Agency requests a total of \$846,600 supported by 17.0 total workyears for this program, an increase of \$156,300 for the Salaries and Expenses appropriation, and 3.0 total workyears from 1988. The increase provides additional emphasis to implementation of the Radon Action Program by working directly with States.

In 1989 the Regional Offices will continue to implement the Radon Action Program by assisting and coordinating radon activities in their respective areas, including State Surveys and the House Evaluation Program. An additional six to eight States will be assisted in the design and conduct of State-wide radon surveys. In addition, screening measurements will be collected in 15,000 to 20,000 homes, and information on the analyses of potential radon areas will be provided to the public. The Regions will provide direct assistance to the States in design of the surveys and will assist in the process of making the results available to the public. The Regions will also continue participation in the House Evaluation Program, with an assessment of approximately 80 houses in 10 States. The Regions will make arrangements for five presentations of the Radon Diagnostic and Mitigation Training Course at selected locations, and will assist the States in their efforts to conduct the course independently.

1988 Program

In 1988 the Agency is allocating a total of \$690,300 supported by 14.0 total workyears for this program, all of which is from the Salaries and Expenses appropriation.

In 1988 Regional Offices are continuing to assist and coordinate activities to support the implementation of the radon program by providing direct support to the States in development of State capabilities. This includes assistance in developing State survey designs and review of State plans for participation in the national assessment of the radon problem, assistance in the development of State radon monitoring capabilities, participation in the House Evaluation Program, and technical advice and assistance. Regional Offices are also participating in the presentation of the Radon Diagnostic and Mitigation Training Course. Support to

States is being provided as needed to deal with the most critical radon problems as they are discovered. The Regions are also continuing to act as distribution points for public information materials and are involved in radon public awareness activities.

1987 Accomplishments

In 1987, the Agency obligated a total of \$506,200 supported by 10.7 total workyears, all of which was from the Salaries and Expenses appropriation.

The Regional Offices supported the Radon Action Program by providing technical assistance to States in their efforts to develop programs to address exposure to indoor radon. Regional efforts included the gathering and dissemination of information materials to the public and local agencies as part of a continuing radon educational program.

ENVIRONMENTAL PROTECTION AGENCY

1989 Budget Estimate

Table of Contents

	<u>Page</u>
<u>INTERDISCIPLINARY</u>	I-1
RESEARCH & DEVELOPMENT	
Intermedia Programs.....	I-7
Scientific Assessment.....	I-13
Technical Information and Liaison.....	I-13
Quality Assurance Management.....	I-14
Exploratory Research Core Program.....	I-15
Reduction of Uncertainties in Risk Assessment (RURA).....	I-16
ABATEMENT & CONTROL	
Environmental Review and Coordination.....	I-19
Interdisciplinary Training Grants.....	I-23
ENFORCEMENT	
Enforcement Policy & Technical Support.....	I-26
Technical Support - Office of Enforcement & Compliance Monitoring	I-29
Enforcement Policy & Operations.....	I-30
Criminal Investigations Program.....	I-32

INTERDISCIPLINARY

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988
--	----------------	----------------------------	-----------------	-----------------------------	-----------------	--

(DOLLARS IN THOUSANDS)

APPROPRIATION

Salaries & Expenses	\$28,700.8	\$31,219.7	\$30,769.2	\$30,769.2	\$31,548.4	\$779.2
Abatement Control and Compliance	\$6,325.6	\$7,349.4	\$8,421.6	\$9,502.7	\$9,672.0	\$169.3
Research & Development	\$21,159.9	\$18,207.5	\$21,508.5	\$21,396.1	\$28,605.0	\$7,208.9
Scientific Activities	\$1.5					
Overseas						
TOTAL, Interdisciplinary	\$56,187.8	\$56,776.6	\$60,699.3	\$61,668.0	\$69,825.4	\$8,157.4

PERMANENT WORKYEARS	553.7	556.7	573.6	587.8	585.7	-2.1
TOTAL WORKYEARS	583.5	602.2	623.5	623.5	623.5	
OUTLAYS	\$61,122.5	\$61,209.7	\$60,288.2	\$61,250.3	\$61,890.5	\$640.2
AUTHORIZATION LEVELS						

All authorization except Research and Development, is by virtue of the Appropriation Act. The Environmental Research, Development and Demonstration Act expired September 30, 1981. Reauthorization is pending.

INTERDISCIPLINARY

OVERVIEW AND STRATEGY

The Environmental Protection Agency's (EPA) Interdisciplinary Program is composed of several activities that cut across programs and are not media specific. These activities address environmental concerns that affect several media and require an interdisciplinary approach. The Interdisciplinary Program includes the Intermedia Research Program within the Research and Development function, the Federal Agencies Compliance Program and the National Environmental Policy Act (NEPA) Compliance Program within the Abatement and Control function, and the legal aspects of the Agency's enforcement efforts.

The Intermedia Research Program consists of five major activities: scientific assessments, technical information and liaison (including regulatory support and technology transfer), exploratory research, quality assurance management and an integrated program to reduce uncertainties in risk assessment. The Scientific Assessment Program has responsibility for developing uniform risk assessment guidelines for Agency-wide application, assuring consistency of approach to guidelines, and coordinating with other agencies through the Risk Assessment Forum. The Technical Information and Liaison Program provides for production and transfer of technical and scientific information products from the Office of Research and Development (ORD) with an emphasis on communicating cost-effective methods for complying with EPA's regulations. The Regulatory Support program continues to ensure that Agency regulation development is consistent with current technical and scientific research findings. The Exploratory Research Program provides long range exploratory research, conducted primarily through grants and academic research centers, including the Visiting Scientist Program. The Quality Assurance Program provides centralized guidance and management for Agency-wide Quality Assurance activities, and performs audits to assess the effectiveness of the Agency's Quality Assurance efforts. The integrated program to reduce uncertainties in risk assessment includes the key projects in exposure model development and exposure-response model development for estimating adverse effects on humans and ecosystems attributable to environmental pollution.

The Environmental Review and Coordination Program accomplishes statutory objectives under the authority of the National Environmental Policy Act (NEPA); Section 309 of the Clean Air Act; and Executive Order 12088 - Federal Compliance with Pollution Control Standards; and includes four program activities as well as support for Regional interdisciplinary projects and EPA technology transfer activities. The NEPA Compliance program assures EPA's actions comply with the intent of NEPA. This includes reviews that are the functional equivalent for those Agency programs that are not specifically covered by NEPA. The Federal Facilities Compliance program oversees Federal compliance with all Federal statutory environmental requirements, and specifically with Executive Order 12088. The Environmental Review program ensures that Federal agencies carry out their activities in an environmentally sound manner pursuant to the National Environmental Policy Act and Section 309 of the Clean Air Act. The Indians program develops and implements policies for dealing with Indian tribes on environmental problems. Regional interdisciplinary projects enable rapid response to unique intermedia environmental problems. EPA's technology transfer activities are intended to improve efficiency and performance in environmental programs through technology transfer and information exchange.

Enforcement Policy and Operations provides consistent direction to EPA enforcement for all non-Superfund media to assure the most effective possible stewardship of EPA's enforcement responsibilities as they contribute to the protection of environmental quality. To accomplish this goal, it establishes compliance

monitoring and enforcement priorities, policies, and procedural guidelines so that enforcement actions are properly selected and prepared; establishes measures to ensure policies and procedures are correctly implemented by the media enforcement programs and Regional offices. It conducts all legal case development, litigation, and adjudicatory hearing activities for media enforcement programs. These activities include oversight of evidence gathering, preparation and management of cases, and referral of cases to the Department of Justice for litigation.

In addition, this program contains the Agency's criminal investigation efforts which entail investigation, preparation, and referral of cases involving criminal violations of environmental statutes. Investigators and attorneys provide support to the Department of Justice during subsequent investigations and prosecution of these cases.

The National Enforcement Investigations Center (NEIC) provides specialized technical expertise in support of EPA enforcement case preparation activities. NEIC serves as a point of coordination and support for complex investigations, which have a national impact on environmental enforcement. In 1989, the NEIC will emphasize the support and resolution of ongoing cases in order to maximize environmental benefits by improving compliance with environmental statutes.

INTERDISCIPLINARY
Enforcement Policy & Technical Support

<u>PROGRAM ACTIVITIES</u>	<u>ACTUAL 1987</u>	<u>BUDGET ESTIMATE 1988</u>	<u>CURRENT ESTIMATE 1988*</u>	<u>ESTIMATE 1989</u>	<u>INCREASE + DECREASE - 1989 VS 1988</u>
<u>Enforcement Actions</u>					
Administrative Orders					
EPA	3053	2619	3070	2869	-201
States	3183	**	*	*	*
New Judicial Referrals					
EPA					
Civil	222	283	268	248	-20
Criminal	41	47	50	55	+5
State					
Civil	723	**	*	*	*
Judicial Cases, Ongoing					
Civil Cases Start of Year	596	**	627	742	+115
Civil Cases Concluded	191	171	153	128	-25
Active Consent Decrees	344	**	*	*	*
Criminal Investigations, New ...	65	83	85	90	+5
Investigations Start of Year..	119	**	*	*	*
Defendants Criminally Charged	66	**	*	*	*
Contractor Listing:					
Delistings and Discretionary Listings	9	**	31	40	+9
Permit Support					
RCRA	105	457	170	149	-21
NPDES	434	433	329	410	+81
UIC	582	505	490	490	0
Penalties Assessed					
Administrative & Civil ... \$24,300,000		**	*	*	*
Criminal \$3,600,000		**	*	*	*

* Future Year Projections are not made for this data element.

** New item fiscal year 1989 budget.

ENVIRONMENTAL PROTECTION AGENCY

1989 Budget Estimate

Table of Contents

	<u>Page</u>
<u>INTERDISCIPLINARY</u>	
RESEARCH & DEVELOPMENT	
Intermedia Programs.....	I-7
Scientific Assessment.....	I-13
Technical Information and Liaison.....	I-13
Quality Assurance Management.....	I-14
Exploratory Research Core Program.....	I-15
Reduction of Uncertainties in Risk Assessment (RURA).....	I-16

INTERDISCIPLINARY
Intermedia Programs

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988
----- (DOLLARS IN THOUSANDS) -----						
PROGRAM -----						
Scientific Assessment Interdisciplinary						
Salaries & Expenses	\$1,190.1	\$1,321.2	\$1,318.2	\$1,318.2	\$1,347.1	\$28.9
Research & Development	\$912.4	\$934.0	\$1,054.0	\$1,054.0	\$898.3	-\$155.7
TOTAL	\$2,102.5	\$2,255.2	\$2,372.2	\$2,372.2	\$2,245.4	-\$126.8
Technical Information & Liaison						
Salaries & Expenses	\$2,417.3	\$2,222.1	\$2,406.1	\$2,406.1	\$2,781.5	\$375.4
Research & Development	\$840.8	\$699.3	\$980.3	\$980.3	\$1,380.3	\$400.0
TOTAL	\$3,258.1	\$2,921.4	\$3,386.4	\$3,386.4	\$4,161.8	\$775.4
Quality Assurance Management						
Salaries & Expenses	\$775.4	\$891.5	\$832.2	\$832.2	\$850.4	\$18.2
Research & Development	\$1,070.0	\$890.8	\$890.8	\$890.8	\$855.4	-\$35.4
TOTAL	\$1,845.4	\$1,782.3	\$1,723.0	\$1,723.0	\$1,705.8	-\$17.2
Exploratory Research Core Program - Interdisciplinary						
Salaries & Expenses	\$875.6	\$593.7	\$1,007.5	\$1,007.5	\$563.2	-\$444.3
Research & Development	\$18,336.7	\$15,683.4	\$15,583.4	\$15,471.0	\$15,471.0	
TOTAL	\$19,212.3	\$16,277.1	\$16,590.9	\$16,478.5	\$16,034.2	-\$444.3
Reduction of Uncertainties in Risk Assessment						
Research & Development			\$3,000.0	\$3,000.0	\$10,000.0	\$7,000.0
TOTAL			\$3,000.0	\$3,000.0	\$10,000.0	\$7,000.0

INTERDISCIPLINARY
Intermedia Programs

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988
----- (DOLLARS IN THOUSANDS) -----						
TOTAL:						
Salaries & Expenses	\$5,258.4	\$5,028.5	\$5,564.0	\$5,564.0	\$5,542.2	-\$21.8
Research & Development	\$21,159.9	\$18,207.5	\$21,508.5	\$21,396.1	\$28,605.0	\$7,208.9
Intermedia Programs TOTAL	\$26,418.3	\$23,236.0	\$27,072.5	\$26,960.1	\$34,147.2	\$7,187.1
 PERMANENT WORKYEARS -----						
Scientific Assessment Interdisciplinary	19.6	23.1	23.1	24.1	24.1	
Technical Information & Liaison	33.0	33.8	33.8	38.1	43.1	5.0
Quality Assurance Management	10.9	14.6	14.6	14.5	14.5	
Exploratory Research Core Program - Interdisciplinary	16.2	9.3	9.3	17.0	9.3	-7.7
TOTAL PERMANENT WORKYEARS	79.7	80.8	80.8	93.7	91.0	-2.7
 TOTAL WORKYEARS -----						
Scientific Assessment Interdisciplinary	21.3	23.1	23.1	24.1	24.1	
Technical Information & Liaison	36.0	33.8	33.8	38.1	43.1	5.0
Quality Assurance Management	11.4	14.6	14.6	14.5	14.5	

INTERDISCIPLINARY
Indermedia Programs

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988

	(DOLLARS IN THOUSANDS)					
Exploratory Research Core Program - Interdisciplinary	16.2	9.3	9.3	17.0	9.3	-7.7
TOTAL WORKYEARS	84.9	80.8	80.8	93.7	91.0	-2.7

INTERDISCIPLINARY

Intermedia Programs

Principal Outputs by Objective

Objective 1: Assure Uniform Risk Assessment

- 1989: o Guidelines for making and using exposure measurements; assessment of risk in the male and female reproductive system; and assessment of systematic toxicant effects (Scientific Assessments)
- o Risk Assessment Forum analyses of specific risk assessment issues (Scientific Assessment)
- o Update of the Integrated Risk Information System (IRIS) (Scientific Assessment)
- 1988: o Proposed guidelines for assessment of risks to male and female reproductive system, and non cancer health effects; continued development of guidelines on ecological risk assessment (Scientific Assessment)
- o Expanded the Integrated Risk Information System (IRIS) (Scientific Assessment)
- 1987: o Completed staff work on guidance for male and female reproductive risk assessment (Scientific Assessment)
- o The Risk Assessment Forum completed analyses and reports on two major issues - procedures for estimating risk associated with exposures to mixtures of chlorinated Dibenzo-p Dioxins and Dibenzofurans (Scientific Assessment)
- o Initiated pilot operation of the Integrated Risk Information System (IRIS) in EPA regions (Scientific Assessment)

Objective 3: Technology Transfer

- 1989: o Handbook on management of non-point sources of pollution (Technical Information)
- o Handbook to identify the costs and the relative efficiencies of best management practices for reducing sources of pollution in rural areas (Technical Information)
- o Handbook on hazardous toxic air pollutants from municipal and pathological hospital incinerators (Technical Information)
- 1988: o Workshops on emerging technologies for upgrading existing or designing new drinking water treatment facilities. (Technical Information)
- o Seminars on solvent waste reduction alternatives (Technical Information)
- 1987: o Handbook on control technologies for hazardous air pollutants (Technical Information)
- o Handbook on accessing and protecting the quality of groundwater resources (Technical Information)

Objective 4: Regulatory Support

- 1989: o Analysis to ensure scientific integrity in the Agency's regulatory development process (Technical Information)
- 1988: o Analysis to ensure scientific integrity in the Agency's regulatory development process (Technical Information)

- 1987: o Analysis to ensure scientific integrity in the Agency's regulatory development process (Technical Information)

Objective 5: Manage the Agency Mandatory Quality Assurance Program

- 1989: o Continuation of management systems reviews (QA Management)
o Review of updated quality assurance program plans (QA Management)
o Review of data quality objectives (QA Management)
- 1988: o Revision of guidance on data quality objectives (QA Management)
o Continuation of audit program for data quality (QA Management)
o Continuation of management systems reviews (QA Management)
- 1987: o Implementation of audit program for data quality (QA Management)
o Policy guidance for developing data quality objectives (QA Management)
o Reviews for quality assurance program plans (QA Management)

Objective 6: Manage/Implement the Exploratory Grants and Centers Program

- 1989: o Solicitation of 1990 research grants proposals (Exploratory Research)
o Annual reports on Grants and Centers Programs (Exploratory Research)
o Bibliography of research grant published articles (Exploratory Research)
- 1988: o Solicitation of 1989 research grants proposals (Exploratory Research)
o Annual reports on Grants and Centers Programs (Exploratory Research)
- 1987: o Awarded 40 new research grants (Exploratory Research)
o Publication of 99 technical articles in refereed journals (Exploratory Research)

Objective 7: Manage/Implement the Distinguished Visiting Scientists Program

- 1989: o Solicitation and selection of scientists and engineers for 1990 Visiting Scientists Program (Exploratory Research)
- 1988: o Solicitation and selection of scientists and engineers for 1989 Visiting Scientists Program (Exploratory Research)
- 1987: o Selection of 5 new scientists or engineers for the Program (Exploratory Research)

Objective 9: Reduction of Uncertainties In Risk Assessments (RURA)

- 1989: o Conduct health risk assessments through measurement of human exposure and improve assessment models (Scientific Assessment)
o Initiate research in the areas of human exposure assessment and characterization of uncertainties in health risk assessment (Scientific Assessment)
o Initiate an integrated research program for improving ecological risk assessment. (Scientific Assessment)
- 1988: o Development of an integrated approach to evaluate/characterize the uncertainties in risk assessments (Scientific Assessment)
o Initiate an integrated research program to improve health risk assessments. (Scientific Assessment)
o Develop an expanded project plans for reduction of uncertainties in health risk assessment (Scientific Assessment)

INTERDISCIPLINARY

Intermedia Programs

Budget Request

The Agency requests a total of \$34,147,200 supported by 91.0 total workyears for 1989, an increase of \$7,187,100 and a decrease of 2.7 total workyears from 1988. Of the request, \$5,542,200 will be for the Salaries and Expenses appropriation and \$28,605,000 will be for the Research and Development appropriation, a decrease of \$21,800 in the Salaries and Expenses appropriation and an increase of \$7,208,900 in the Research and Development appropriation.

Program Description

The Intermedia budget subactivity consists of those ORD programs which cross all media. These are Uniform Risk Assessment, Technical Information and Liaison, Quality Assurance Management, Exploratory Research and Reduction of Uncertainties in Risk Assessment.

Objective 1: Assure Uniform Risk Assessment. This activity provides Agency-wide guidance to perform exposure and risk assessments. These guidelines are intended to ensure uniform assessments that rely on sound scientific principles and information.

Objective 2: Technical Information Product Management. This program manages the development of ORD's scientific and technical information products to ensure they are efficiently planned, controlled, distributed and produced with a high quality.

Objective 3: Technology Transfer. These activities support the Stevenson-Wydler Technology Innovation Act (P.L. 96-480) and the Technology Transfer Act of 1986 by providing States and localities with the technology and scientific data needed to meet their regulatory responsibilities.

Objective 4: Regulatory Support. This activity coordinates available scientific data with proposed regulations in order to ensure that all regulatory decisions are based on the most current technical information.

Objective 5: Manage the Agency Mandatory Quality Assurance Program. This program provides policy direction, management guidance and oversight for the Agency's quality assurance program.

Objective 6: Manage/Implement Exploratory Grants and Centers Program. The grants program funds individual investigator-initiated research in areas of concern to the Agency through an open, competitive, peer-reviewed evaluation process. The long-term exploratory research centers will focus on multi-disciplinary research in eight topic areas.

Objective 7: Manage/Implement Distinguished Visiting Scientists Program. This objective develops and implements programs to strengthen and enhance the quality of the Agency's research programs through the exchange of scientists and the granting of awards for scientific achievement. The major activity is the senior Visiting Scientists program, which enables accomplished scientists to conduct research at ORD laboratories.

Objective 8: Manage/Implement the Small Business Innovative Research (SBIR) Program. This program supports implementation of the Small Business Innovation Development Act (P.L. 97-219), which requires the Agency to award 1.25 percent of its extramural research budget to small business concerns which conduct innovative research.

Objective 9: Reduction of Uncertainties In Risk Assessments (RURA). This program supports an integrated effort to reduce uncertainties in risk assessments.

SCIENTIFIC ASSESSMENT

1989 Program Request

The Agency requests a total of \$2,245,400 supported by 24.1 total workyears for this program, of which \$1,347,100 will be for the Salaries and Expenses appropriation and \$898,300 will be for the Research and Development appropriation. This represents an increase of \$28,900 and a decrease of \$155,700 respectively, and no change in total workyears. The increase in the Salaries and Expenses appropriation reflects a general enhancement of inhouse support for the scientific assessment program. The decrease reflects completion of several risk assessment guidelines.

Assure Uniform Risk Assessment. In 1989 this program will provide guidance on risk assessments through development of guidelines and support documents and offer training to implement the guidelines. In addition, the Risk Assessment Forum activities will develop Agency-wide consensus on risk assessment issues and ensure incorporation into appropriate guidance. The program will also support the Integrated Risk Information System (IRIS).

1988 Program

In 1988, the Agency is allocating a total of \$2,372,200 supported by 24.1 total workyears for this program, of which \$1,318,200 is from the Salaries and Expenses appropriation and \$1,054,000 is from the Research and Development appropriation. The program will provide guidance on risk assessment through development of guidelines and support documents, as well as provide support to the Risk Assessment Forum and the Integrated Risk Information System. The program will also conduct risk assessments research on biostatistics and pharmacokinetics.

1987 Accomplishments

In 1987, the Agency obligated a total of \$2,102,500 supported by 21.3 total workyears, of which \$1,190,100 was from the Salaries and Expenses appropriation and \$912,400 was from the Research and Development appropriation.

In 1987, five risk assessment guidelines were published, training materials were prepared and guideline training sessions were held. The Risk Assessment Forum produced risk assessment reports and the pilot operation of IRIS in the Regions was initiated and a research program to reduce uncertainties in risk assessment was planned.

TECHNICAL INFORMATION AND LIAISON

1989 Program Request

The Agency requests a total of \$4,161,800 supported by 43.1 total workyears, of which \$2,781,500 will be for the Salaries and Expenses appropriation and \$1,380,300 will be for the Research and Development appropriation. This represents an increase of \$375,400 and \$400,000 respectively, and an increase of 5.0 total workyears. This increase represents an expansion of the technology transfer and regional liaison efforts to enhance scientific and technical knowledge on environmental protection within the public and private sectors as mandated by the Stevenson Wudler Act and the Technology Transfer Act of 1986.

Technical Information Product Management. In 1989, the Center for Environmental Research Information (CERI) will track, process, and distribute all ORD reports, develop special reports as needed and produce all ORD project summaries and review them for policy implications. Activities will include processing reports and journal articles to the National Technical Information Service (NTIS), reviewing and controlling the quality of project summaries, and printing and distributing ORD information products. In 1989, CERI estimates it will receive 1,400 reports for processing to NTIS.

Technology Transfer. ORD disseminates technical data in response to requests from the EPA program offices, the EPA regional offices, States, and private industry. These activities will be carried out in support of the Stevenson-Wydler Technology Innovation Act. Activities will include the design, production, quality control, and distribution of materials such as design manuals, users' guides, handbooks and workshops and a program to increase utilization of computer assisted information exchange.

Regulatory Support. In 1989, the program will coordinate the available scientific data with proposed regulations. This will ensure that all regulatory decisions are based on the most current technical information. Responsibilities include participation in Agency regulatory workgroups, review of option/ selection packages, and analysis of regulatory requirements.

Regional Scientists Liaison. This program will be expanded in 1989 to permit full implementation of the Regional Scientists Program. The program will provide an ORD scientist as a liaison officer on station in each Regional Office to enhance regional access to ORD information and staff.

1988 Program

In 1988, the Agency is allocating a total of \$3,386,400 supported by 38.1 total workyears for this program, of which \$2,406,100 is from the Salaries and Expenses appropriation and \$980,300 is from the Research and Development appropriation. CERI activities in 1988 include tracking, processing and distributing all ORD reports, developing special reports as needed; and producing ORD summaries. Technology transfer activities support the production of technology transfer tools for the Program Offices and the Regions. Regulatory support activities include ensuring technically sound development of Agency regulations. The Regional Scientists Program will be expanded to 5 regions.

1987 Accomplishments

In 1987, the Agency obligated a total of \$3,258,100 supported by 36.0 total workyears for this program, of which \$2,417,300 was from the Salaries and Expenses appropriation and \$840,800 was from the Research and Development appropriation. Major accomplishments in 1987 included processing of over 1,300 documents to NTIS. Approximately 400 project summaries were produced and distributed and over 30,000 requests for publications were answered.

QUALITY ASSURANCE MANAGEMENT

1989 Program Request

The Agency requests a total of \$1,705,800 supported by 14.5 total workyears for this program, of which \$850,400 will be for the Salaries and Expenses appropriation and \$855,400 will be for the Research and Development appropriation. This represents an increase of \$18,200 and a decrease of \$35,400, respectively, and no change in total workyears. The increase in the Salaries and Expenses appropriation reflects a general enhancement of inhouse support for the quality assurance

program. The decrease in the Research and Development appropriation reflects completion of major efforts related to quality assurance program plans production and review.

Manage the Agency Mandatory Quality Assurance Program. In 1989, Program Offices, Regional offices and ORD laboratories will implement quality assurance procedures consistent with Agency policy to ensure that data generated by EPA are reliable, valid and accurate. This program includes ongoing review of QA Program Plans, revision of guidance on Data Quality Objectives; support for development of Data Quality Objectives; continuation of Management Systems Audits; implementation of alternative laboratory quality control procedures, and continuation of a program to audit data quality.

1988 Program

In 1988, the Agency is allocating a total of \$1,723,000 supported by 14.5 total workyears for this program, of which \$832,200 is from the Salaries and Expenses appropriation and \$890,800 is from the Research and Development appropriation. Quality assurance activities in 1988 involve the implementation and evaluation of programs to support the development of Agency data of known and acceptable quality.

1987 Accomplishments

In 1987, the Agency obligated a total of \$1,845,400 supported by 11.4 total workyears for this program, of which \$775,400 was from the Salaries and Expenses appropriation and \$1,070,000 was from the Research and Development appropriation. Accomplishments in 1987 included the review of Quality Assurance Program Plans, development of guidance on Data Quality Objectives, performance of Management Systems Audits, development of alternative procedures for measurement methods validation and laboratory quality control techniques and quality assurance training.

EXPLORATORY RESEARCH CORE PROGRAM

1989 Program Request

The Agency requests a total of \$16,034,200 supported by 9.3 total workyears for this program. Of this total, \$563,200 will be for the Salaries and Expenses appropriation and \$15,471,000 will be for the Research and Development appropriation. This represents a decrease of \$444,300 in Salaries and Expenses appropriation and a decrease of 7.7 total workyears. There is no change in the Research and Development appropriation. The decrease in the Salaries and Expenses appropriation is the result of efficiencies in administering the Grants and Centers program and the transfer of personnel to the Regional Scientists Program.

Manage/Implement Exploratory Research Grants and Centers Program. The Agency requests a total of \$8,271,000 in extramural funds for the Exploratory Research Grants program. This program will award 45 new grants and continue support for 30 grants. Applications from individual researchers will be received, peer reviewed and analyzed for relevance to EPA's mission and priorities. The program will emphasize: continued improvement in quality of research; coordination with the Agency's research planning process; dissemination of results from completed grants; and coordination with other Federal agencies. Seminars and workshops featuring the completed work of grantees will continue in Agency laboratories and at other locations around the country.

The Agency requests a total of \$4,500,000 of extramural funds (\$560,000 per center) for the Centers program to support studies of high priority to the Agency

such as groundwater and hazardous waste control technologies. Management attention in the eight operating centers will focus on new trends and discoveries coming from ongoing research studies. The eight university centers and their research themes are as follows: Louisiana State University-Hazardous Waste Research; Cornell University-Ecosystems Research; Illinois Institute of Technology-Industrial Waste Elimination Research; University of California (Los Angeles)-Intermedia Transport Research; University of Rhode Island-Marine Sciences Research; University of Pittsburgh-Environmental Epidemiology; University of Illinois (Urbana)-Advanced Environmental Control Technology Research; and Rice, University of Oklahoma, Oklahoma State University-Groundwater Research. An annual report will summarize the activities and accomplishments of the centers. Symposia, workshops and publications in referred journals ensure that information learned from center studies is shared.

Manage/Implement Distinguished Visiting Scientists Program. This program will enable distinguished scientists and engineers to work in ORD laboratories. Eminent scientists and engineers will collaborate with their counterparts in ORD laboratories on relevant areas of research.

Manage/Implement the Small Business Innovative Research (SBIR) Program. The Agency requests a total of \$2,500,000 (1.25 percent of the extramural research budget) for the SBIR program to provide 36 awards in 1989 to small business conducting innovative research.

1988 Program

In 1988, the Agency is allocating a total of \$16,478,500 supported by 17.0 total workyears for this program, of which \$1,007,500 is from the Salaries and Expenses appropriation and \$15,471,000 is from the Research and Development appropriation. Of the total extramural request, this program will provide \$8,152,400 for Exploratory Research Grants, \$4,260,000 for the research centers, and \$2,318,600 for the SBIR program. In 1988, the Exploratory Research Grants program will review 300 grant proposals, award 3 new grants and continue support for 72 grants. The program will also manage the academic research centers to support the Agency's long-term research needs. The Visiting Scientists Program is enabling outside scientists and engineers to conduct research in ORD laboratories. The SBIR program will make 36 awards to small business.

1987 Accomplishments

In 1987, the Agency obligated a total of \$19,212,300 supported by 16.2 total workyears for this program, of which \$875,600 was from the Salaries and Expenses appropriation and \$18,336,700 was from the Research and Development appropriation. In 1987, the Exploratory Research program reviewed 375 grant proposals, awarded 40 new grants and continued support for 97 grants. The Visiting Scientists Program sponsored the work of 15 researchers in ORD laboratories to strengthen EPA's scientific basis for regulatory decision making.

REDUCTION OF UNCERTAINTIES IN RISK ASSESSMENT

1989 Program Request

The Agency requests a total of \$10,000,000 for this program. Of this total, \$10,000,000 will be for the Research and Development appropriation. This represents an increase of \$7,000,000 in the Research and Development appropriation. The increase represents an orderly expansion of the program to the level envisioned by the appropriation committee in the 1988 enactment and will include expansion of the human health risk efforts initiated in 1988 and initiation of an integrated program for reduction of uncertainties in ecological risk assessment.

Human Health Risk Assessment. Research will be directed to develop improved methods for measurement and estimation of exposure and dose and to develop improved exposure-response models. In the case of human health exposure-response model development, emphasis will be on biologically based dose-response model and improved approaches to link exposure, dose and adverse effect.

Ecological Risk Assessment. The emphasis will be placed on three areas of uncertainty. First, the program will address the uncertainty of how ecosystems function. Research will be directed towards measuring the current state of ecosystems, determining the nature, rate and direction of change and estimating the system vulnerability. Second, the program will conduct research to identify and measure ecological endpoints and interpret evaluations of functional change. Third, research will be performed to assess hazards associated with ecosystem stress.

1988 Program

The Agency is allocating \$3,000,000 from the Research and Development appropriation to develop a comprehensive program for reducing uncertainties in human health risk assessment. Activities will implement the integrated plan developed to reduce the gaps in the data base and improve the reliability of models required to estimate the adverse health effects of environmental pollution.

ENVIRONMENTAL PROTECTION AGENCY

1989 Budget Estimate

Table of Contents

	<u>Page</u>
<u>INTERDISCIPLINARY</u>	
ABATEMENT & CONTROL	
Environmental Review and Coordination.....	I-19
Interdisciplinary Training Grants.....	I-23

INTERDISCIPLINARY
Environmental Review and Coordination

ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988
----------------	----------------------------	-----------------	-----------------------------	-----------------	--

(DOLLARS IN THOUSANDS)

PROGRAM

Environmental Review
and Coordination

Salaries & Expenses	\$4,540.7	\$5,167.2	\$4,753.6	\$4,753.6	\$5,008.0	\$254.4
Abatement Control and Compliance	\$3,483.5	\$5,407.9	\$6,516.8	\$7,561.2	\$7,730.5	\$169.3
TOTAL	\$8,024.2	\$10,575.1	\$11,270.4	\$12,314.8	\$12,738.5	\$423.7

TOTAL:

Salaries & Expenses	\$4,540.7	\$5,167.2	\$4,753.6	\$4,753.6	\$5,008.0	\$254.4
Abatement Control and Compliance	\$3,483.5	\$5,407.9	\$6,516.8	\$7,561.2	\$7,730.5	\$169.3

Environmental Review and Coordination	TOTAL	\$8,024.2	\$10,575.1	\$11,270.4	\$12,314.8	\$12,738.5	\$423.7
---------------------------------------	-------	-----------	------------	------------	------------	------------	---------

PERMANENT WORKYEARS

Environmental Review and Coordination	102.6	112.4	115.4	107.2	115.4	8.2
TOTAL PERMANENT WORKYEARS	102.6	112.4	115.4	107.2	115.4	8.2

TOTAL WORKYEARS

Environmental Review and Coordination	110.5	112.4	115.4	115.4	115.4
TOTAL WORKYEARS	110.5	112.4	115.4	115.4	115.4

INTERDISCIPLINARY

Environmental Review and Coordination

Budget Request

The Agency requests a total of \$12,738,500 supported by 115.4 total workyears for 1989, an increase of \$423,700 and no change in total workyears from 1988. Of the request, \$5,008,000 will be for the Salaries and Expenses appropriation and \$7,730,500 will be for the Abatement, Control and Compliance appropriation, an increase of \$254,400 in Salaries and Expenses and an increase of \$169,300 in the Abatement, Control and Compliance appropriation.

Program Description

Environmental Review and Coordination -- This activity includes the following four programs. National Environmental Policy Act (NEPA) Compliance contains resources for assuring EPA's actions comply with the intent of NEPA and other non-EPA administered environmental laws (such as the Endangered Species Act and the National Historic Preservation Act). The NEPA Compliance program also provides assistance to other EPA programs in conducting functionally equivalent analyses.

Federal Facilities Compliance deals with control of pollution at Federal installations. Under Executive Order 12088, EPA is directed to: (1) provide technical advice and assistance to Federal agencies to ensure that their facilities comply with pollution control requirements in a cost-effective and timely manner; (2) assist Federal agencies and OMB in developing budgetary plans for controlling pollution at Federal facilities; and (3) resolve disputes regarding Federal facilities' violations of pollution control requirements through administrative mechanisms. The Federal Facility compliance effort is a comprehensive multi-media program which works with and coordinates the individual single-media programs to establish one integrated and focused effort, enabling EPA to deal with other Federal agencies on their pollution control problems in a highly efficient and effective manner, not through fragmented, single-media approaches.

Pursuant to NEPA and Section 309 of the Clean Air Act, the Environmental Review program reviews and comments publicly on the environmental impact of proposed projects, regulations, and other major Federal actions. This broad mandate encourages expedited environmental assessment of all Federal projects and activities. The major objective is to minimize the adverse environmental impacts of Federal proposals by: (1) effective liaison with other Federal agencies, (2) early identification of significant environmental issues, and (3) timely review of major actions.

The Indian Program coordinates the extension of EPA programs to American Indian tribes. This effort emphasizes coordination of Agency activities and support of activities designed to improve the environmental management capability of Tribal governments. It includes identification of, and work on, priority Tribal projects and resolution of legal, policy, and procedural problems hampering EPA's ability to work with Tribal governments.

ENVIRONMENTAL REVIEW AND COORDINATION

1989 Program Request

The Agency requests a total of \$12,738,500 supported by 115.4 total workyears for this program, of which \$5,008,000 will be for the Salaries and Expenses appropriation and \$7,730,500 is for the Abatement, Control and Compliance appropriation. This represents an increase of \$254,400 in Salaries and Expenses, an increase of \$169,300 in Abatement, Control and Compliance, and no change in total workyears. The

increase will ensure that EPA complies with its NEPA requirements and supports the development of State environmental review programs for State Revolving Funds. An increase in the demand for NEPA Compliance resources in conducting functionally equivalent analyses, particularly in the CERCLA and TSCA areas is also expected. In 1989, a new Federal Facilities Compliance Strategy will be fully implemented which utilizes new approaches to compliance and enforcement response. Emphasis will be placed on management techniques such as environmental auditing. The Agency will continue to review and comment on draft and final EISs and improve coordination with other Federal agencies with respect to the Section 309 and NEPA review processes. Finally, the Agency will continue overall "outreach" with Tribal groups by providing in extramural resources. These resources will continue implementation of the Agency's Indian program, through technical support and consultation designed to strengthen the environmental management capabilities of Tribal governments.

Extramural resources included in this request also will support Agency-wide Interdisciplinary Environmental Projects. These funds, to be expended on special environmental projects, will enable rapid Regional response to significant or unique intermedia environmental problems. Resources will also support the Agency's technology transfer efforts. EPA's technology transfer activities will be aimed at achieving improved efficiency and performance in environmental programs in the field by providing better technology transfer and technical information exchange between EPA Headquarters, Regions, States, local government and industry.

1988 Program

In 1988, the Agency is allocating a total of \$12,314,800 supported by 115.4 total workyears for this program, of which \$4,753,600 is from the Salaries and Expenses appropriation and \$7,561,200 from the Abatement, Control and Compliance appropriation. In 1988, the NEPA Compliance program continues to assure that EPA actions in wastewater treatment facility construction comply with NEPA. It also provides assistance to delegated State construction grants programs, ensures that EPA-issued NPDES new source permits are in compliance with NEPA, assists EPA's Office of Research and Development and laboratories in meeting NEPA requirements for research and development projects and assists EPA Regional program offices in their efforts to comply with other environmental laws and to carry out reviews equivalent to NEPA. The Agency continues to assist Federal agencies in identifying facilities needing pollution controls, determining the most cost-effective control, and resolving disputes surrounding facilities which are out of compliance. Particular emphasis is placed on hazardous waste problems on Federal installations in cooperation with the Office of Solid Waste and Emergency Response. The Agency is also continuing to work on the review of environmental impacts of proposed projects, regulations, and other major Federal actions, as required by both NEPA and Section 309. The major objective is to minimize the adverse environmental impacts of Federal proposals by: (1) effective liaison with other Federal agencies, (2) early identification of significant environmental issues, and (3) timely review of major actions. In 1988, technical assistance continues to be provided to selected Indian tribes with the focus of the Indian programs being priority environmental problems on Tribal lands.

1988 Explanation of Changes from the Enacted Level

The net increase of \$1,044,100 results from the following action:

- Reprogramming - (+1,044,100) This increase is the result of two reprogrammings. The net increase of \$300,000 supports Regional interdisciplinary environmental projects. The increase of \$744,100 supports continued efforts to ensure that the Agency complies with its NEPA requirements and supports the development of State environmental review programs for the State Revolving Fund.

1987 Accomplishments

In 1987, the Agency obligated a total of \$8,024,200 supported by 110.5 workyears for this program, of which \$4,540,700 was from the Salaries and Expenses appropriation and \$3,483,500 from the Abatement, Control and Compliance appropriation. The NEPA Compliance program increased emphasis on oversight of State programs which are doing much of the basic environmental analysis. EPA also continued work on site-specific assessments and EISs, and increased efforts in conducting functionally equivalent analyses especially in the hazardous and toxic waste areas. The Agency continued its efforts to provide technical advice and assistance to Federal agencies to ensure that their facilities comply with pollution control requirements in a cost effective manner; to review and comment on proposed actions of other Federal agencies' actions to ensure that public health and the environment were protected; to improve liaison with other Federal agencies; and, to identify and resolve environmental concerns on Indian lands. In 1987, the Agency worked to improve the environmental management capability of Tribal governments, including outreach and technical assistance and resolution of legal, policy, and procedural problems hampering EPA's ability to work with Tribes.

INTERDISCIPLINARY
Interdisciplinary Training Grants

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988
<hr/>						
(DOLLARS IN THOUSANDS)						
<hr/>						
PROGRAM						
<hr/>						
Interdisciplinary Training Grants						
Abatement Control and Compliance		\$1,074.2				
TOTAL		\$1,074.2				
TOTAL:						
Abatement Control and Compliance		\$1,074.2				
Interdisciplinary Training Grants						
TOTAL		\$1,074.2				

INTERDISCIPLINARY

Interdisciplinary Training Grants

Budget Request

The Agency requests no resources for this activity in 1989.

Program Description

This program provides academic and professional training to State and local environmental personnel in the areas of pollution control and environmental engineering. The program also provides economic support, through fellowships and training grants, to minority students to allow them to receive academic training in the environmental field.

INTERDISCIPLINARY TRAINING GRANTS

1989 Program Request

The Agency requests no resources for this program.

1988 Program

In 1988, the Agency is allocating no resources for this program.

1987 Accomplishments

In 1987, the Agency obligated a total of \$1,074,200 for this program, all of which was from the Abatement, Control and Compliance appropriation. In 1987, this program funded 63 minority fellowships; 41 fellowships for academic training to State personnel involved in administering and implementing State Public Water Supply Systems and Underground Injection Control programs as well as funded a National Environmental Health Association grant to support training of State hazardous waste personnel. In addition, the program conducted 33 EPA-sponsored training courses for State/local personnel in the area of air pollution control technologies.

Enforcement

ENVIRONMENTAL PROTECTION AGENCY

1989 Budget Estimate

Table of Contents

	<u>Page</u>
<u>INTERDISCIPLINARY</u>	
ENFORCEMENT	
Enforcement Policy & Technical Support.....	I-26
Technical Support - Office of Enforcement & Compliance Monitoring	I-29
Enforcement Policy & Operations.....	I-30
Criminal Investigations Program.....	I-32

INTERDISCIPLINARY
Enforcement Policy & Technical Support

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988	
----- (DOLLARS IN THOUSANDS) -----							
PROGRAM -----							
Technical Support Office of Enforcement And Compliance Monitoring							
Salaries & Expenses	\$3,480.9	\$3,273.4	\$3,274.0	\$3,274.0	\$3,281.8	\$7.8	
Abatement Control and Compliance	\$1,409.9	\$1,610.9	\$1,610.9	\$1,610.9	\$1,610.9		
TOTAL	\$4,890.8	\$4,884.3	\$4,884.9	\$4,884.9	\$4,892.7	\$7.8	
Enforcement Policy & Operations							
Salaries & Expenses	\$13,363.0	\$15,543.8	\$14,844.4	\$14,844.4	\$15,076.7	\$232.3	
Abatement Control and Compliance	\$358.0	\$330.6	\$293.9	\$330.6	\$330.6		
TOTAL	\$13,721.0	\$15,874.4	\$15,138.3	\$15,175.0	\$15,407.3	\$232.3	
Criminal Investigation Program							
Salaries & Expenses	\$2,057.6	\$2,206.8	\$2,330.2	\$2,330.2	\$2,639.7	\$309.5	
TOTAL	\$2,057.6	\$2,206.8	\$2,330.2	\$2,330.2	\$2,639.7	\$309.5	
TOTAL:							
Salaries & Expenses	\$18,901.5	\$21,024.0	\$20,448.6	\$20,448.6	\$20,998.2	\$549.6	
Abatement Control and Compliance	\$1,767.9	\$1,941.5	\$1,904.8	\$1,941.5	\$1,941.5		
Enforcement Policy & Technical Support	TOTAL	\$20,669.4	\$22,965.5	\$22,353.4	\$22,390.1	\$22,939.7	\$549.6

INTERDISCIPLINARY
Enforcement Policy & Technical Support

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988
----- (DOLLARS IN THOUSANDS) -----						
PERMANENT WORKYEARS -----						
Technical Support Office of Enforcement And Compliance Monitoring	53.2	61.5	62.5	61.5	61.8	3
Enforcement Policy & Operations	267.4	312.5	321.5	296.2	312.9	16.7
Criminal Investigation Program	30.8	35.0	38.0	42.4	42.4	
TOTAL PERMANENT WORKYEARS	351.4	409.0	422.0	400.1	417.1	17.0
TOTAL WORKYEARS -----						
Technical Support Office of Enforcement And Compliance Monitoring	62.1	61.5	62.5	61.5	61.8	3
Enforcement Policy & Operations	293.6	312.5	321.5	312.2	312.9	7
Criminal Investigation Program	32.4	35.0	38.0	42.4	42.4	
TOTAL WORKYEARS	388.1	409.0	422.0	416.1	417.1	1.0

INTERDISCIPLINARY

Enforcement Policy and Technical Support

Budget Request

The Agency requests a total of \$22,939,700 supported by 417.1 total workyears for 1989, an increase of \$549,600 and 1.0 total workyear from 1988. Of the request, \$20,998,200 will be for the Salaries and Expenses appropriation and \$1,941,500 will be for the Abatement, Control and Compliance appropriation, an increase of \$549,600 in the Salaries and Expenses appropriation and no change in the Abatement, Control and Compliance appropriation.

Program Description

The program areas under this subactivity include:

Technical Support - Office of Enforcement and Compliance Monitoring -- The National Enforcement Investigations Center (NEIC) provides Headquarters and Regional offices with technical support for litigation development in enforcement cases which have major precedential implications, require unusual or extremely sophisticated technical support, or require national management. In addition, the Center provides a full range of technical support to the Agency's criminal investigation program. NEIC provides technical assistance for criminal litigation under all statutes administered by the Agency.

Enforcement Policy and Operations -- This program provides the legal enforcement and compliance monitoring component of the Agency's enforcement programs in all non-Superfund media. The Headquarters component is responsible for implementation of all aspects of legal activities in which EPA is a plaintiff and provides consistent direction and coordination of Agency legal enforcement policies, strategies, and case development activities. In addition, the Headquarters component is responsible for oversight of the Agency's compliance efforts, including establishment of Agency-wide criteria for use in the development of media-specific compliance strategies, negotiation of compliance and enforcement commitments, and overview of program implementation. The Office of Enforcement and Compliance Monitoring conducts cross-media analyses of Agency compliance and enforcement activities and is a leader in fostering new compliance and enforcement approaches. It is also responsible for the Agency's judicial enforcement docket and related Agency-wide enforcement information systems.

Regional legal resources are used to translate national priorities into a credible enforcement presence which is both tailored to particular Regional characteristics and designed to maintain statutory compliance in the most cost-effective manner. Consultation is provided to Regional media programs for the development of effective compliance monitoring and enforcement strategies, including advice on choice of administrative and judicial remedies. Emphasis is placed on timely and appropriate enforcement response to significant violations and management of ongoing caseload to achieve equitable resolution and swift return of violators to compliance. Cooperation with State enforcement agencies in pursuit of timely and appropriate enforcement remedies and maintenance of an effective Federal enforcement presence are important goals of this program.

Criminal Investigations -- This program provides a nationally directed, Regionally implemented system for the investigation and swift prosecution of suspected criminal violations of environmental statutes. A significant objective of this program is to act as a deterrent to violation of environmental laws. The program is operated in cooperation with comparable State activities, and in close partnership with other Federal law enforcement agencies.

TECHNICAL SUPPORT - OFFICE OF ENFORCEMENT AND COMPLIANCE MONITORING

1989 Program Request

The Agency requests a total of \$4,892,700 supported by 61.8 total workyears for this program, of which \$3,281,800 will be for the Salaries and Expenses appropriation and \$1,610,900 will be for the Abatement, Control and Compliance appropriation. This represents an increase of \$7,800 in the Salaries and Expenses appropriation, and an increase of .3 total workyears from 1988. The increases reflect greater emphasis on management of criminal litigation.

In 1989, NEIC will continue to provide case development support in nationally managed cases having precedential implications, unique technological requirements, and resource requirements exceeding Regional capabilities. NEIC will continue implementation of rigorous technical compliance monitoring procedures particularly with respect to groundwater contamination, air toxics, and municipal and pretreatment compliance. The Center will devote an increased proportion of its resources to implementation of the Resource Conservation and Recovery Act (RCRA) "hammer" provisions, national compliance investigations of multi-facility waste disposal firms and environmental audit inspections. Substantial attention will also be given to design and use of automated enforcement information systems (e.g. evidence audit and consent decree tracking). Technical support will be provided to the criminal investigation program. NEIC will also continue to provide technical leadership in support of special studies required for cross-media geographic enforcement initiatives. The Center will also continue to expand its collaboration with State and other Federal law enforcement agencies.

1988 Program

In 1988, the Agency is allocating a total of \$4,884,900 supported by 61.5 total workyears for this program, of which \$3,274,000 is from the Salaries and Expenses appropriation and \$1,610,900 is from the Abatement, Control and Compliance appropriation.

In 1988, NEIC resources are supporting the development and prosecution of significant enforcement litigation in all media. The Center's primary responsibilities include providing assistance in litigation case preparation by performing background analysis, and evidence audit support; field investigations; laboratory analysis; technical testimony; and negotiation of the technical aspects of consent decrees. Cases are selected for NEIC support on the basis of program and Regional enforcement priorities.

The Center continues to serve as a point of coordination with both Federal and State law enforcement and environmental protection agencies. It provides technical assistance and training to personnel in these agencies on topics which are vital to effective environmental enforcement (such as evidence handling, laboratory procedures, and criminal investigative techniques). The Center also continues to experiment with ways to make information systems function as a more effective management tool in targetting environmental enforcement actions.

1987 Accomplishments

In 1987, the Agency obligated a total of \$4,890,800 supported by 62.1 total workyears for this program, of which \$3,480,900 was from the Salaries and Expenses appropriation and \$1,409,900 was from the Abatement, Control and Compliance appropriation.

In all statutory areas, case preparation activities and technical support to enforcement actions against significant violators were provided. Particular emphasis was placed on support to the RCRA program, including auditing contractor performance on hazardous waste transportation and disposal, and work on illegal fuel blending. The NEIC provided compliance evaluations, performance audit inspections, multi-media inspections, and evaluations of major publicly owned treatment works suspected of noncompliance, as well as Clean Water Act case support. Technical assistance was also provided to the pesticides and toxics enforcement efforts, with particular emphasis on polychlorinated biphenyls (PCB's) and management of Confidential Business Information in Toxic Substances Control Act (TSCA) case preparation.

ENFORCEMENT POLICY AND OPERATIONS

1989 Program Request

The Agency requests \$15,407,300 supported by 312.9 total workyears for this program, of which \$15,076,700 will be for the Salaries and Expenses appropriation and \$330,600 will be for the Abatement, Control and Compliance appropriation. This represents an increase of \$232,300 in Salaries and Expenses and an increase of 0.7 in total workyears. The increases reflect additional support to the Water Quality Act.

In 1989, the enforcement consequences of several major statutory deadlines will require aggressive Agency use of legal resources (eg: RCRA surface impoundment, National Municipal Policy, TSCA PCB equipment disposal and ozone nonattainment). Coupled with the urgent need for vigorous prosecution of a growing judicial docket, these and other emerging statutory priorities will demand the utmost in efficient and imaginative use of legal talent and authorities.

Headquarters resources will focus on provision of appropriate guidance, operating support and results assessment for the legal enforcement work being carried out by the Regions. Due to the successful completion of ventures undertaken in 1987 and 1988 to streamline the enforcement process, attention will shift away from policy development and direct litigation management toward capacity building (for both Regions and States) and broad program oversight to ensure that Agency efforts are both focussed on appropriate targets and on achieving proper results.

Policy work will continue in areas of new statutory interpretation and development of better Agency strategy, based on lessons learned from oversight. Similarly, Headquarters staff will participate in a limited number of judicial and administrative cases which demand national expertise. In addition, continued growth in the contractor listing program will require increased Headquarters attention, and special efforts will be made to expand criminal enforcement capabilities in States.

The Regions will be responsible for line management of judicial cases and, on a more selective basis, administrative litigation. Within the context of Agency and Congressional enforcement priorities for initiating new actions, Regional resources will also press for successful closure of cases active on the Agency's growing judicial docket, as well as careful oversight and follow-through on active consent decrees with conditions still unmet. Support will also be given to permit decisions and appeals, as well as the development of criminal investigations and referrals.

The Agency's use of enforcement orders with penalties especially under the Clean Water, Safe Drinking Water and Hazardous and Solid Waste authorities, will promote a more effective administrative enforcement program. Expansion of administrative enforcement authorities and streamlining procedures will enable Regional

resources to adequately support workload projected for each of the Agency's major media. Particular areas of emphasis will include:

in Water

- ° completion of National Municipal Policy enforcement
- ° aggressive use of administrative penalty authority against POTW's for failure to implement pretreatment requirements
- ° aggressive administrative enforcement support for wetlands protection
- ° enforcement of new SDWA monitoring requirements, with particular emphasis on high hazard contaminants

in Air

- ° enforcement support to the Agency's post-1987 ozone strategy
- ° enforcement of PM₁₀ and SO₂ Continuous Emission Monitoring requirements

in Waste

- ° surface impoundment deadline enforcement
- ° enforcement against permit violations
- ° enforcement followup to HSWA "hammer" provisions
- ° enforcement of corrective action measures

in Toxics

- ° PCB disposal enforcement
- ° enforcement against premanufacture notice and existing chemical compliance violations

in Pesticides

- ° more aggressive enforcement against pesticides misuse.

1988 Program

In the 1988, the Agency is allocating a total of \$15,175,000 supported by 312.2 total workyears for this program, of which \$14,844,400 is from the Salaries and Expenses appropriation and \$330,600 is from the Abatement, Control and Compliance appropriation.

The scope of the Agency's enforcement agenda in 1988 is sufficiently broad and complex that successful support can only be maintained by continuing to build vigorously on management initiatives begun in 1987. At Headquarters, substantial effort is being devoted to bringing into successful operation several major ventures designed to streamline the enforcement process. In addition, significant efforts are being made to test and refine innovative enforcement techniques, such as alternative dispute resolution. Coupled with implementation of projects designed to enhance the line management capacity of the Regions, these strategies should enable the Agency to meet its enforcement commitments. Headquarters resources continue, as well, to focus on direct involvement in major national litigation which demands special expertise, and in test cases under new statutory authority (such as the administrative authorities under the Water Quality Act). Management of the growing contractor listing program will continue to demand attention, as will the criminal enforcement program (with particular emphasis on enhancing State capabilities).

In 1988, Regional legal resources are devoted to supporting program enforcement priorities in all media. Levels of effort reflect continuing work in mature programs (Air, TSCA), introduction of new approaches (administrative penalty actions in SDWA, CWA) and increased efforts to successfully cope with major statutory deadlines

(National Municipal Policy, RCRA land ban). Regional staff have devoted effort to improving the speed (while safeguarding the outcome) of the enforcement process. Specific examples include:

- development of standard approaches for use in certain types of administrative enforcement actions, to reduce legal review time;
- expansion of the use of paralegal specialists and experimentation with use of civil investigators;
- greater use of new settlement techniques, such as environmental auditing provisions.

These approaches, taken in conjunction with careful and comprehensive Regional planning of enforcement strategy, enable Regional legal resources to keep pace with more, and more complicated enforcement actions.

1987 Accomplishments

In 1987, the Agency obligated a total of \$13,721,000 supported by 293.6 total workyears for this program, of which \$13,363,000 was from the Salaries and Expenses appropriation and \$358,000 was from the Abatement, Control and Compliance appropriation.

The thrust of this program in 1987 was maintenance of vigorous enforcement and compliance monitoring partnerships with the States to produce maximum environmental results. Activities at Headquarters included monitoring of the legal policy guidance and case management for the criminal investigation program, articulation and updating of national enforcement priorities and legal enforcement policies for major media programs, and operation of the Strategic Planning and Management System for Agency enforcement. Particular emphasis was placed on policy and guidance necessary to swiftly implement the enforcement provisions of the Clean Water Act as amended.

Regional legal enforcement resources were devoted to resolution of ongoing judicial and administrative cases, generation of civil referrals most likely to return significant violators to compliance, and maintaining a credible enforcement presence. Swift implementation of new authorities under the amended Safe Drinking Water Act and Clean Water Act provided the basis for major enforcement initiatives. Regional legal support was also provided to the criminal investigation program.

CRIMINAL INVESTIGATIONS PROGRAM

1989 Program Request

In 1989, the Agency requests a total of \$2,639,700 supported by 42.4 total workyears for this program, all of which will be for the Salaries and Expenses appropriation. This represents an increase of \$309,500 and no change in total workyears from 1988. The increase supports additional operating costs for travel, training and special equipment for the criminal investigators.

The objective of this program will continue to be forceful deterrence of violation of environmental laws by providing the regulated community clear evidence that willful statutory violations will be met with harsh sanctions in terms of both jail sentences and monetary fines. Close coordination will continue with each media program, to insure the most effective targetting of these resources.

Substantial effort will be made to expand and strengthen the partnership with State and other Federal law enforcement agencies. Specific program emphasis will include the following:

- in RCRA, illegal disposal, storage and transportation of waste to unpermitted facilities; blended fuel/waste oil; loss-of-interim-status reduction in on-site capacity; land disposal bans; small quantity generators;
- in CWA/SDWA, data falsification connected with greater use of toxicity limits in NPDES permits; unpermitted discharges;
- in TSCA/FIFRA, illegal disposal of PCBs; falsification of data; deliberate failure to report data to EPA;
- in CAA, air toxics, asbestos demolition; lead phase-down; major motor vehicle pollution control violations.

1988 Program

In 1988, the Agency is allocating a total of \$2,330,200 supported by 42.4 total workyears for this program, all of which is from the Salaries and Expenses appropriation.

In 1988, the criminal investigation program expands its operation as a national network, with particular emphasis on hazardous waste enforcement (where there is likely to be a significant increase in criminal activity due to the provisions of the reauthorized RCRA) and water quality enforcement (where new felony provisions provide improved opportunities for deterrence). In addition, priority is being given to cases with the greatest deterrent impact in the areas of air toxics, data falsification and deliberate failure to report to EPA under TSCA. The program stresses close coordination with administrative and civil judicial enforcement initiatives to maximize the number of significant violators brought into compliance. This program continues to work closely with State criminal enforcement efforts through the Hazardous Waste Coordinating Committees in the northeast and southwest, and the National Association of Attorneys General. In addition, close working partnerships are maintained with other Federal law enforcement agencies. For example, the Agency is implementing a Memorandum of Understanding with the U.S. Customs Service to eliminate possible illegal export of hazardous wastes.

1987 Accomplishments

In 1987, the Agency obligated a total of \$2,057,600 supported by 32.4 total workyears, all of which was from the Salaries and Expenses appropriation.

The program continued to reinforce the growing deterrent presence it achieved in prior years, as the Court system began to respond with stiff sanctions. Approximately 60 percent of the program's emphasis was on violations of RCRA; the water program followed with about 20 percent of the Agency's investigations, and then, by toxic substances and the air program, each with 10 percent.

Although the number of criminal referrals showed only slight growth, the proportion of cases producing significant indictments increased as did the number of pleas and convictions. This trend is expected to continue in 1988 and beyond. Similarly the length of jail sentences rose and corporations which were fined for criminal activity at one facility took steps to get their other facilities into compliance to avoid the threat of prosecution.

TOXIC SUBSTANCES

ENVIRONMENTAL PROTECTION AGENCY

1989 Budget Estimate

Table of Contents

	<u>Page</u>
<u>TOXIC SUBSTANCES</u>	TS-1
RESEARCH & DEVELOPMENT	
Toxics Substances Research.....	TS-8
Scientific Assessment.....	TS-14
Monitoring Systems and Quality Assurance.....	TS-15
Health Effects.....	TS-16
Environmental Engineering and Technology.....	TS-17
Environmental Processes and Effects.....	TS-19
ABATEMENT & CONTROL	
Toxic Substances Financial Assistance.....	TS-21
Asbestos-in-Schools Loans and Grants.....	TS-23
Asbestos-in-Schools Program Administration.....	TS-24
Asbestos-in-Schools Contractor and Inspector Certification.....	TS-25
Toxic Substances Strategies.....	TS-26
Chemical Testing.....	TS-29
Existing Chemical Review.....	TS-30
New Chemical Review.....	TS-32
OPTS - Title III.....	TS-34
ENFORCEMENT	
Toxic Substances Enforcement.....	TS-36
Toxic Substances Enforcement.....	TS-39
Toxic Substances Enforcement Grants.....	TS-41
OPTS Enforcement - Title III.....	TS-42

TOXIC SUBSTANCES

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988

(DOLLARS IN THOUSANDS)						

APPROPRIATION						

Salaries & Expenses	\$40,254.2	\$42,435.2	\$44,021.8	\$44,021.8	\$45,433.0	\$1,411.2
Abatement Control and Compliance	\$75,186.3	\$25,702.7	\$70,760.0	\$70,760.0	\$34,556.8	-\$36,203.2
Research & Development	\$20,080.2	\$17,958.3	\$15,662.3	\$15,443.9	\$15,017.8	-\$426.1
TOTAL, Toxic Substances	\$135,520.7	\$86,096.2	\$130,444.1	\$130,225.7	\$95,007.6	-\$35,218.1
PERMANENT WORKYEARS	809.3	777.2	820.3	845.6	821.6	-24.0
TOTAL WORKYEARS	816.6	839.6	873.6	873.6	873.6	
OUTLAYS	\$127,369.5	\$119,591.9	\$151,367.1	\$151,113.7	\$131,748.8	-\$19,364.9
AUTHORIZATION LEVELS						
						Authorization for the Toxic Substances Control Act expired September 30, 1983. Reauthorization is pending.

TOXIC SUBSTANCES

OVERVIEW AND STRATEGY

The Toxic Substances Control Act (TSCA), enacted in 1976, provides authority and responsibility to protect human health and the environment from unreasonable risks arising from the manufacture, processing, distribution, use or disposal of chemicals. TSCA provides many effective options for safeguarding health and the environment including banning chemicals, controlling production, and placing conditions on use and disposal. TSCA covers approximately 66,000 chemicals now in commerce and any new chemicals introduced by industry. TSCA influences the evolution of chemical technology by encouraging innovation and introduction of safer substitutes. TSCA also generates data essential for risk-based decisions across the Agency. Highlights of the 1989 program are: (1) implementation of the biotechnology program, (2) an effective new chemical review program, (3) improvements in our PCB disposal program, (4) public availability of the first Superfund Amendments and Reauthorization Act of 1986 (SARA) Section 313 emissions reports, (5) strong enforcement, and (6) research and development.

Biotechnology

The TSCA biotechnology program will proceed from the rulemaking stage to implementation. The first biotechnology notices were received in 1987; however, we expect this program to develop rapidly. The potential for environmental and human risks associated with these products is high. Thus, our reviews will require significant efforts including data development under Section 5(e) in order to balance any potential risks of these substances against their benefits to society.

PCB Disposal

Over the next two years, a significant amount of PCBs currently in use will be discontinued, creating a potential disposal problem. The Agency will use TSCA authorities to address PCB disposal activities during this critical time frame. We are making changes to both our abatement and control, and enforcement programs to incorporate Resource Conservation and Recovery Act (RCRA) requirements. We are putting in place rules to better track the disposal of PCB wastes and to obtain information on companies that handle and store PCB wastes prior to disposal.

SARA Title III

The emissions inventory data collected in 1988 (covering 1987 emissions) will be available to the public and the second cycle of reporting will take place. At least 300,000 reports are expected in 1989. The volume of reports is significantly higher than anticipated, at least at the onset of the program. Our highest priority will be to process these reports into the public data base. To the extent possible we will take steps to ensure that the data is of good quality. We will also work toward helping States develop the capacity to be the first response level to public inquiries.

Toxic Substances Enforcement

The major objective of the Agency's toxic substances enforcement program is to maintain an efficient and effective national compliance monitoring program with appropriate coverage of all enforceable TSCA regulations. The enforcement program depends increasingly upon the assistance of State agencies which conduct compliance monitoring inspections under the terms of cooperative enforcement agreements. The cooperative enforcement agreement program will grow to an anticipated level of 21 participating States by 1989. State programs emphasize compliance monitoring of existing chemical control rules, particularly asbestos and PCBs. Since the States

cannot initiate TSCA enforcement actions, the Agency is responsible for case development and prosecution for all detected violations, whether originating from State- or EPA-conducted inspections.

Of growing concern to both EPA and the public is assuring the proper storage and disposal of PCBs. The enforcement program is placing a growing emphasis on conducting a comprehensive compliance program in this area, as well as more frequent and comprehensive inspections at disposal sites, and will be targeting inspections at brokers, storers and transporters of such materials.

The toxic substances enforcement program supports the enforcement provisions of SARA Title III. Prior to the time that these provisions became fully enforceable, the Agency provided compliance assistance to the regulated community, the States, and local authorities. With all sections of Title III now fully enforceable, EPA has begun an inspection program to ensure that manufacturers comply with Section 313 requirements to submit annual toxic chemical release forms.

Research and Development

The Office of Research and Development (ORD) will continue to support the Office of Toxic Substances (OTS) by performing research in the areas of test method development and validation; biomarkers, dosimetry and extrapolation; exposure monitoring; environmental engineering and technology; special human data needs; structure activity relationships (SARS); ecology (both fate and transport and risk assessment); and biotechnology. In addition, ORD will continue to provide technical support to OTS in exposure assessment, monitoring procedures and risk assessment methodologies for oncogenicity, mutagenicity and reproductive toxicity.

TOXIC SUBSTANCES

	<u>Actual</u> <u>1987</u>	<u>Budget</u> <u>Estimate</u> <u>1988</u>	<u>Current</u> <u>Estimate</u> <u>1988</u>	<u>Request</u> <u>1989</u>	<u>Increase (+)</u> <u>Decrease (-)</u> <u>1989 vs. 1988</u>
<u>PROGRAM ACTIVITIES</u>					
<u>Existing Chemical Review</u>					
Incoming Data Documents (\$4,\$8(e), FYI's Received..	469	475	500	500	--
Incoming Section 8(a)/(d) Reports Received.....	2,589	1,625	1,625	1,875	+250
Section 8 Rules and Section 5(a) SNURs Proposed/Final.	16	13	12	9	-3
Preliminary Risk Assessments	18	15	15	10	-5
Detailed Risk Assessments...	3	2	2	2	--
PCB Disposal Permits Reviewed	20	20	20	20	--
Section 6 Rules: Proposed...	3	0	4	1	-3
Section 6 Rules: Final.....	1	4	4	3	-1
Section 9 Referrals	0	1	1	1	--
Chemical Advisories	1	1	1	1	--
<u>New Chemical Review</u>					
New Chemical Submissions.....	2,291	2,600	2,600	3,000	+400
New Chemical Control Actions Taken	200	170	230	260	+30
Biotechnology Notices Received	7	-	15-20	35-50	+20-30
Biotechnology Control Actions Taken	1	-	2	5	+3
New Chemicals Subject to proposed or Final SNURS....	1	37	35	90	+55
Receipt of Test Data	17	-	13	25	+12
<u>Chemical Testing</u>					
Initial ITC Testing Actions	2	8	3	4	+1
Post-Initial ITC Testing Actions	2	5	3	4	+1
Promulgated ITC Actions....	14	6	12	8	-4
Non-ITC Testing Actions....	4	6	5	5	--
Test Guidelines/GLPs Published	6	2	2	2	--
<u>Title III</u>					
Toxic Release Inventory Forms Received.....	-	50,000	160-300K	300K+	--

	<u>Actual</u> <u>1987</u>	<u>Budget</u> <u>Estimate</u> <u>1988</u>	<u>Current</u> <u>Estimate</u> <u>1988</u>	<u>Request</u> <u>1989</u>	<u>Increase (+)</u> <u>Decrease (-)</u> <u>1989 vs. 1988</u>
<u>Enforcement Actions</u>					
Laboratory Inspections.....	13	70	45	55	+10
Test Study Audits.....	21	190	95	190	+95
Inspections, Sec. 5.....	367	455	245	245	--
Inspections, Sec. 6					
PCB Inspections*.....	2,615	2,220	2,400	2,150	-250
Asbestos Inspections**.....	2,771	2,738	2,738	2,738	--
Inspections, Sec. 8.....	447	415	300	300	--
Inspections, Sec. 13.....	864	700	700	700	--
Notices of Violation.....	2,276	1,705	2,200	2,200	--
Administrative Orders.....	1,051	900	1,000	1,000	--
Civil Litigation.....	6	6	6	6	--
Criminal Litigation.....	0	2	2	2	--

* Includes Federal and State inspections

** Includes Federal, State and contractor inspections

ENVIRONMENTAL PROTECTION AGENCY

1989 Budget Estimate

Table of Contents

	<u>Page</u>
<u>TOXIC SUBSTANCES</u>	
RESEARCH & DEVELOPMENT	
Toxics Substances Research.....	TS-8
Scientific Assessment.....	TS-14
Monitoring Systems and Quality Assurance.....	TS-15
Health Effects.....	TS-16
Environmental Engineering and Technology.....	TS-17
Environmental Processes and Effects.....	TS-19

TOXIC SUBSTANCES
Toxic Substances Research

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988
----- (DOLLARS IN THOUSANDS) -----						
PROGRAM						

Scientific Assessment - Toxic Substances						
Salaries & Expenses	\$218.5	\$225.0	\$214.6	\$214.6	\$219.3	\$4.7
Research & Development	\$196.4	\$208.0	\$208.0	\$208.0	\$208.0	
TOTAL	\$414.9	\$433.0	\$422.6	\$422.6	\$427.3	\$4.7
Monitoring Systems & Quality Assurance - Toxic Substances						
Salaries & Expenses	\$1,387.0	\$1,564.9	\$1,496.8	\$1,496.8	\$1,529.6	\$32.8
Research & Development	\$3,883.3	\$3,993.0	\$3,468.0	\$3,422.6	\$3,423.6	\$1.0
TOTAL	\$5,270.3	\$5,557.9	\$4,964.8	\$4,919.4	\$4,953.2	\$33.8
Health Effects - Toxic Substances						
Salaries & Expenses	\$3,549.4	\$3,658.1	\$3,527.6	\$3,527.6	\$3,604.9	\$77.3
Research & Development	\$7,930.9	\$7,226.9	\$5,608.9	\$5,520.1	\$5,510.3	-\$9.8
TOTAL	\$11,480.3	\$10,885.0	\$9,136.5	\$9,047.7	\$9,115.2	\$67.5
Environmental Engineering & Technology - Toxic Substances						
Salaries & Expenses	\$637.7	\$666.8	\$608.9	\$608.9	\$622.2	\$13.3
Research & Development	\$2,524.0	\$2,036.6	\$1,740.6	\$1,715.0	\$1,715.0	
TOTAL	\$3,161.7	\$2,703.4	\$2,349.5	\$2,323.9	\$2,337.2	\$13.3
Environmental Processes & Effects - Toxic Substances						
Salaries & Expenses	\$5,150.9	\$5,712.4	\$5,495.1	\$5,495.1	\$5,615.4	\$120.3
Research & Development	\$5,545.6	\$4,493.8	\$4,636.8	\$4,578.2	\$4,160.9	-\$417.3
TOTAL	\$10,696.5	\$10,206.2	\$10,131.9	\$10,073.3	\$9,776.3	-\$297.0

TOXIC SUBSTANCES

Toxic Substances Research

Principal Outputs by Objective

Objective 1: Develop and Validate Test Methods in Support of TSCA Studies

- 1989: o Report on the development of test methods with benthic organisms to define the bioavailability of sediment-bound toxicants (Environmental Processes)
- 1988: o Evaluation of the sensitivity of a screening procedure with specific reproductive toxins (Health)
- 1987: o Report on application of analytical methods for detecting organic compounds in biological tissues (Monitoring)

Objective 2: Perform Research on Biological Markers, Dosimetry and Extrapolation

- 1989: o Evaluation of potential use for biological markers in human exposure monitoring studies (Monitoring)
- 1988: o Structure activity correlation of the reproductive effects of diazo dyes administered in utero (Health)
- 1987: o Comparison of tumorigenicity of 5 mineral fibers by means of intrapleural inoculation (Health)

Objective 3: Provide Information on Special Human Data Needs

- 1989: o Report on the effects of asbestos exposure on school teachers (Health)
- 1987: o Report on the feasibility of using monitoring or screening methods to assess exposure/effect relative to two organ systems (Health)

Objective 4: Perform Ecological Research Including Transport, Fate and Field Validation

- 1989: o Report on comparison of laboratory microcosms and natural pond responses to Dursban (Environmental Processes)
- 1987: o Report on the detection of genetically engineered microorganisms in complex environments by RNA fingerprinting and sequencing (Env. Processes)

Objective 5: Perform Engineering Research in Support of TSCA

- 1989: o Report on advanced development of methodologies for estimating protective clothing performance for the PMN review process (Engineering)
- 1988: o Study of workplace exposure in the polymer processing industry (Engineering)
- 1987: o Report on methodologies for estimating protective clothing performance. (Engineering)

Objective 6: Perform Exposure Monitoring Research

- 1989: o Interim report on pollutant sources and human exposure to toxic pollutants using Total Exposure Assessment Methodology (TEAM) (Monitoring)
- 1988: o Interim report on pollutant sources and human activity patterns associated with exposure to toxic pollutants using TEAM data (Monitoring)
- 1987: o Report on development and validation procedures for total exposure multimedia models (Monitoring)

Objective 7: Develop Structure Activity Relationships Data

- 1989: o Report on SAR methods for predicting metabolism from chemical structure (Environmental Processes)
- 1988: o Comparison of the CHO and mouse lymphoma assay for analyzing structurally similar compounds (Health)
- 1987: o Journal article on the genotoxicity of acrylates in cultured mammalian cells (Health)

Objective 8: Perform Research on Biotechnology and Microbial and Biochemical Pest Control Agents

- 1989: o Journal article on fate and survival of altered microbes and genetic material in the terrestrial environment (Environmental Processes)
 - o Evaluation of sampling procedures for released microbes (Monitoring)
- 1988: o Guidelines for monitoring releases of microbes (Monitoring)
- 1987: o Report on studies of DNA recombination to assess the potential for genetic exchange (Health)

Objective 9: Perform Studies on Ecotoxicity and Develop Environmental Risk Assessment Protocols

- 1989: o Update of stratified lake transport model for risk assessment (Environmental Processes)
- 1988: o Report documenting the coupled plant-soil model and software for predicting the fate of xenobiotic chemicals in terrestrial plants (Environmental Processes)
- 1987: o Draft environmental risk assessment guidelines (Scientific Assessment)

Objective 10: Provide Support Services for TSCA Studies

- 1989: o Guidelines for use of human exposure model in regulatory review and report on production of reference materials for quality control (Monitoring)
- 1988: o Annual report on production of quality control materials and asbestos for routine monitoring procedures (Monitoring)
- 1987: o Annual report on asbestos audit program (Monitoring)

TOXIC SUBSTANCES

Toxic Substances Research

Budget Request

The Agency requests a total of \$26,609,200 supported by 188.3 total workyears for 1989, a decrease of \$177,700 and no change in total workyears from 1988. Of the request, \$11,591,400 will be for the Salaries and Expenses appropriation and \$15,017,800 will be for the Research and Development appropriation, an increase of \$248,400 and a decrease of \$426,100, respectively.

Program Description

The Toxic Substances research program supports the Office of Toxic Substances (OTS) by providing the scientific tools and supporting information to implement the Toxic Substances Control Act (TSCA).

Objective 1. Develop and Validate Test Methods for TSCA Studies. This research develops and validates health and environmental testing protocols to be incorporated into TSCA Section 4 guidelines, risk assessment methods, and analytical methods for identifying and quantifying environmental pollutants.

Objective 2. Perform Health Research on Biological Markers, Dosimetry and Extrapolation. This effort develops methods for extrapolating from high to low doses between mammalian species to enhance risk assessment predictability and capability. Research also focuses on developing biomonitoring techniques and applying biochemical indicators of exposure and effects to the study of populations exposed to toxicants.

Objective 3. Provide Information on Special Human Data Needs. This activity focuses on investigations of human populations exposed to environmental pollutants. This research will help determine whether biological indicators of dose and/or effects are related to environmental levels of exposure and if they are correlated with adverse effects measured by traditional methods. This research provides an important component to the Agency's overall ability to accurately estimate risks from exposure to chemicals and make regulatory decisions under TSCA.

Objective 4. Perform Ecological Research Including Transport, Fate, and Field Validation. This research focuses on developing and conducting exposure and hazard assessments of chemicals in water, air, and multimedia environments. This work is conducted in response to the TSCA requirement that the Agency take into account ecological risks when making regulatory decisions. Work focuses on inclusion of identified transport and transformation processes, pathways of exposure, population characteristics, environmental features and hazard assessment techniques.

Objective 5. Perform Engineering Research in Support of TSCA. This research focuses on the development of models to predict the release of and exposure to new and existing chemicals. The program addresses those classes of chemicals for which the Agency does not have adequate information on the degree to which existing control systems limit their release, resulting in more effective Pre-Manufacture Notification (PMN) decisions.

Objective 6. Perform Exposure Monitoring Research. This research develops methods and evaluates data bases and statistical tools to improve exposure monitoring. Multimedia monitoring methods and data analysis techniques are designed and tested to characterize human exposure to chemicals of concerns.

Objective 7. Develop Structure Activity Relationships Data. These efforts develop predictive methods (structure activity relationships) to provide a tool

for determining whether new chemicals pose unreasonable risk or require further testing. Structure activity relationships data are important for reviewing and screening PMN chemicals under Section 5 of TSCA. The findings and techniques established by this research will be used to select appropriate toxicity tests, to document test results, to develop fate and effects data bases, and to provide the modeling means to predict toxicity.

Objective 8. Perform Research on Biotechnology and Microbial and Biochemical Pest Control Agents. Research in this area develops methods to assess the potential health and environmental hazards of biotechnology products. Methods are also being developed to monitor, contain and destroy genetically engineered organisms from releases and manufacturing processes.

Objective 9. Perform Studies on Ecotoxicity and Develop Environmental Risk Assessment Protocols. This effort focuses on development of methodologies and models to determine risks posed to ecosystems by exposure to environmental pollutants. The program is currently developing environmental risk assessment protocols for both aquatic and terrestrial systems which will be used in evaluating risks from both new and existing chemicals.

Objective 10. Provide Support Services for TSCA Studies. This research provides support for risk and exposure assessments, quality assurance, dissemination of reference standards and quality assurance reagents as well as expert consultation on problems associated with the evaluation of PMN chemicals and other toxic substances.

SCIENTIFIC ASSESSMENT

1989 Program Request

The Agency requests a total of \$427,300 supported by 4.0 total workyears for this program, of which \$219,300 will be for Salaries and Expenses appropriation and \$208,000 will be for the Research and Development appropriation. This represents an increase of \$4,700 in the Salaries and Expenses appropriation and no change in the Research and Development appropriation or total workyears. The increase in the Salaries and Expenses appropriation reflects a general enhancement of inhouse support for this program.

Develop and Validate Test Methods for TSCA Studies. This program will develop risk and exposure assessment methods in support of TSCA. Research efforts will be targeted on data inadequacies identified in the course of scientific assessments of chemicals during regulatory analyses. This research will provide validated methods and protocols for industry to use in performing tests required under TSCA Section 4.

Perform Studies on Ecotoxicity and Develop Environmental Risk Assessment Protocols. Scientific support will be provided for the development of environmental risk assessment protocols for both aquatic and terrestrial ecosystems.

Provide Support Services for TSCA Activities. Scientific Assessment support will be provided for preparation, consultation and review of OTS generated assessments of cancer, mutagenicity, adverse reproductive/developmental effects, and exposure. These activities will support decision making under TSCA (existing chemicals program, PMN review, and test guidelines development).

1988 Program

In 1988, the Agency is allocating a total of \$422,600 supported by 4.0 total workyears for this program, of which \$214,600 is from the Salaries and Expenses appropriation and \$208,000 is from the Research and Development appropriation.

The 1988 program is providing support for preparation and review of risk and exposure assessments, development of assessment methods as well as efforts to develop protocols for environmental risk assessments. Particular emphasis is being given to the development of risk assessment procedures for non-cancer endpoints.

1987 Accomplishments

In 1987, the Agency obligated a total of \$414,900 supported by 4.0 total workyears for this program, of which \$218,500 was from the Salaries and Expenses appropriation and \$196,400 was from the Research and Development appropriation. In 1987, issue papers were developed on aspects of the dioxin data base and two petitions requesting deletion from the list of chemicals subject to Section 313 of SARA Title III were reviewed.

MONITORING SYSTEMS AND QUALITY ASSURANCE

1989 Program Request

The Agency requests a total of \$4,953,200 supported by 25.2 total workyears for this program, of which \$1,529,600 will be for the Salaries and Expenses appropriation and \$3,423,600 will be for the Research and Development appropriation. This represents increases of \$32,800 in the Salaries and Expenses appropriation and \$1,000 in the Research and Development appropriation and no change in total workyears. The increase in the Salaries and Expenses appropriation reflects a general enhancement of inhouse support for the monitoring program.

Develop and Validate Test Methods for TSCA Studies. Research will develop and evaluate biological and chemical techniques to identify and quantify pollutants in both humans and the environment. This information provides the exposure component for conducting risk assessments. Research will be conducted to develop methods, including screening procedures, for identifying chemical compounds. Increased emphasis will be placed on developing improved sampling and analysis procedures to measure asbestos in indoor air during and after abatement actions.

Perform Health Research on Biological Markers, Dosimetry and Extrapolation. Research will evaluate the use of biomarkers as indicators of human exposure to complex organic compounds and as a means of integrating exposures from multiple routes. The use of biomarkers will provide a quick, accurate, and cost-effective means to detect the presence of toxicants in body tissue which cannot currently be done using conventional monitoring methods.

Perform Exposure Monitoring Research. Research in this area will develop monitoring systems and models to estimate human exposure to pollutants via multiple pathways. Statistical tools and data analysis techniques will be used to produce predictive techniques and categorize human activity patterns. This research will improve exposure assessment capabilities for regulatory efforts.

Perform Research on Biotechnology and Microbial and Biochemical Pest Control Agents. Monitoring procedures for genetically engineered microorganisms (GEMs) will be standardized to produce guidelines for monitoring routine releases of GEMs into the environment. Methods to sample GEMs released into the environment will also be evaluated.

Provide Support Services for TSCA Activities. Monitoring and quality assurance support will continue for the production of reference standards and quality assurance reagents. Quality assurance guidelines will be produced for human exposure models.

1988 Program

In 1988, the Agency is allocating a total of \$4,919,400 supported by 25.2 total workyears for this program, of which \$1,496,800 is from the Salaries and Expenses appropriation and \$3,422,600 is from the Research and Development appropriation. The 1988 program is continuing support for exposure monitoring, developing analytical methods and providing quality assurance support and standard reference materials.

1987 Accomplishments

In 1987, the Agency obligated a total of \$5,270,300 supported by 24.5 total workyears for this program, of which \$1,387,000 was from the Salaries and Expenses appropriation and \$3,883,300 was from the Research and Development appropriation. In 1987, a site characterization data base was developed for geographic information systems research. Biological monitoring methods and biomarkers were evaluated for their possible use in human monitoring studies. Quality assurance materials for asbestos and organic chemicals were produced.

HEALTH EFFECTS

1989 Program Request

The Agency requests a total of \$9,115,200 supported by 60.6 total workyears for this program, of which \$3,604,900 will be for the Salaries and Expenses appropriation and \$5,510,300 will be for the Research and Development appropriation. This represents an increase of \$77,300 in the Salaries and Expenses appropriation, no change in total workyears, and a decrease of \$9,800 in the Research and Development appropriation. The increase in the Salaries and Expenses appropriation and the decrease in the Research and Development appropriation reflect a shift from extramural research to research conducted inhouse.

Develop and Validate Test Methods for TSCA Studies. Health research will focus on developing methodologies and bioassays to detect, characterize and predict non-cancer endpoints, with particular emphasis on neurotoxicity and immunotoxicity. These methodologies are used to evaluate industry submitted data on environmental or health effects of new chemicals to ensure that the data is accurate, reproducible and consistent. The Agency will develop alternative test methods that will decrease or obviate the need to use whole animals.

Perform Health Research on Biological Markers, Dosimetry and Extrapolation. This research will provide improved methods for extrapolation from animal data to estimations of human adverse health effects such as neurobehavioral, pulmonary, hepatic and reproductive dysfunction as well as genetic effects. This research provides an important component to the risk assessment process. Increased efforts will be placed on target organ dosimetry to determine if the equivalent doses reaching the target site produce equivalent effects.

Provide Information On Special Human Data Needs. Research will investigate population groups exposed to environmental contaminants which are suspect toxicants for particular organ systems to determine if biological indicators of dose and/or effects are related to environmental levels of exposure. This data is used to verify results using extrapolation methods and other traditional methods used to estimate exposure. Results will be compared to effects measured by traditional methods.

Develop Structure Activity Relationships Data. This research will focus on developing methods based on molecular structure to predict genetic, carcinogenic, and other toxic activities using pattern recognition, statistical and thermodynamic techniques. Research results provide a rapid method for predicting effects of new chemicals based on known data for chemicals of similar structure.

Perform Research on Biotechnology and Microbial and Biochemical Pest Control Agents. Potential dispersal capability of bioengineered organisms will be studied using a variety of test systems. Potential health hazards of genetically engineered organisms will be studied by comparing the effect of these organisms and naturally occurring strains in mammalian digestive systems. This research supports the PMN review process for biotechnology products.

1988 Program

In 1988, the Agency is allocating a total of \$9,047,700 supported by 60.6 total workyears for this program, of which \$3,527,600 is from the Salaries and Expenses appropriation and \$5,520,100 is from the Research and Development appropriation. The 1988 program is developing test methods in support of TSCA Section 4 test guidelines, conducting research on extrapolation, biological markers, and structure activity relationships, and assessing potential health effects from genetically engineered organisms.

1987 Accomplishments

In 1987, the Agency obligated a total of \$11,480,300 supported by 64.6 total workyears for this program, of which \$3,549,400 was from the Salaries and Expenses appropriation and \$7,930,900 was from the Research and Development appropriation. In 1987, neurochemical, behavioral and physiological methods for detecting neurotoxicity were provided as were methods for predicting developmental and reproductive toxicity and germ cell mutation.

ENVIRONMENTAL ENGINEERING AND TECHNOLOGY

1989 Program Request

The Agency requests a total of \$2,337,200 supported by 11.0 total workyears for this program, of which \$622,200 will be for the Salaries and Expenses appropriation and \$1,715,000 will be for the Research and Development appropriation. This represents an increase of \$13,300 in the Salaries and Expenses appropriation and no change in the Research and Development appropriation or total workyears. The increase in the Salaries and Expenses appropriation reflects a general enhancement of inhouse support for the engineering program.

Perform Engineering Research in Support of TSCA. Engineering techniques to assess the potential for toxic releases and exposures from processing and manufacturing new chemicals will be developed. To support the TSCA premanufacturing review process, research will assess unit operations such as sampling and size reduction for determining the treatability of toxic substances in waste streams. Permeation of liquid chemicals through polymer gloves will be evaluated. Asbestos release and control technology research will be conducted to update our current state of knowledge in order to improve our guidance to contractors that are removing asbestos from schools.

Perform Research on Biotechnology and Microbial and Biochemical Pest Control Agents. Research will be conducted on the industrial-process release model and on evaluation of worker personal-protective equipment. This work supports the TSCA requirement to evaluate biotechnology products for workplace exposure during manufacturing and processing. Work on air-emissions contaminants will be completed. This work will contribute to the current data base on the release of genetically engineered organisms in support of the TSCA PMN review process.

1988 Program

In 1988, the Agency is allocating a total of \$2,323,900 supported by 11.0 total workyears for this program, of which \$608,900 is from the Salaries and Expenses appropriation and \$1,715,000 is from the Research and Development appropriation. The 1988 program is developing information on release and control measures for new and existing chemicals, particularly genetically engineered organisms.

1987 Accomplishments

In 1987, the Agency obligated a total of \$3,161,700 supported by 11.1 total workyears for this program, of which \$637,700 was from the Salaries and Expenses appropriation and \$2,524,000 was from the Research and Development appropriation. In 1987, pilot scale evaluations were completed which determined the fate of 18 water soluble azo dyes in the activated sludge process.

ENVIRONMENTAL PROCESSES AND EFFECTS

1989 Program Request

The Agency requests a total of \$9,776,300 supported by 87.5 total workyears for this program, of which \$5,615,400 will be for the Salaries and Expenses appropriation and \$4,160,900 will be for the Research and Development appropriation. This represents an increase of \$120,300 and a decrease of \$417,300, respectively, and no change in total workyears. The increase in the Salaries and Expenses appropriation reflects a general enhancement of inhouse support for this program. The decrease in the Research and Development appropriation reflects a reduction in funding for the purchase of equipment using Research and Development funds as authorized by Congress in the Agency's 1988 Appropriation Bill and the expected completion of several test method protocols in 1988. These funds have been re-directed to other high priority research activities in 1989.

Develop and Validate Test Methods for TSCA Studies. This research will continue to develop and evaluate test methods for defining toxicity of chemicals to aquatic (freshwater and marine), avian, and terrestrial species. Methods will be developed, validated, and evaluated for environmental toxicity testing. This research improves the Agency's ability to relate single species and microcosm data to actual ecosystem effects and to relate observed effects on one species to probable effects on other species.

Perform Ecological Research Including Transport, Fate and Field Validation. This research effort will provide support for the TSCA PMN process and Section 4 test rule development through studies of toxicity, and fate and transport of chemicals in aquatic, terrestrial and air environments. Methods will be developed for determining exposure, including comparative evaluation of models, preparing references on process descriptions and referring rate constants for use in models.

Develop Structure Activity Relationships Data. This research will develop and evaluate structure activity relationships as predictors of chemicals fate and biological effects. Results of this research will provide a quick method for predicting effects of new chemicals submitted under TSCA Section 5 by using existing data for chemicals of similar structure.

Perform Research on Biotechnology and Microbial and Biochemical Pest Control Agents. This research will develop methods, analytical techniques and testing protocols for estimating survival, fate and effects of genetically altered microbes and the stability within their genetic pool. Research will also determine the probable hazards associated with modified microbes used in testing or proposed for industrial application. This information will aid OTS in reviewing PMN applications

for products of biotechnology. Adequate methodologies for evaluating such organisms do not currently exist.

Perform Studies on Ecotoxicity and Develop Environmental Risk Assessment Protocols. This research will focus on the development of environmental risk assessment methodologies for toxics by mathematically integrating exposure and hazardous assessment data to determine the probability of risk to important populations. Aquatic and terrestrial exposure assessment data for risk and hazard assessment models will be field tested to verify their accuracy in determining ecosystem stability and recovery potential. Availability of environmental risk methods will substantially improve the Agency's ability to regulate chemicals under Sections 4 and 5 of TSCA.

Provide Support Services for TSCA Activities. Environmental process efforts will support OIS on complex problems associated with the evaluations of PMN chemicals, including products of biotechnology.

1988 Program

In 1988, the Agency is allocating a total of \$10,073,300 supported by 87.5 total workyears for this program, of which \$5,495,100 is from the Salaries and Expenses appropriation and \$4,578,200 is from the Research and Development appropriation. This program is developing test methods in support of TSCA Section 4 guidelines, conducting research on transport, fate and field validation, and developing structure-activity relationships data. Work is also being performed on the development of environmental risk assessment methods, as well as research to determine the environmental effects of genetically engineered organisms.

1987 Accomplishments

In 1987, the Agency obligated a total of \$10,696,500 supported by 88.0 total workyears for this program, of which \$5,150,900 was from the Salaries and Expenses appropriation and \$5,545,600 was from the Research and Development appropriation. In 1987, forty research reports supporting TSCA activities and decisions were released on topics including methods and hazard assessment, transport, fate and exposure assessment, structure activity relationships, system level effects, comparative toxicology, biotechnology and ecological risk assessments.

ENVIRONMENTAL PROTECTION AGENCY

1989 Budget Estimate

Table of Contents

	<u>Page</u>
<u>TOXIC SUBSTANCES</u>	
ABATEMENT & CONTROL	
Toxic Substances Financial Assistance.....	TS-21
Asbestos-in-Schools Loans and Grants.....	TS-23
Asbestos-in-Schools Program Administration.....	TS-24
Asbestos-in-Schools Contractor and Inspector Certification.....	TS-25
Toxic Substances Strategies.....	TS-26
Chemical Testing.....	TS-29
Existing Chemical Review.....	TS-30
New Chemical Review.....	TS-32
OPTS - Title III.....	TS-34

TOXIC SUBSTANCES
Toxic Substances - Financial Assistance

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988
----- (DOLLARS IN THOUSANDS) -----						
PROGRAM -----						
Asbestos-In-Schools - Loans And Grants						
Abatement Control and Compliance	\$41,896.2		\$37,600.0	\$37,600.0		-\$37,600.0
TOTAL	\$41,896.2		\$37,600.0	\$37,600.0		-\$37,600.0
Asbestos-In-Schools - Program Administration						
Salaries & Expenses	\$495.8	\$543.5	\$538.9	\$538.9	\$559.2	\$20.3
Abatement Control and Compliance	\$7,931.4	\$2,020.0	\$3,623.2	\$3,623.2	\$2,020.0	-\$1,603.2
TOTAL	\$8,427.2	\$2,563.5	\$4,162.1	\$4,162.1	\$2,579.2	-\$1,582.9
Asbestos-In-Schools - Contractor And Certification Program						
Abatement Control and Compliance	\$595.4	\$800.0	\$800.0	\$800.0	\$800.0	
TOTAL	\$595.4	\$800.0	\$800.0	\$800.0	\$800.0	
TOTAL:						
Salaries & Expenses	\$495.8	\$543.5	\$538.9	\$538.9	\$559.2	\$20.3
Abatement Control and Compliance	\$50,423.0	\$2,820.0	\$42,023.2	\$42,023.2	\$2,820.0	-\$39,203.2
Toxic Substances - Financial Assistance	TOTAL \$50,918.8	\$3,363.5	\$42,562.1	\$42,562.1	\$3,379.2	-\$39,182.9

TOXIC SUBSTANCES
Toxic Substances - Financial Assistance

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988
----- (DOLLARS IN THOUSANDS) -----						
PERMANENT WORKYEARS -----						
Asbestos-In-Schools - Program Administration	10.2	11.0	11.0	10.9	11.0	.1
TOTAL PERMANENT WORKYEARS	10.2	11.0	11.0	10.9	11.0	.1
TOTAL WORKYEARS -----						
Asbestos-In-Schools - Program Administration	10.6	11.0	11.0	10.9	11.0	.1
TOTAL WORKYEARS	10.6	11.0	11.0	10.9	11.0	.1

TOXIC SUBSTANCES

Toxic Substances Financial Assistance

Budget Request

The Agency requests a total of \$3,379,200 supported by 11.0 total workyears in 1989, a decrease of \$39,182,900 and an increase of 0.1 total workyears from 1988. Of the total requested, \$559,200 will be for the Salaries and Expenses appropriation and \$2,820,000 will be for the Abatement, Control and Compliance appropriation. This is an increase of \$20,300 in Salaries and Expenses and a decrease of \$39,203,200 in the Abatement, Control and Compliance appropriation.

Program Description

The major programs under this subactivity include:

Asbestos-in-Schools Loans and Grants -- This program provides financial assistance to public and private schools with demonstrated financial need and severe asbestos hazards for purposes of undertaking asbestos abatement projects. Funding for this program is authorized under the Asbestos School Hazard Abatement Act (ASHAA) of 1984. The program will also provide grants to the States to assist in Asbestos Hazard Emergency Response Act (AHERA) responsibilities.

Asbestos-in-Schools Program Administration -- This program administers the financial assistance provided through grant or loan awards as authorized under ASHAA. In addition, this program also provides technical assistance to individuals and organizations interested in addressing asbestos hazards under AHERA. Activities include providing technical guidance and advice (primarily through EPA regional offices); working with States to develop State certification programs which meet the model program requirements under AHERA for asbestos abatement contractors, inspectors and management planners; and updating technical information and model planning materials.

Asbestos-in-Schools Contractor and Inspector Certification -- This program provides one-time grants to States to pass enabling legislation and/or establish asbestos abatement contractor, asbestos inspector and management planner certification/accreditation and training programs.

ASBESTOS-IN-SCHOOLS LOANS AND GRANTS

1989 Program Request

No funds are requested for this program in 1989. Previous Federal funding has already greatly reduced the problem. In addition, many States have initiated active asbestos management or contractor accreditation programs for schools and should be able to continue these activities.

1988 Program

In 1988, the Agency is allocating \$37,600,000 for this program, all of which is from the Abatement, Control and Compliance appropriation. In 1988, the Agency expects to provide funds for previously identified high priority asbestos abatement projects in schools. Up to \$15,000,000 will be used for grants to States to assist schools in the implementation of new AHERA requirements which become effective in 1988 and continue into 1989.

1987 Accomplishments

In 1987, the Agency obligated a total of \$41,896,200 for this program, all of which was from the Abatement, Control and Compliance appropriation.

The Agency issued funds to 168 public school districts or private schools for 729 asbestos abatement projects in 422 schools. These projects should be completed by 1989. In total, \$134,200,000 has been provided since the summer 1985 to fund 1,567 projects in 1,057 needy schools. These EPA-funded projects will eliminate approximately 11.2 million exposure hours to students and employees each week.

ASBESTOS-IN-SCHOOLS PROGRAM ADMINISTRATION

1989 Program Request

The Agency requests a total of \$2,579,200 supported by 11.0 total workyears for this program, of which \$559,200 will be for the Salaries and Expenses appropriation and \$2,020,000 will be for the Abatement, Control and Compliance appropriation. This represents an increase of \$20,300 for the Salaries and Expenses appropriation, a decrease of \$1,603,200 from the Abatement, Control and Compliance appropriation, and an increase of 0.1 total workyears from 1988. The increases in Salaries and Expenses and total workyears reflect a minor readjustment of resources within the overall Toxic Substances program. The decrease in Abatement, Control and Compliance reflects a reduced need for activities associated with the Asbestos School Hazard Abatement Act (ASHAA).

This program will continue to focus on Asbestos Hazard Emergency Response Act (AHERA) implementation in 1989. Emphasis will be on providing technical assistance and guidance to States and LEAs on implementation of management plans which are required to be implemented by July 1989. Course approvals for accreditation of asbestos abatement inspectors, contractors and others will also continue. Technical assistance grants will provide for American Association of Retired Persons (AARP) personnel to respond to regional requests for help; to conduct abatement inspections of ASHAA projects; offer counseling for unfunded ASHAA projects; and to help non-school building owners evaluate asbestos containing materials (ACM) in their facilities and establish abatement priorities.

1988 Program

In 1988, the Agency is allocating a total of \$4,162,100 supported by 10.9 total workyears for this program, of which \$538,900 is from the Salaries and Expenses appropriation and \$3,623,200 is from the Abatement, Control and Compliance appropriation.

The Agency is implementing a wide variety of programs to: (1) assist States and schools in complying with the new regulatory standards on asbestos inspection, control, and abatement, (2) help States establish accreditation programs which govern asbestos inspections, management planning, and response actions, and (3) provide compliance assistance to enable schools to develop appropriate, responsible management plans under AHERA. Further, the Agency is continuing its general technical assistance program for schools and other building owners which includes information and training centers, new guidance and model course development, and technical assistance and outreach at the Regional level. A rule is also being proposed to regulate transport and disposal of asbestos for schools under AHERA. The program is continuing to examine the issue of asbestos in public buildings.

1987 Accomplishments

In 1987, the Agency obligated a total of \$8,427,200 supported by 10.6 total workyears for this program, of which \$495,800 was from the Salaries and Expenses appropriation and \$7,931,400 was from the Abatement, Control and Compliance appropriation.

The Agency provided a wide variety of technical assistance services and new guidance materials, primarily to schools to promote effective remedial actions for asbestos and to strengthen education and technical assistance programs at the State and local levels. EPA published final rules to implement the AHERA legislation in October 1987, and developed a model accreditation program and courses as a guide to the States for people who inspect for asbestos, develop management plans, and conduct abatement work.

Under ASHAA, EPA administered the Loan and Grant program including the monitoring of existing awardees and the close-out of completed abatement projects. Eight information and training centers or satellites were funded to provide information concerning the identification and abatement of asbestos hazards and to train contractors and supervisors in proper abatement techniques. In addition, an efficacy study on asbestos removal was conducted, the usefulness of contractor training in ASHAA abatements was examined, and the issue of asbestos in public buildings was examined through a case study and panel reviews.

ASBESTOS-IN-SCHOOLS CONTRACTOR AND INSPECTOR CERTIFICATION

1989 Program Request

The Agency requests a total of \$800,000 for this program, all of which will be for the Abatement, Control and Compliance appropriation. This represents no change from 1988.

In 1989 funds will be used for one-time grants to States for asbestos inspector and management planner certification and training programs. The grants will continue to help States pass legislation and establish programs under AHERA. Eleven additional States will receive grants to bring the proficiency of the State inspector and management planner program up to par with the State abatement contractor program.

1988 Program

The Agency is allocating a total of \$800,000 for this program, all of which is from the Abatement, Control and Compliance appropriation. These funds will be used for grants to States for inspector certification and training programs which are based on accreditation plans at least as stringent as the EPA model plan published in April 1987.

1987 Accomplishments

In 1987, the Agency obligated a total of \$595,400 for this program, all of which was from the Abatement, Control and Compliance appropriation.

Grants were targeted for five States in 1987 for inspector and management planner certification and training programs. Six additional States were awarded grants for development of abatement contractor training and certification programs. In 1987, 25 States had active asbestos abatement certification and training programs. Twelve States were identified for awards to assist Local Education Agencies (LEAs) in conducting inspections for asbestos-containing materials under AHERA.

TOXIC SUBSTANCES
Toxic Substances Strategies

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988
----- (DOLLARS IN THOUSANDS) -----						
PROGRAM -----						
Chemical Testing						
Salaries & Expenses	\$4,129.9	\$4,302.1	\$4,304.4	\$4,304.4	\$4,221.7	-\$82.7
Abatement Control and Compliance	\$3,971.0	\$3,725.3	\$3,725.3	\$3,725.3	\$3,725.3	
TOTAL	\$8,100.9	\$8,027.4	\$8,029.7	\$8,029.7	\$7,947.0	-\$82.7
Existing Chemical Review						
Salaries & Expenses	\$6,256.3	\$5,741.3	\$5,491.4	\$5,491.4	\$5,317.6	-\$173.8
Abatement Control and Compliance	\$8,107.6	\$6,104.8	\$6,104.8	\$5,904.8	\$5,904.8	
TOTAL	\$14,363.9	\$11,846.1	\$11,596.2	\$11,396.2	\$11,222.4	-\$173.8
New Chemical Review						
Salaries & Expenses	\$11,668.9	\$12,323.2	\$11,987.5	\$11,987.5	\$12,769.4	\$781.9
Abatement Control and Compliance	\$8,610.5	\$8,837.1	\$8,837.1	\$8,837.1	\$8,837.1	
TOTAL	\$20,279.4	\$21,160.3	\$20,824.6	\$20,824.6	\$21,606.5	\$781.9
OPTS - TITLE III						
Salaries & Expenses			\$2,142.3	\$2,142.3	\$2,442.8	\$300.5
Abatement Control and Compliance			\$5,854.1	\$6,054.1	\$7,554.1	\$1,500.0
TOTAL			\$7,996.4	\$8,196.4	\$9,996.9	\$1,800.5
TOTAL:						
Salaries & Expenses	\$22,055.1	\$22,366.6	\$23,925.6	\$23,925.6	\$24,751.5	\$825.9
Abatement Control and Compliance	\$20,689.1	\$18,667.2	\$24,521.3	\$24,521.3	\$26,021.3	\$1,500.0
Toxic Substances Strategies	TOTAL	\$42,744.2	\$41,033.8	\$48,446.9	\$50,772.8	\$2,325.9

TOXIC SUBSTANCES
Toxic Substances Strategies

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988
----- (DOLLARS IN THOUSANDS) -----						
PERMANENT WORKYEARS -----						
Chemical Testing	76.5	84.0	84.0	83.0	79.0	-4.0
Existing Chemical Review	107.8	123.6	123.6	117.1	110.0	-7.1
New Chemical Review	243.7	247.6	247.6	244.5	252.6	8.1
OPTS - TITLE III			34.5	33.9	37.4	3.5
TOTAL PERMANENT WORKYEARS	428.0	455.2	489.7	478.5	479.0	.5
TOTAL WORKYEARS -----						
Chemical Testing	78.5	84.0	84.0	83.0	79.0	-4.0
Existing Chemical Review	112.5	123.6	123.6	117.1	110.0	-7.1
New Chemical Review	255.9	247.6	247.6	244.5	252.6	8.1
OPTS - TITLE III			34.5	34.5	37.4	2.9
TOTAL WORKYEARS	446.9	455.2	489.7	479.1	479.0	-.1

TS-27

TOXIC SUBSTANCES

Toxic Substances Strategies

Budget Request

The Agency requests a total of \$50,772,800 supported by 479.0 total workyears for 1989, an increase of \$2,325,900 and a decrease of 0.1 total workyears from 1988. Of the request, \$24,751,500 will be for the Salaries and Expenses appropriation and \$26,021,300 will be for the Abatement, Control and Compliance appropriation. This is an increase of \$825,900 in the Salaries and Expenses appropriation and an increase of \$1,500,000 in the Abatement, Control and Compliance appropriation.

Program Description

The program areas under this subactivity include:

Chemical Testing -- The Chemical Testing program is the focal point for developing and accumulating data on existing chemicals. Section 4 of the Toxic Substances Control Act (TSCA) allows EPA to require testing of specific chemicals or mixtures when data are insufficient to determine health and environmental effects. This testing decision is based on a determination that a chemical may pose an unreasonable risk or that it is produced in substantial quantities which may result in significant human exposure or environmental release.

EPA must respond within one year to the Interagency Testing Committee's (ITC) lists of chemicals designated for priority testing consideration. EPA also uses Section 4 to require testing on other chemicals of concern to the Agency. The testing program emphasizes the importance of obtaining good quality test data as quickly as possible and uses a negotiated approach to testing wherever possible. This requires the publication of acceptable test methodologies, as well as conducting laboratory/data audits to ensure the data can be used for regulatory purposes.

Existing Chemical Review -- The Existing Chemical Review program encompasses chemicals in commerce when TSCA was passed and all new chemicals manufactured since then. There are approximately 66,000 chemicals now listed on the TSCA Inventory of Chemical Substances. The goal of the program is to reduce significant risks to society from these chemicals. To accomplish this EPA: (1) looks at known information on existing chemicals, (2) determines whether there might be a problem associated with the chemical, (3) assesses the magnitude of the problem, (4) identifies a solution, and (5) translates the solution into action. This process of evaluating a chemical's risk as it moves through the review cycle is referred to as the existing chemical program.

TSCA authority over existing chemicals is broad. It includes Section 8, which permits us to gather information which is already available to manufacturers and processors; Section 6, which allows us to control a chemical at any stage in its life cycle or ban it completely; and Section 9, which provides for formal referral of a chemical to another regulatory Agency. The significant new use provisions of Section 5, as well as nonregulatory chemical advisories, are also used to address certain existing chemical problems. TSCA authorities are also useful tools to apply to cross-media existing chemical problems.

New Chemical Review -- The New Chemical Review program reflects the preventive philosophy of TSCA by reviewing potential effects of all new chemicals before they are manufactured or imported. Manufacturers and importers are required to submit a 90-day advance notification of intent to manufacture or import a new chemical substance. The objective of the program is to review all new chemical notices and take prompt action on those that require additional data or pose concerns potentially warranting control. Section 5(h)(4) allows EPA to exclude low risk chemicals

from full review requirements. Section 5(a)(2) authorizes EPA to track new chemicals that might be of concern based on intended usage or significant increases in the volume of production. The new chemical review program also covers genetically engineered organisms submitted under premanufacture notices (PMNs).

EPA imposes or negotiates a variety of control actions on new chemicals of concern. These include issuance of Section 5(e) and 5(f) orders to control or prohibit manufacture of the chemical or withdraw them from the market. Section 5(e) orders are issued when available data are inadequate to evaluate the health and environmental risks posed by a new chemical and when the chemical "may present" an unreasonable risk or will be produced in substantial quantity and will have substantial human exposure or environmental release. The majority of these orders are made with the consent of the producer and result in limited manufacture of the substance until more definitive information is obtained. The authority of Section 5(f) is invoked when a chemical is found to present an unreasonable risk. In some cases these findings lead to an immediately effective Section 6(a) rule banning production of the chemical.

Title III - Title III of the Superfund Amendments and Reauthorization Act of 1986 established requirements for Federal, State, and local governments and industry regarding emergency planning and community right-to-know reporting on hazardous and toxic chemicals. The purpose is to increase the public's awareness of and access to information on the presence of hazardous chemicals and routine releases of these chemicals into the environment. EPA is required to establish and make publicly available an inventory of toxic chemical emissions for facilities falling under Standard Industrial Codes (SIC) 20-39. The Agency must collect toxic chemical release forms on over 300 chemicals or chemical compounds annually reflecting releases during each preceding calendar year. These data will provide a valuable source of information to Federal programs, States, localities and individuals involved in doing site-specific risk assessments.

CHEMICAL TESTING

1989 Program Request

The Agency requests a total of \$7,947,000 supported by 79.0 total workyears for this program, of which \$4,221,700 will be for the Salaries and Expenses appropriation and \$3,725,300 will be for the Abatement, Control and Compliance appropriation. This represents a decrease of \$82,700 in the Salaries and Expenses appropriation and a decrease of 4.0 total workyears. The decreases reflect the completion of the majority of Interagency Testing Committee (ITC) testing actions pending from previous years.

In 1989, testing actions are planned on 16 chemicals. These actions include publication of initial decisions on four chemicals of the 21st and 22nd ITC lists, four post-initial testing actions, and eight final test rules. By the end of 1989, final test rules will have been promulgated on 33 ITC chemicals; only 11 ITC designations are still awaiting final response. The Agency will also begin test data development on the 23rd and 24th ITC lists, including publication of Section 8 information gathering rules.

In 1989, the Agency will begin to implement an important non-ITC initiative, that is, filling identified data gaps on the Superfund Amendments and Reauthorization Act of 1986 (SARA) Section 110 chemicals. Section 110 of SARA indicates that where feasible, TSCA and the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) be used to require industry to test chemicals to fill data gaps identified in the toxicological profiles. Toxicological profiles will be prepared and published in early 1988 on the first group of 25 chemicals. Each profile will identify multiple gaps where adequate health effects data are incomplete or totally lacking. A generic TSCA Section 4 test rule designed to efficiently fill certain of these data gaps is planned for promulgation early in 1989. During 1989 the Agency

plans to utilize this rule to have data developed by industry on selected chemicals. The Agency will continue work on several other non-ITC actions. Test guidelines to support the testing program will continue at the 1988 level.

1988 Program

In 1988, the Agency is allocating a total of \$8,029,700 supported by 83.0 total workyears for this program, of which \$4,304,400 is from the Salaries and Expenses appropriation and \$3,725,300 is from the Abatement, Control and Compliance appropriation.

In 1988, the ITC testing program includes publication of initial testing decisions on three chemicals from the 19th and 20th ITC lists. Another 15 testing actions are being issued, 12 of which are final rules requiring testing to begin.

The non-ITC program will include a proposed generic test rule to facilitate testing of SARA Section 110 chemicals, a final test rule for the Office of Solid Waste to obtain health effects and chemical fate data on approximately 40 chemicals to support RCRA land disposal decisions, and continued work on several other non-ITC chemicals. Two new test guidelines are expected to result from this effort.

1987 Accomplishments

In 1987, the Agency obligated a total of \$8,100,900 supported by 78.5 total workyears for this program, of which \$4,129,900 was from the Salaries and Expenses appropriation and \$3,971,000 was from the Abatement, Control and Compliance appropriation.

During 1987, testing actions were taken on a total of 22 chemicals. Initial decisions included two chemicals on the 18th ITC list; testing was proposed on both. Post-initial and final decisions included 16 actions: one proposed, 14 final, and one enforceable consent order. Non-ITC testing actions resulted in four rules: a proposed test rule covering 77 chemicals to support land ban decisions under RCRA; a proposed and final test rule to obtain oncogenicity data on 2-ethyl-hexanol; and a final test rule on dioxin and dibenzofurans in response to a TSCA Section 21 petition.

Six new test guidelines were published in 1987. To date, a total of 101 test guidelines have been developed covering 119 methodologies. The annual review of test guidelines resulted in the publication of 37 final test guidelines.

EXISTING CHEMICAL REVIEW

1989 Program Request

The Agency requests a total of \$11,222,400 supported by 110.0 total workyears for this program, of which \$5,317,600 will be for the Salaries and Expenses appropriation and \$5,904,800 will be for the Abatement, Control and Compliance appropriation. This represents a decrease of \$173,800 for the Salaries and Expenses appropriation, no change in the Abatement, Control and Compliance appropriation and a decrease of 7.1 total workyears. The decreases reflect programmatic improvements resulting from the Comprehensive Assessment Information Rule (CAIR), a reduction in the number of preliminary risk assessments, and a shifting of resources to the new chemical program.

In 1989, the TSCA Existing Chemical Review program will continue to support through its varied authorities a broad based, Federal network of existing chemicals programs. Section 8 and Section 5(a) of TSCA provide extensive authority to collect existing data from industry, and the Agency will propose or finalize nine such data

collection rules in 1989. Some of these rules, particularly the Section 8(a) CAIR, will provide data collection on multiple chemicals for the Agency plus other interested Federal programs. The existing chemicals program will screen and review incoming data submitted under Section 8(e) substantial risk notices, Section 4 test data, National Toxicology Program test data, and new chemical referrals. The screening process will result in data referrals to other Agencies and will identify chemicals for continued review within the Agency. Preliminary risk assessments will be conducted on an estimated 10 chemicals, and two detailed risk assessments will be initiated.

In 1989, risk management activities will focus on PCBs, asbestos, formaldehyde, and chlorinated solvents. The PCB Notification and Manifesting Rule will be finalized, enabling the Agency to better track the disposal of PCB wastes and obtain information on the companies that handle and store PCB wastes prior to disposal. The Agency will also issue the final PCB Permit Revocation Rule in 1989. This rule will establish criteria and procedures for revocation of PCB permits issued under TSCA. Also, the PCB Disposal Permit Clearinghouse will be established. The Clearinghouse will maintain records on all permitted PCB and will be used by both the Regions and Headquarters.

Promulgation of the Asbestos Ban and Phase Out Rule may result in the establishment of permitting procedures for certain uses of asbestos materials, generating approximately 150-200 permit requests yearly. Rulemaking activities will be initiated under the appropriate regulatory authority(s) to manage the risks associated with the various uses of chlorinated solvents (such as metal cleaning, dry cleaning, aerosols and paint stripping). Regulatory actions on formaldehyde used in wood products will be initiated in 1989.

1988 Program

In 1988, the Agency is allocating a total of \$11,396,200 supported by 117.1 total workyears for this program, of which \$5,491,400 is from the Salaries and Expenses appropriation and \$5,904,800 is from the Abatement, Control and Compliance appropriation.

During 1988, the Existing Chemical Review program continues to emphasize the application of its information gathering authorities (Section 8 and Section 5(a)) to EPA program offices and other Federal Agencies. The CAIR will be promulgated and provide information gathering on approximately 30 chemicals for EPA and other Agencies. The Agency continues to receive a significant amount of data from Section 4 test rules, other testing programs such as the National Toxicology Program, and Section 8(e) reports, and is forwarding to other Agencies and programs information on chemicals which fall under their statutory authority. We are in the process of completing preliminary risk assessments on over 15 chemicals and initiating detailed risk assessments on two chemicals.

Risk management activities will include the promulgation of the Asbestos Ban and Phase Out Rule, the proposal of the PCB Notification and Manifesting Rule, and the continuation of the cross-media regulatory investigation, including Agency option selection, of chlorinated solvents. Initial options for perchloroethylene (PCE) used in dry cleaning are being investigated with subsequent options being developed for other use categories such as metal cleaning, paint stripping, and aerosols.

1987 Accomplishments

In 1987, the Agency obligated a total of \$14,363,900 supported by 112.5 total workyears for this program, of which \$6,256,300 was from the Salaries and Expenses appropriation and \$8,107,600 was from the Abatement, Control and Compliance appropriation.

During 1987, 75 chemicals were reviewed in the Existing Chemicals Program. As a result, 12 chemicals were referred to risk management, 6 chemicals were referred for information gathering, 13 chemicals required no further action and 44 were designated for further review and/or risk management activities. Significant accomplishments under Section 8 include promulgation of the Section 8(d) outreach rule which will provide information on 102 chemicals for EPA and the Consumer Product Safety Commission (CPSC), and the proposal or finalization of eight Section 5(a) significant new use rules.

Risk evaluation activities included the initiation of preliminary risk assessments on 18 chemicals and detailed risk assessments on 3 chemicals. Risk management included two proposed rulemakings on PCBs and the issuance of a policy statement on PCB spills clean-up. The Asbestos Worker Protection and Training Rule was promulgated in 1987. The Agency issued a chemical advisory on the use of nitropropane.

The Agency began a new activity in 1987 which focused on risk communication through the development of the Chemical Assessment Desk. The Chemical Assessment Desk provided written responses to 105 chemical-specific questions from Regional offices, other EPA offices and Federal agencies, State and local governments, and non-government organizations, companies and private citizens.

The existing chemicals program was also responsible in 1987 for investigating the first priority list of 25 hazardous substances which will result in subsequent detailed toxicological profiles as part of an agreement with the Agency for Toxic Substances and Disease Registry (ATSDR).

NEW CHEMICAL REVIEW

1989 Program Request

The Agency requests a total of \$21,606,500 supported by 252.6 total workyears for this program, of which \$12,769,400 will be for the Salaries and Expenses appropriation and \$8,837,100 will be for the Abatement, Control and Compliance appropriation. This represents an increase of \$781,900 for the Salaries and Expenses appropriation, no change in the Abatement, Control and Compliance appropriation, and an increase of 8.1 total workyears. The increases will support the expanding biotechnology program.

In 1989, the Agency will maintain an effective new chemical review program to ensure that any unreasonable health and environmental risks are addressed before a new chemical enters the marketplace. Approximately 3,000 new chemical notices are expected, an increase of 15% over 1988. About 260 of these new chemicals will require detailed review resulting in testing, exposure controls, or withdrawal by the manufacturer. Agency concerns which cannot be resolved through negotiation will be addressed through formal Section 5(e) or 5(f) orders.

With the promulgation of the expedited follow-up Significant New Use Rule (SNUR) in 1988, a more efficient follow-up program will be in place. Compared to previous years, we will be able to subject more new chemicals to significant new use criteria. This generic approach represents a significant step in protecting health and the environment. We will receive test studies as a result of Section 5(e) consent orders with testing triggers prompting EPA actions to: 1) modify/revoke terms of the consent order, 2) leave the consent in place under the same conditions, or 3) ban/cease manufacture.

Biotechnology manufacture notices will increase in 1989. A minimum of 35-50 notices is expected, or double the level expected in 1988. These reviews are complex and require a substantial amount of interdisciplinary scientific and technical expertise to complete a thorough evaluation. In 1989, the biotechnology

program will promulgate three rules implementing review and reporting under TSCA. They include a Section 8 reporting rule covering releases of living organisms to the environment, a Section 5 SNUR for pathogens, and a modification of the Section 5(h)(3) research and development (R&D) exemption. A Section 5(h)(4) exemption rule will be proposed for contained and/or closed system uses of microorganisms which will not present unreasonable risks. The Agency will continue to work closely with other Federal agencies, scientific groups, public interest groups, and international organizations concerned with biotechnology issues.

1988 Program

In 1988, the Agency is allocating a total of \$20,824,600 supported by 244.5 total workyears for this program, of which \$11,987,500 is from the Salaries and Expenses appropriation and \$8,837,100 is from the Abatement, Control and Compliance appropriation.

The Agency is subjecting all new chemical notices to a thorough review and taking action to control unreasonable health and environmental risks wherever necessary. We anticipate receiving 2,600 new chemical notices in the course of the year, a 13% increase in workload from 1987. About 230 of the new chemicals require some form of control (i.e., testing, exposure controls, withdrawal). Test data has begun to arrive as a result of Section 5(e) actions and voluntary industry compliance, necessitating Agency review. We are finalizing the expedited new chemical follow-up rule and are subjecting new chemicals with Section 5(e) actions to follow up reporting requirements using that rule. The Agency also intends to publish a final rule implementing a user fee for new chemical reviews.

The total number of biotechnology notices has significantly increased since 1987. We expect to receive a total of 15-20 biotechnology notices this year, which will each require complex interdisciplinary scientific and technical review. Biotechnology activities also include three proposed rules: a Section 8 reporting rule covering releases of living organisms to the environment, a Section 5(a) SNUR for pathogens, and modification of the Section 5(h)(3) R&D exemption. We are continuing to work closely with other parties to provide for the coordinated review of biotechnology substances.

1987 Accomplishments

In 1987, the Agency obligated a total of \$20,279,400 supported by 255.9 total workyears for this program, of which \$11,668,900 was from the Salaries and Expenses appropriation and \$8,610,500 was from the Abatement, Control and Compliance appropriation.

Receipt of new chemical notices reached a high of 2,298, and control actions were taken on 200 chemicals. EPA continued to monitor new chemicals that might have been of concern if their uses changed, or if production volumes significantly increased from those estimated during their initial review. A procedural rule for expedited new chemical follow-up was proposed. This rule reduced the need for chemical-specific SNURs while increasing the number of chemicals subject to follow-up. The Agency also published a proposed rule to implement a user fee for new chemical reviews.

The Agency received seven TSCA biotechnology PMNs. These first reviews under TSCA resulted in the issuance of one Section 5(e) Consent order. Three of the notices were granted, and the remaining three were designated for further review. The TSCA biotechnology program continued to be closely coordinated with other Federal agencies, the private sector, and international organizations.

TITLE III

1989 Program Request

The Agency requests a total of \$9,996,900 supported by 37.4 total workyears for this program, of which \$2,442,800 will be for the Salaries and Expenses appropriation and \$7,554,100 will be for the Abatement, Control and Compliance appropriation. This represents increases of \$300,500 in the Salaries and Expenses appropriation, \$1,500,000 in the Abatement, Control and Compliance Appropriation, and an increase of 2.9 total workyears. The increases reflect expanded efforts to process industry data submitted pursuant to new statutory requirements.

In 1989, the first hazardous chemical release information gathered under SARA Section 313 will be available to the public. Emissions reports received in 1988 will be made available and work will continue on the second cycle of reports for 1988 emissions. In the second cycle, we estimate receiving at least 300,000 emissions reports. As in 1988, work to improve the overall quality of the data will continue as omissions and obvious errors in reporting are corrected. The Agency will also continue working with States to develop programs capable of analyzing and interpreting the emissions data on a local site-specific level.

The Regions will continue to disseminate information and provide training on reporting requirements concentrating on companies with the most potential for significant emissions. The Regions will also serve as the key resource in preventing misuse and misunderstanding of emissions data.

1988 Program

In 1988, the Agency is allocating a total of \$8,196,400 supported by 34.5 total workyears for this program, of which \$2,142,300 is from the Salaries and Expenses appropriation and \$6,054,100 is from the Abatement, Control and Compliance appropriation.

The Agency published the Section 313 emissions inventory rule in January 1988. The Agency expects to receive 300,000 reports on 1987 emissions, although there is uncertainty about industry's response rate and ability to meet the reporting deadline because of the complexity of Section 313 reporting requirements. We are processing the emissions reports in the last quarter of 1988 and expect to make the 1987 data publicly available by mid-1989. Our highest priority is to process the emissions reports into the public data base. The program is conducting a processing operation to resolve obvious errors and omissions before the data are entered into the data base. Some detailed quality control checks are planned to improve the overall emissions data quality. Quality control efforts will also help us to determine if revisions to the reporting requirements are necessary. Technical assistance will be provided to assist the public in understanding emissions data.

The Regions have a major role in implementing Section 313. They are continuing to provide technical assistance and guidance to industry in complying with requirements under Section 313. In addition, the Regions are working through State and local groups to conduct seminars about Title III and to develop training programs to help industry properly complete the emissions report form, an important part of our overall data quality plan.

1987 Accomplishments

In 1987, the Agency obligated a total of \$5,079,100 supported by 2.7 total workyears for this program, all of which was from the Hazardous Substance Superfund appropriation.

In 1987, Agency accomplishments included meeting a wide variety of responsibilities as mandated under Title III of SARA. These included meeting statutory deadlines for the promulgation of the proposed emissions reporting rule under Section 313; developing technical guidance on estimating toxic releases; reviewing four petitions for adding or deleting chemicals from the list of chemicals subject to reporting; and completing other analyses. In addition, the Agency initiated contact with groups interested in Title III such as States, environmental groups, and the regulated community in order to inform them about the requirements for reporting, and the potential impact of the law. These contacts were organized, coordinated, and conducted by Regional and Headquarters staff. They included an extensive mailing of a brochure on the law, public meetings, and workshops for industry. The program also provided technical support to OSWER and OGC in their rulemaking and outreach activities under Sections 302, 304, 311, 312, 322 and 323.

ENVIRONMENTAL PROTECTION AGENCY

1989 Budget Estimate

Table of Contents

	<u>Page</u>
<u>TOXIC SUBSTANCES</u>	
ENFORCEMENT	
Toxic Substances Enforcement.....	TS-36
Toxic Substances Enforcement.....	TS-39
Toxic Substances Enforcement Grants.....	TS-41
OPTS Enforcement - Title III.....	TS-42

TOXIC SUBSTANCES
Toxic Substances Enforcement

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988	
----- (DOLLARS IN THOUSANDS) -----							
PROGRAM -----							
Toxic Substances Enforcement							
Salaries & Expenses	\$6,759.8	\$7,697.9	\$7,690.3	\$7,690.3	\$7,988.6	\$298.3	
Abatement Control and Compliance	\$1,832.5	\$2,015.5	\$2,015.5	\$2,015.5	\$2,015.5		
TOTAL	\$8,592.3	\$9,713.4	\$9,705.8	\$9,705.8	\$10,004.1	\$298.3	
Toxic Substances Enforcement Grants							
Abatement Control and Compliance	\$2,241.7	\$2,200.0	\$2,200.0	\$2,200.0	\$2,200.0		
TOTAL	\$2,241.7	\$2,200.0	\$2,200.0	\$2,200.0	\$2,200.0		
TOTAL:							
Salaries & Expenses	\$6,759.8	\$7,697.9	\$7,690.3	\$7,690.3	\$7,988.6	\$298.3	
Abatement Control and Compliance	\$4,074.2	\$4,215.5	\$4,215.5	\$4,215.5	\$4,215.5		
Toxic Substances Enforcement	TOTAL	\$10,834.0	\$11,913.4	\$11,905.8	\$11,905.8	\$12,204.1	\$298.3
PERMANENT WORKYEARS -----							
Toxic Substances Enforcement	155.7	180.9	180.9	176.2	184.3	8.1	
TOTAL PERMANENT WORKYEARS	155.7	180.9	180.9	176.2	184.3	8.1	

TS-37

TOXIC SUBSTANCES

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988

	(DOLLARS IN THOUSANDS)					

TOTAL WORKYEARS

Toxic Substances Enforcement	166.1	180.9	180.9	184.3	184.3	
TOTAL WORKYEARS	166.1	180.9	180.9	184.3	184.3	

TOXIC SUBSTANCES

Toxic Substances Enforcement

Budget Request

The Agency requests a total of \$12,204,100 and 184.3 total workyears for 1989, an increase of \$298,300 and no change in workyears from 1988. Of the request, \$7,988,600 will be for the Salaries and Expenses appropriation, and \$4,215,500 will be for the Abatement, Control and Compliance appropriation. This represents an increase of \$298,300 in the Salaries and Expenses appropriation, and no change in the Abatement, Control and Compliance appropriation.

Program Description

The program areas under this subactivity are:

Toxic Substances Enforcement -- The toxic substances enforcement program ensures compliance with the Toxic Substances Control Act (TSCA) and related rules and regulations. The Regional offices inspect facilities that manufacture, process, distribute, use or dispose of new or specifically regulated chemicals. Regional staff provide technical assistance to the regulated community in complying with applicable TSCA regulations, and prepare and issue notices of violation and administrative orders.

Headquarters is responsible for the overall management of the national toxic substances compliance monitoring program. Headquarters provides support in the development of new TSCA regulations to assure that they are efficient and equitable from an enforcement viewpoint, develops enforcement response policies and compliance monitoring strategies for each new rule, and provides compliance assistance and technical support to case development and prosecution activities. Headquarters also manages the laboratory data integrity program. This program involves inspections of laboratories that perform chemical and environmental testing, and in-depth audits of test studies submitted to the Agency pursuant to TSCA and Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) testing rules.

Toxic Substances Enforcement Grants -- This program funds cooperative agreements with State agencies to develop and operate toxic substances compliance monitoring programs in the area of existing chemicals control. The program permits wider coverage of the regulated community without requiring additional Federal personnel.

TOXIC SUBSTANCES ENFORCEMENT

1989 Program Request

The Agency requests a total of \$10,004,100 and 184.3 total workyears for this program, of which \$7,988,600 will be for the Salaries and Expenses appropriation and \$2,015,500 will be for the Abatement, Control, and Compliance appropriation. This represents an increase of \$298,300 for Salaries and Expenses, no change in Abatement, Control and Compliance and no change in total workyears. The increase in Salaries and Expenses reflects increased personnel costs.

In 1989, Regional personnel will conduct compliance inspections and provide case development specifically targeted at PCB disposal sites and broker/transporter/storer facilities. The Regions will conduct compliance inspections in support of existing TSCA rules, although many PCB inspections and most asbestos-in-schools compliance inspections will be conducted either under contract or through enforcement agreements with cooperating State agencies. Regional staff

will participate in the laboratory data integrity program by conducting good laboratory practices (GLP) inspections at laboratories that perform toxic substances testing. Inspections in support of the PCB ban, marking and disposal rules will continue to receive strong emphasis. The Regional offices will also conduct compliance inspections in support of Section 5 new chemical regulations, Section 8 reporting rules, Section 12 export requirements and Section 13 import requirements.

Headquarters manages the national toxic substances enforcement program through guidance to and periodic reviews of Regional programs, including on-site program evaluations. Headquarters also manages a cooperative agreement with the American Association of Retired Persons (AARP) to conduct compliance monitoring inspections in support of the asbestos-in-schools rule and exercises overall authority in conducting the Agency's laboratory data integrity program. EPA will continue to conduct full-scale audits of completed test studies submitted to the Agency, and inspections of testing laboratories to verify compliance with good laboratory practices. Both the Regions and Headquarters will also prepare and issue notices of violation and administrative orders and will provide technical assistance and support as necessary to the Office of Enforcement and Compliance Monitoring (OECM) in the prosecution of civil and criminal cases.

1988 Program

In 1988, the Agency is allocating a total of \$9,705,800 and 184.3 total workyears for this program, of which \$7,690,300 is from the Salaries and Expenses appropriation and \$2,015,500 is from the Abatement, Control, and Compliance appropriation.

The Regions are conducting inspection programs to determine compliance with TSCA rules and providing assistance to firms seeking to comply voluntarily with TSCA requirements, or who wish to take remedial actions to achieve compliance. The Regional offices are preparing and issuing notices of violation and administrative orders, and developing and prosecuting cases when compliance is not achieved. Oversight of the cooperative enforcement agreement program, review and approval of PCB landfills and unique-design stationary PCB incinerators, and PCB site disposal monitoring are also responsibilities of the regional offices.

In addition to providing overall program guidance and management, Headquarters is managing the laboratory data integrity program and conducting audits of test studies submitted to the Agency under TSCA testing rules. Headquarters staff are managing the AARP cooperative agreement that supports compliance monitoring inspections under the asbestos-in-schools program. Headquarters is also participating in regulation development directed by the Office of Toxic Substances, and preparing enforcement response policies and compliance monitoring strategies for newly developed regulations.

1987 Accomplishments

In 1987, the Agency obligated a total of \$8,592,300 supported by 166.1 total workyears for this program, of which \$6,759,800 was from the Salaries and Expenses appropriation and \$1,832,500 was from the Abatement, Control and Compliance appropriation.

In 1987 the program conducted compliance inspections, data processing, and scientific review of data audits. The Regional offices conducted compliance inspections in support of existing TSCA rules, with particular emphasis upon PCB and asbestos-in-schools inspections under Section 6. Upon detection of violations, including those originating from State-conducted inspections, the Regional staffs developed and prosecuted enforcement cases. The Agency issued administrative orders in 1,051 cases, issued 2,276 notices of warning, and referred six civil cases to the Department of Justice.

TOXIC SUBSTANCES ENFORCEMENT GRANTS

1989 Program Request

The Agency requests a total of \$2,200,000 for this program, all of which will be for the Abatement, Control and Compliance appropriation. These funds will support toxic substances compliance monitoring programs with an anticipated 21 participating States. The State programs will emphasize compliance monitoring of chemical control rules, particularly for asbestos and PCBs.

1988 Program

In 1988, the Agency is allocating a total of \$2,200,000 for this program, all of which is from the Abatement, Control and Compliance appropriation. These funds support State-conducted toxic substances compliance monitoring programs in 21 States. (Additional participating States which have joined the cooperative enforcement agreement program in 1988 are Idaho, Missouri, New Mexico and Vermont; Florida has terminated its cooperative agreement.) These State programs focus upon Section 6 chemical control rules, particularly PCB and asbestos compliance monitoring.

1987 Accomplishments

In 1987, the Agency obligated a total of \$2,241,700 for this program, all of which was from the Abatement, Control and Compliance appropriation. These funds supported State cooperative enforcement agreement programs in Arizona, California, Connecticut, Colorado, Florida, Iowa, Kansas, Maryland, Michigan, New Hampshire, North Dakota, Ohio, Oklahoma, Puerto Rico, Texas, West Virginia, Washington and Wisconsin. These States conducted 877 asbestos-in-schools inspections and 1,143 PCB inspections.

TOXIC SUBSTANCES
OPTS - Enforcement - Title III

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988
----- (DOLLARS IN THOUSANDS) -----						
PROGRAM -----						
OPTS - ENFORCEMENT - TITLE III						
Salaries & Expenses			\$524.0	\$524.0	\$542.3	\$18.3
Abatement Control and Compliance					\$1,500.0	\$1,500.0
TOTAL			\$524.0	\$524.0	\$2,042.3	\$1,518.3
TOTAL:						
Salaries & Expenses			\$524.0	\$524.0	\$542.3	\$18.3
Abatement Control and Compliance					\$1,500.0	\$1,500.0
PERMANENT WORKYEARS -----						
OPTS - ENFORCEMENT - TITLE III						
			11.0	10.9	11.0	.1
TOTAL PERMANENT WORKYEARS						
			11.0	10.9	11.0	.1
TOTAL WORKYEARS -----						
OPTS - ENFORCEMENT - TITLE III						
			11.0	11.0	11.0	
TOTAL WORKYEARS						
			11.0	11.0	11.0	

TS-42

TOXIC SUBSTANCES

OPTS Title III Enforcement

Budget Request

The Agency requests a total of \$2,042,300 supported by 11.0 total workyears for 1989, an increase of \$1,518,300 and no change in total workyears from 1988. Of this amount, \$542,300 will be for the Salaries and Expenses appropriation and \$1,500,000 will be for the Abatement, Control and Compliance appropriation, increases of \$18,300 and \$1,500,000 respectively.

Program Description

This subactivity includes the following:

OPTS Title III Enforcement -- This program ensures compliance with Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). Regional staff provide compliance assistance and training to the regulated industry, the States, and local authorities to assist them in complying with Title III requirements. The Regional offices also inspect chemical facilities to verify that these facilities meet Title III requirements to report to local authorities, the States, and EPA. Regional staff also develop enforcement actions when violations are detected.

Headquarters is responsible for the overall management of the national SARA Title III compliance monitoring program. Headquarters personnel provide support in the development of Title III regulations to assure that they are efficient and equitable from an enforcement viewpoint, develop enforcement response policies and compliance monitoring strategies for new rules, and provide assistance to case development and prosecution activities.

OPTS TITLE III ENFORCEMENT

1989 Program Request

The Agency requests a total of \$2,042,300 supported by 11.0 total workyears for this program, of which \$542,300 will be for the Salaries and Expenses appropriation, and \$1,500,000 will be for the Abatement, Control, and Compliance appropriation. This represents an increase of \$18,300 for the Salaries and Expenses appropriation, an increase of \$1,500,000 in the Abatement, Control and Compliance appropriation, and no change in total workyears. The increase in Salaries and Expenses reflects increased personnel costs. The increase in Abatement, Control, and Compliance represents the first time the Agency has requested such funding for this program. This funding will provide computer support and a grant for contractor inspections through the American Association of Retired Persons (AARP).

In 1989, contractor personnel will inspect chemical facilities that use, manufacture or process potentially harmful chemicals to verify that such facilities observe the reporting requirements of SARA Section 313. Section 313 requires facilities to submit annual toxic chemical release forms to EPA and the State in which the facility is located. Such forms list amounts of chemicals released into the environment during the preceding year. Since many such facilities are also subject to the reporting requirements of Sections 5, 8 and 13 of the Toxic Substances Control Act (TSCA), the regions will integrate Title III inspections with TSCA recordkeeping and reporting inspections where possible. The Regions will develop appropriate enforcement actions in response to any violations of Title III detected during these inspections.

In 1989, Headquarters staff will develop enforcement response policies, compliance monitoring strategies, procedural manuals and guidance relating to Section 313 of Title III. Headquarters personnel will also conduct case development activities and will continue to oversee and provide assistance for Regional case development. Other Headquarters activities will include participation with the Office of Toxic Substances in rulemaking, and providing training to Regional and contractor staff.

Headquarters will also establish a grant with the American Association of Retired Persons (AARP) to conduct compliance inspections and provide paralegal case development under SARA Title III. Such contractor support will enable the Agency to reach a broader portion of the regulated community without increasing Federal staff. In addition, Headquarters will implement a computer system to target compliance inspections. The computer system will cross-check production and facility profile data to identify facilities that might be expected to submit reports under Section 313 but have not. Facilities with the highest potential for failure to submit reports will be targeted for inspections.

1988 Program

In 1988, the Agency is allocating a total of \$524,000 supported by 11.0 total workyears for this program, all of which is from the Salaries and Expenses appropriation.

Now that SARA Title III is enforceable, the Regions are developing their role in providing compliance assistance to the regulated community, the States, and local authorities. Compliance assistance includes defining and identifying the regulated community, responding to inquiries from individual facilities or the regulated industry as a whole on enforcement requirements, providing training in compliance matters to industry, State or local representatives, and reviewing and implementing enforcement policies, strategies and inspection procedures. The Regions are also conducting a limited number of compliance inspections, some of which are integrated with other inspections under TSCA Sections 5, 8 and 13. The Regions are also implementing case development as violations are detected.

In 1988, Headquarters personnel are developing final enforcement response policies and compliance monitoring strategies to accompany final rules developed by the Office of Toxic Substances under Title III, and providing training for regional personnel. Headquarters staff participate in regulation development to assure the enforceability of new rules and to develop rules of practice. Other projects are developing guidance documents, inspection guidelines, procedural manuals and other materials to implement specific program activities. Finally, staff are also conducting case development activities, and providing oversight and assistance in regional case development as initial enforcement cases for this program begin to appear. Considerable attention to and oversight of case development is critical for a newly enforceable program to provide program-wide consistency among cases and to make precedent-setting determinations in cases of first impression, thereby assuring the integrity of the national compliance monitoring effort.

1987 Accomplishments

In 1987, the Agency obligated a total of \$1,900 supported by no workyears for this program, all of which was from the Salaries and Expenses appropriation.

During 1987, the first year in which Title III resources were available, the Regions began providing compliance assistance to the regulated community, the States, and local authorities in anticipation of the effective dates of various portions of the statute. Headquarters personnel developed draft enforcement response policies and compliance monitoring strategies corresponding to draft rules under development in the Office of Toxic Substances, and provided initial training

for regional personnel. Headquarters staff participated in regulation development and began developing guidance documents, inspection guidelines, procedural manuals and other materials to implement specific program activities.

ENVIRONMENTAL PROTECTION AGENCY

1989 Budget Estimate

Table of Contents

	<u>Page</u>
<u>ENERGY</u>	E-1
RESEARCH & DEVELOPMENT	
Multi-Media Energy.....	E-5
Acid Rain.....	E-10
Environmental Engineering and Technology.....	E-11
Environmental Processes and Effects.....	E-12

ENERGY

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988
--	----------------	----------------------------	-----------------	-----------------------------	-----------------	--

(DOLLARS IN THOUSANDS)

APPROPRIATION

Salaries & Expenses	\$5,500.0	\$4,803.7	\$5,368.0	\$5,368.0	\$5,278.3	-\$89.7
Research & Development	\$57,136.1	\$50,915.1	\$50,415.1	\$50,252.3	\$50,179.2	-\$73.1
TOTAL, Energy	\$62,636.1	\$55,718.8	\$55,783.1	\$55,620.3	\$55,457.5	-\$162.8

PERMANENT WORKYEARS	78.0	82.6	102.6	79.0	74.6	-4.4
TOTAL WORKYEARS	84.1	82.6	102.6	80.6	79.1	-1.5
OUTLAYS	\$55,652.7	\$58,538.5	\$55,560.5	\$55,398.3	\$51,289.9	-\$4,108.4

AUTHORIZATION LEVELS

Authorization for Energy is under the Environmental Research, Development and Demonstration Act which expired September 30, 1981. Reauthorization is pending.

ENERGY

OVERVIEW AND STRATEGY

The multi-media energy research and development program provides the scientific information necessary to evaluate environmental impacts from and potential controls on the energy sector (e.g., utilities, industry, and automobiles). This research program is currently focused on two issues: (1) reducing scientific uncertainties surrounding the phenomenon of acid deposition; and (2) developing and evaluating Limestone Injection Multistage Burner (LIMB) control technologies.

Acid Deposition

The acid deposition research program represents the Agency's part of the National Acid Precipitation Assessment Program (NAPAP), mandated by the Energy Security Act of 1980 (Title VII of P.L. 96-294). The purpose of this research is to increase understanding of the causes, effects, and potential mitigation measures for acid deposition. With more reliable information available to policy-makers, more effective and cost-efficient mitigation decisions should be developed.

The 1989 research program emphasizes projects that will produce information for the 1990 NAPAP Assessment Report to Congress on acid deposition. Research will refine emissions inventories and air models on sulfur dioxides (SO_2), nitrogen oxides (NO_x), Volatile Organic Compounds (VOC), and alkaline materials. The advanced version of the Regional Acid Deposition Model (RADM) will be evaluated, using field data, to produce a model that can predict acid deposition levels from changes in air emission levels. This program will continue to support the 150 station National Trends Network (NTN) which monitors wet deposition and will expand the dry deposition monitoring network to 75 operational stations with 55 stations providing first year data.

Research into effects of acid deposition will continue in the aquatic, terrestrial, and material areas. Research on aquatic effects will further develop a national assessment on the damage to aquatic ecosystems caused by acid deposition. Emphasis will be placed on investigating the extent, duration, frequency, and magnitude of episodic acidification events and on the Watershed Manipulation Project (WMP). Research on terrestrial effects, coordinated with the U.S. Forest Service, will emphasize research on evaluating competing hypotheses on the exact effects on forests from acid deposition. Research will cover spruce-fir, southern pine, eastern hardwoods, and western conifer forests. The mountain cloud chemistry/forest exposure monitoring network will continue to provide data. Research on material effects will focus on developing models to determine the damage to materials from acid deposition.

Finally, research will develop some "cost of controls" to help evaluate potential acid deposition control strategies.

LIMB Control Technology

The LIMB control technology program is designed to develop, demonstrate, and evaluate effective and inexpensive emission control systems that will reduce air emissions of sulfur oxides (SO_x) and nitrogen oxides (NO_x) from the flue gases of pulverized coal-fired boilers. This research will provide data on the performance, reliability, and cost-efficiency to accelerate commercial viability of retrofit technologies for coal-fired boilers.

The 1989 research and development program will emphasize the completion of the commercial-scale demonstration of the wall-fired LIMB technology and prepare for the testing of the commercial-scale demonstration of the tangential-fired LIMB technology.

ENVIRONMENTAL PROTECTION AGENCY

1989 Budget Estimate

Table of Contents

	<u>Page</u>
<u>ENERGY</u>	
RESEARCH & DEVELOPMENT	
Multi-Media Energy.....	E-5
Acid Rain.....	E-10
Environmental Engineering and Technology.....	E-11
Environmental Processes and Effects.....	E-12

ENERGY
Multi-Media Energy

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988	
----- (DOLLARS IN THOUSANDS) -----							
PROGRAM -----							
Acid Rain - Multi-Media - Energy							
Salaries & Expenses	\$4,257.5	\$4,726.7	\$4,356.8	\$4,356.8	\$4,245.0	-\$111.8	
Research & Development	\$49,615.8	\$50,881.7	\$47,881.7	\$47,745.8	\$47,745.8		
TOTAL	\$53,873.3	\$55,608.4	\$52,238.5	\$52,102.6	\$51,990.8	-\$111.8	
Environmental Engineering & Technology - Multi - Media - Energy							
Salaries & Expenses	\$1,242.5	\$77.0	\$1,011.2	\$1,011.2	\$1,033.3	\$22.1	
Research & Development	\$7,290.3	\$33.4	\$2,533.4	\$2,506.5	\$2,433.4	-\$73.1	
TOTAL	\$8,532.8	\$110.4	\$3,544.6	\$3,517.7	\$3,466.7	-\$51.0	
Environmental Processes & Effects - Multi - Media - Energy							
Research & Development	\$230.0						
TOTAL	\$230.0						
TOTAL:							
Salaries & Expenses	\$5,500.0	\$4,803.7	\$5,368.0	\$5,368.0	\$5,278.3	-\$89.7	
Research & Development	\$57,136.1	\$50,915.1	\$50,415.1	\$50,252.3	\$50,179.2	-\$73.1	
Multi-Media Energy	TOTAL	\$62,636.1	\$55,718.8	\$55,783.1	\$55,620.3	\$55,457.5	-\$162.8

	ACTUAL 1987	ENERGY Multi-Media Energy BUDGET ENACTED ESTIMATE 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988
--	----------------	---	-----------------------------	-----------------	--

(DOLLARS IN THOUSANDS)

PERMANENT WORKYEARS

Acid Rain - Multi-Media - Energy	57.0	63.9	63.9	59.0	54.6	-4.4
Environmental Engineering & Technology - Multi - Media - Energy	21.0	18.7	38.7	20.0	20.0	
TOTAL PERMANENT WORKYEARS	78.0	82.6	102.6	79.0	74.6	-4.4

TOTAL WORKYEARS

Acid Rain - Multi-Media - Energy	63.1	63.9	63.9	60.6	59.1	-1.5
Environmental Engineering & Technology - Multi - Media - Energy	21.0	18.7	38.7	20.0	20.0	
TOTAL WORKYEARS	84.1	82.6	102.6	80.6	79.1	-1.5

ENERGY

Multi-media Energy

Principal Outputs by Objective

Objective 1: Estimate Emissions from Man-made Sources (Acid Rain)

- 1989: o Report and computer tape of 1985 air emissions inventory on SO₂, NO_x, VOCs, and alkaline material for the 1990 NAPAP Assessment Report
- 1988: o Final 1985 air emissions inventory on SO₂, NO_x, VOCs, and alkaline material
- 1987: o Preliminary 1985 air emissions inventory on SO₂, NO_x, VOCs, and alkaline material

Objective 2: Understand Atmospheric Processes (Acid Rain)

- 1989: o Report on the state-of-science of the Regional Acid Deposition Model (RADM) with user's guide
- 1988: o Advanced version of RADM developed
- 1987: o Monitoring network established for field evaluation of RADM

Objective 3: Establish Deposition Monitoring Data Bases (Acid Rain)

- 1989: o Expand dry deposition monitoring network by 25 new sites (75 total sites) First year data provided by 55 sites
- 1988: o Final report on the Pilot Snowfall Monitoring Study
- 1987: o Dry deposition monitoring network established with 50 total sites

Objective 4: Understand and Quantify Aquatic Effects (Acid Rain)

- 1989: o Report on Direct/Delayed Response Program predictions for the northeast and southern Blue Ridge province (Level III)
- 1988: o Report on temporal chemical variability in lakes within northeastern U.S.
 - o Regional case studies of surface water response characteristics
 - o Report on the Mid-Atlantic/Southeastern U.S. Stream Survey
- 1987: o Report on the Western Lake Survey

Objective 5: Understand and Quantify Terrestrial Effects (Acid Rain)

- 1989: o Report on roles of sulfur and nitrogen in forest decline
- 1988: o Report on seedling exposure studies
 - o Evaluation of non-air pollution factors in growth reductions and visible decline of forests
 - o Evaluation of the extent and magnitude of changes in forest conditions

- 1987: o Annual Report on the Forest Response Program
o Report on the 1986 operations of the Mountain Cloud Chemistry Project

Objective 6: Understand and Quantify Materials and Cultural Resource Effects (Acid Rain)

- 1989: o Field study report on acid deposition damage function for metallic materials
1988: o Report on field verification of the acid deposition damage function for galvanized steel
1987: o Report on the laboratory study of acid deposition damage mechanisms for galvanized steel

Objective 7: Evaluate Control Technologies (Acid Rain)

- 1989: o Report on site-specific performance cost estimates of SO₂ and NO_x controls from 200 coal-fired power plants in the eastern U.S.
o Update on "generic costs" of reducing SO₂, NO_x, and VOC air emissions
1988: o Interim Report on site-specific performance cost estimates of SO₂ and NO_x controls from 50 coal-fired power plants in the eastern U.S.
1987: o Report on site-specific performance cost estimates of SO₂ and NO_x controls from 12 coal-fired power plants in Ohio, Kentucky and the Tennessee Valley Authority system

Objective 8: Develop and Evaluate LIMB Control Technology (Env Engineering)

- 1989: o Report on a commercial-scale demonstration of the wall-fired LIMB technology on controlling SO₂ and NO_x air emissions from coal-fired utility boilers
o Report on a pilot-scale characterization of the E-SO_x process to control SO₂ air emissions in retrofit coal-fired applications
o Report on fundamental studies to enhance the LIMB process to control SO₂ air emissions in retrofit coal-fired applications
1988: o Report on the technical and economic feasibility of the E-SO_x process to control SO_x air emissions from existing coal-fired boilers
o Initiate testing of LIMB on a pilot-scale tangential-fired prototype (60 megawatt) boiler
1987 o Report on the commercialization requirements for LIMB

Objective 9: Evaluate Impacts of Energy Development in Cold Climates (Env Process)

- 1987 o Final report on Cold Climate research program

ENERGY

Multi-media Energy

Budget Request

The Agency requests a total of \$55,457,500 supported by 79.1 total workyears for 1989, a decrease of \$162,800 and 1.5 total workyears from 1988. Of the request, \$5,278,300 will be for the Salaries and Expenses appropriation and \$50,179,200 will be for the Research and Development appropriation, a decrease of \$89,700 and \$73,100, respectively.

Program Description

The multi-media energy research and development program provides the scientific information necessary to evaluate environmental impacts from and potential controls on the energy sector (e.g., utilities, industry, and automobiles). Research is currently focused on two issues: (1) reducing scientific uncertainties surrounding acid deposition; and (2) developing and evaluating Limestone Injection Multistage Burner (LIMB) control technologies. Research on the first issue is coordinated with the Interagency Task Force of the National Acid Precipitation Assessment Program (NAPAP). Research on this issue will emphasize information needed for the 1990 NAPAP Assessment Report to Congress. The second research issue is conducted in conjunction with the Department of Energy, which is responsible for the Federal Clean Coal Technology Program. The following objectives define the Agency's energy research and development activities:

Objective 1. Estimate Emissions from Man-made Sources. This research will improve the understanding of the amount of and relationships among acid-forming air emissions resulting from man's activities.

Objective 2. Understand Atmospheric Processes. This research will improve the capability to examine and predict the transport, chemical transformation, and deposition processes of air masses.

Objective 3. Establish Deposition Monitoring Data Bases. This research will quantify wet and dry acid deposition levels to establish trends, provide inputs to effects studies, and provide information for statistical analyses on source/receptor relationships.

Objective 4. Understand and Quantify Aquatic Effects. This research will quantify the impacts of acidification on representative aquatic ecosystems and will develop appropriate mitigation techniques.

Objective 5. Understand and Quantify Terrestrial Effects. This research will quantify the extent of acid deposition effects on plants (i.e., crops and forests), develop quantitative cause and effect relationships, and predict the effects under alternative deposition level scenarios.

Objective 6. Understand and Quantify Materials and Cultural Resource Effects. This research will determine how materials are incrementally damaged from acid deposition. This includes determining the materials at risk and differentiating the effects of acid deposition from those of other sources of pollution.

Objective 7. Evaluate Control Technologies. This research will develop "cost of control" data to help evaluate alternative acid deposition control strategies. This includes analyzing selected engineering technologies, their performance and their costs.

Objective 8. Develop and Evaluate LIMB Control Technology. This research will develop and evaluate air emission control technologies that will remove sulfur oxides (SO_x) and nitrogen oxides (NO_x) from flue gases of pulverized coal-fired boilers.

ACID RAIN

1989 Program Request

The Agency requests a total of \$51,990,800 supported by 59.1 total workyears for this research, of which \$4,245,000 will be for the Salaries and Expenses appropriation and \$47,745,800 will be for the Research and Development appropriation. This represents a decrease of \$111,800 in the Salaries and Expenses appropriation and a decrease of 1.5 total workyears from 1988. These decreases reflect completion of some projects within the terrestrial and aquatics effects research areas.

Estimate Emissions from Man-made Sources. This research will produce estimates of major atmospheric acid-forming emissions resulting from man's activities and the relationships among these emissions. In 1989, research will include: (1) further development of air emission inventories and (2) further development of air models specific to major source-sectors (e.g., utilities) to help evaluate policy options and control strategies. This research will inventory data on SO_x, NO_x, VOCs, and alkaline material air emissions for the Regional Acid Deposition Model (RADM) and for determining trends in air emissions from 1985 to 1990.

Understand Atmospheric Processes. This research will improve understanding of atmospheric processes involved in acid deposition. Major areas of emphasis will be on transport, physical and chemical transformation, and deposition processes of acid-forming pollutants in the atmosphere. Field data will be collected and air models evaluated to better differentiate the contribution of local vs. distant sources of acid-forming emissions. Knowledge of atmospheric processes coupled with predictive models will enable policy officials to assess acid deposition levels from changes in air emissions. In 1989, research will include: (1) sensitivity testing of the advanced version of RADM using monitoring data bases and (2) evaluation and refinement of RADM using field data.

Establish Deposition Monitoring Data Bases. This research will quantify wet and dry deposition levels of acid-forming pollutants in the air to establish cause and effect relationships of acid deposition. In 1989, research will involve: (1) further quantification of wet and dry deposition levels for effects studies and for evaluating air models; (2) maintenance of the 150 station National Trends Network (NTN) for measuring wet acid deposition; and (3) operation of 75 dry deposition monitoring sites to develop base data and trends on dry deposition levels. In 1989, 75 dry deposition stations will be operational with 55 stations producing first year data.

Understand and Quantify Aquatic Effects. This research will begin to integrate information to develop a national assessment of the damage to aquatic ecosystems caused by acid deposition. In 1989, research will involve refining estimates of aquatic ecosystem effects by examining the chemistry of small lakes and streams not included in the National Surface Water Survey (NSWS). This refinement will include examining the importance of natural processes in acidifying surface waters. A system for classifying surface waters at risk or damaged by acid deposition will be developed. Such a system, which predicts the number and area of surface waters on a regional scale which could acidify under various scenarios, should help policy officials understand how changes in acid deposition levels could cause changes to aquatic life. Regional rates of recovery that might result from changes in acid deposition levels will also provide information for the 1990 NAPAP Assessment Report.

Understand and Quantify Terrestrial Effects. This research will focus on how plants, primarily trees, respond chemically and physically to acid deposition through soils and surface waters. In 1989, research will focus on resolving competing hypotheses on forest damage by: (1) determining the extent and magnitude of observed changes in forests; (2) determining forest areas sensitive to increased atmospheric deposition levels; (3) conducting controlled exposure studies in the laboratory and at field sites; (4) monitoring and analyzing cloud chemistry, precipitation and gaseous pollutants at high and low elevations; and (5) determining linkages between aquatic and terrestrial systems. Research will be carried out on spruce/fir, southern pine, eastern hardwoods, and western conifer forests.

Understand and Quantify the Effects on Materials and Cultural Resources. This research will focus on how materials are incrementally damaged from acid deposition. In 1989, major activities include: (1) developing models to determine the damage to paint from acid deposition; (2) assessing the effects of acid deposition on the service life of materials; and (3) identifying the micro/macro effects of acid deposition on specific coating systems.

Evaluate Control Technologies. This research will develop "cost of controls" data to help evaluate acid deposition control strategies. Primary research will continue to assess the engineering applicability and costs of control technologies on acid-forming air pollutants. Site-specific cost estimates from the "top 200" coal-fired power plants in the 31 state eastern region will be completed. Then the "generic costs" of reducing SO₂, NO_x, and VOC air emissions will be updated.

1988 Program

In 1988, the Agency is allocating a total of \$52,102,600 supported by 60.6 total workyears for this research, of which \$4,356,800 is from the Salaries and Expenses appropriation and \$47,745,800 is from the Research and Development appropriation.

In 1988, this research is completing several projects, including an advanced version of the Regional Acid Deposition Model (RADM II), the final 1985 air emissions data base and inventory, the final report on the Pilot Snowfall Monitoring Study, and a report on the Mid-Atlantic/Southeastern U.S. Stream Survey. In addition, work will continue on evaluating the extent and magnitude of changes in forest conditions, as well as on developing site-specific cost estimates for reducing SO₂ and NO_x air emissions.

1987 Accomplishments

In 1987, the Agency obligated a total of \$53,873,300 supported by 63.1 total workyears for this research, of which \$4,257,500 was from the Salaries and Expenses appropriation and \$49,615,800 was from the Research and Development appropriation.

During 1987, the acid deposition research program installed a monitoring network for field evaluation of RADM and expanded the dry deposition monitoring network to include 50 sites. A report on the Western Lake Survey was produced as well as a report on the Mountain Cloud Chemistry Project. Finally, a report on site-specific cost estimates of SO₂ and NO_x controls from 12 coal-fired power plants was produced.

ENVIRONMENTAL ENGINEERING AND TECHNOLOGY

1989 Program Request

The Agency requests a total of \$3,466,700 supported by 20 total workyears, for this research, of which \$1,033,300 will be for the Salaries and Expenses appropriation and \$2,433,400 will be for the Research and Development appropriation. This represents an increase of \$22,100 in the Salaries and Expenses appropriation for a general enhancement of in-house support of the LIMB research program. The decrease of \$73,100 in the Research and Development appropriation reflects completion of some combustion engineering tests of a small prototype tangential-fired furnace.

Develop and Evaluate LIMB Control Technology.

Research will involve activities in four primary areas: (1) pilot-scale testing of LIMB processes; (2) commercial-scale demonstration of the wall-fired boiler technology; (3) commercial-scale demonstration of the tangential-fired boiler technology; and (4) analysis of waste characteristics and disposal from the commercial-scale demonstration of the tangential-fired boiler technology.

In 1989, pilot-scale testing will be broadened to improve SO_x and NO_x removal efficiency and cost effectiveness plus improve sorbent and humidification efficiency. Research on the commercial-scale demonstration of the wall-fired technology will be completed and documented. Research on the commercial-scale demonstration of the tangential-fired boiler technology will complete a small boiler test to provide engineering design and construction parameters for the full scale demonstration. The LIMB commercial-scale demonstrations are jointly funded by the Federal government and the utility industry.

1988 Program

In 1988, the Agency is allocating a total of \$3,517,700 and 20 total workyears for this research, of which \$1,011,200 is from the Salaries and Expenses appropriation and \$2,506,500 is from the Research and Development appropriation.

In 1988, research includes: (1) testing of LIMB processes on a pilot-scale; (2) testing of high activity sorbent injection and mixing characteristics; (3) testing a commercial-scale demonstration of the wall-fired boiler technology at the Edgewater station of Ohio Edison; (4) determining engineering characteristics to design a commercial-scale demonstration of the tangential-fired boiler technology; and (5) monitoring and evaluating waste characteristics and disposal techniques at the commercial-scale wall-fired demonstration. The Department of Energy will provide \$5,000,000 to support the commercial-scale demonstration of the tangential-fired boiler technology.

1987 Accomplishments

In 1987, the Agency obligated a total of \$8,532,800 supported by 21 total workyears for this research, of which \$1,242,500 was from the Salaries and Expenses appropriation and \$7,290,300 was from the Research and Development appropriation.

In 1987, the Agency conducted laboratory and pilot-scale research, prototype testing, commercial-scale evaluation of the wall-fired boiler technology, and commercial-scale planning of the tangential-fired boiler technology. The commercial-scale demonstration of the wall-fired technology was started and SO₂ and NO_x removal objectives were met. A report on the commercialization requirements for LIMB was issued.

ENVIRONMENTAL PROCESSES AND EFFECTS

1989 Program Request

The Agency requests no resources for this research in 1989 since this research was completed in 1987.

1988 Program

In 1988, the Agency did not allocate any resources for this research since this research was completed in 1987.

1987 Accomplishments

In 1987, the Agency obligated \$230,000 for this research, all of which was from the Research and Development appropriation.

In 1987, the Agency concluded research on assessing the impacts of oil and gas development on coastal tundra wetlands. Projects completed were on the: (1) health effects of urban air particulates (wood smoke); (2) air dispersion modeling in the arctic; and (3) ecological impacts of placer mining.

MANAGEMENT
AND SUPPORT

ENVIRONMENTAL PROTECTION AGENCY

1989 Budget Estimate

Table of Contents

	<u>Page</u>
<u>MANAGEMENT & SUPPORT</u>	MS-1
PROGRAM MANAGEMENT	
Program Management.....	MS-8
Program Management - Air & Radiation.....	MS-12
Program Management - Water.....	MS-13
Program Management - Enforcement & Compliance Monitoring.....	MS-13
Program Management - External Affairs.....	MS-14
Program Management - Pesticides & Toxic Substances.....	MS-15
Program Management - General Counsel.....	MS-15
Program Management - Research & Development.....	MS-16
Program Management - Solid Waste & Emergency Response.....	MS-17
AGENCY MANAGEMENT	
Office of the Administrator/Executive Offices.....	MS-19
Immediate Office of the Administrator.....	MS-24
Office of Regional Operations.....	MS-25
Office of Executive Support.....	MS-25
Administrator's Representation Fund.....	MS-26
Office of International Activities.....	MS-26
Office of Civil Rights.....	MS-27
Science Advisory Board.....	MS-28
Office of Administrative Law Judges.....	MS-29
Office of Small & Disadvantaged Business Utilization.....	MS-29
Office of Inspector General.....	MS-31
Office of Inspector General	MS-32
Office of General Counsel.....	MS-34
General Counsel.....	MS-35
Office of External Affairs.....	MS-37
Office of Legislative Analysis.....	MS-41
Office of Congressional Liaison.....	MS-42
Office of Public Affairs.....	MS-42
Office of Community and Intergovernmental Relations.....	MS-43
Office of Federal Activities.....	MS-43
Office of Policy, Planning & Evaluation.....	MS-45
Program Management - Policy, Planning & Evaluation.....	MS-49
Integrated Environmental Management Program.....	MS-49
Office of Policy Analysis.....	MS-50
Office of Standards & Regulations.....	MS-52
Office of Management Systems & Evaluation.....	MS-53
Office of Administration & Resources Management.....	MS-55
Program Management - Administration.....	MS-60
Financial Management - Headquarters.....	MS-61
Office of the Comptroller.....	MS-61
Contracts & Grants Management.....	MS-62
Personnel & Organization Services.....	MS-63
Facilities & Management Services.....	MS-64
Information Systems & Services.....	MS-65
Administrative Management - Title III.....	MS-65
Office of Human Resources Management.....	MS-66

ENVIRONMENTAL PROTECTION AGENCY

1989 Budget Estimate

Table of Contents

	<u>Page</u>
<u>MANAGEMENT & SUPPORT</u>	
REGIONAL MANAGEMENT	
Regional Management.....	MS-69
Resource Management - Regions	MS-72
Financial Management - Regions.....	MS-73
Personnel Management - Regions.....	MS-73
Administrative Management - Regions.....	MS-74
Regional Management.....	MS-75
Regional Counsel.....	MS-75
Planning, Evaluation & Analysis - Regions.....	MS-76
SUPPORT COSTS	
Support Costs.....	MS-79
Professional Training.....	MS-82
Nationwide Support Services.....	MS-82
Headquarters Support Services.....	MS-83
Regional Support Services.....	MS-83
Automated Data Processing Support Costs.....	MS-84
Automated Data Processing Support - Title III.....	MS-85
Lab Support - Research & Development.....	MS-85
Lab Support - Air & Radiation.....	MS-86
Lab Support - Pesticides & Toxic Substances.....	MS-86

MANAGEMENT AND SUPPORT

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988
--	----------------	----------------------------	-----------------	-----------------------------	-----------------	--

(DOLLARS IN THOUSANDS)

APPROPRIATION

Salaries & Expenses	\$320,185.4	\$334,058.0	\$332,075.0	\$332,075.0	\$354,130.0	\$22,055.0
---------------------	-------------	-------------	-------------	-------------	-------------	------------

TOTAL, Program Management	\$320,185.4	\$334,058.0	\$332,075.0	\$332,075.0	\$354,130.0	\$22,055.0
---------------------------	-------------	-------------	-------------	-------------	-------------	------------

PERMANENT WORKYEARS	2,744.4	2,611.0	2,657.3	2,631.0	2,684.1	53.1
---------------------	---------	---------	---------	---------	---------	------

TOTAL WORKYEARS	2,794.3	2,822.0	2,850.7	2,850.7	2,854.7	4.0
-----------------	---------	---------	---------	---------	---------	-----

OUTLAYS	\$286,091.4	\$352,589.9	\$350,012.7	\$350,102.7	\$359,759.9	\$9,747.2
---------	-------------	-------------	-------------	-------------	-------------	-----------

AUTHORIZATION LEVELS	Authorization is by virtue of the Appropriation Act.					
----------------------	--	--	--	--	--	--

MANAGEMENT AND SUPPORT

OVERVIEW AND STRATEGY

Management and Support provides executive direction and policy oversight for all Agency programs, as well as those administrative and support services that are not assigned to a specific program. We will continue our efforts to provide quality legal services, promote technically and economically defensible regulatory and policy alternatives, enhance the public's perception and understanding of the Agency's goals, manage for environmental results, and pursue a focused human resources management effort to build a skilled career environmental workforce.

The major components of this medium are Program Management, Agency Management, Regional Management, and Support Costs.

Program Management includes policy development, program development and oversight, and the associated management activities for the Agency's environmental program offices. These include the Offices of Air and Radiation, Water, Enforcement and Compliance Monitoring, External Affairs, Pesticides and Toxic Substances, General Counsel, Research and Development, and Solid Waste and Emergency Response.

Agency Management includes Agencywide management functions and policy activities.

Policy Direction, through the Executive Offices at Headquarters, consists of the Administrator and Deputy Administrator and their immediate staffs, Regional Operations, Executive Support, Administrator's Representation Fund, International Activities, Civil Rights, Science Advisory Board, Administrative Law Judges, and Small and Disadvantaged Business Utilization.

Policy, Planning and Evaluation is organized into the following components: the Integrated Environmental Management Program and the Offices of Policy Analysis, Standards and Regulations, and Management Systems and Evaluation.

Legal Services for litigation in which the Agency is a defendant are provided to Agency programs by the General Counsel in Headquarters and by a Regional Counsel in each Regional office. The Office of General Counsel (OGC) provides legal services and advice to the Administrator and Agency managers. OGC, in cooperation with the Department of Justice, represents the Agency in all legal matters in which the Agency is a defendant. Additionally, OGC reviews proposed actions, decisions, and regulations to assure that they are legally defensible.

External Affairs activities are performed by five component offices: Legislative Analysis, Congressional Liaison, Public Affairs, Office of Community and Intergovernmental Liaison, and Federal Activities.

Inspector General activities include investigation and audit of Agency activities to promote efficiency and effectiveness, and to prevent and detect fraud, waste, and abuse.

Administration and Resources Management provides management activities in Headquarters, as well as administrative services to all program operations located in Cincinnati, Ohio and Research Triangle Park, North Carolina. The office has several components: Program Management, Financial Management, Comptroller, Personnel and Organization, Contracts and Grants, Facilities and Management Services, Information Systems and Services, and Human Resources Management.

Regional Management includes the centralized management and administrative functions performed in each Regional office. The Regional elements cover the Regional and Deputy Regional Administrators, their immediate staffs, and Regional staff for public affairs, congressional and intergovernmental relations, and civil

rights. Other activities include budget development and execution, preparation of Regional operating plans, legal services, program planning, regulatory and policy analysis, economic analysis, program evaluation, financial and personnel management, information management, administration of Freedom of Information Requests, and facilities and property management.

Support Costs include the costs of general support services for all Agency programs. In this diverse category are:

- ° Office and building services, such as library services, commercial telephone use, printing and copying, utilities, security, ADP technical support, and custodial and maintenance services for programs located at Headquarters, Research Triangle Park, and Cincinnati;
- ° Nationwide costs, such as facility rental costs, centralized data processing, professional training, U.S. Postal Service charges, Federal Telecommunications System (FTS) charges, unemployment and workmen's compensation, and health and safety costs for all Agency programs in all locations;
- ° Office and building services for laboratories and field stations operated by the Offices of Air and Radiation, Research and Development, and Pesticides and Toxic Substances; and
- ° Common services in Regional offices, such as supplies and equipment, commercial telephones, printing, facilities operations and maintenance, library services, and mini-computer operations.

Program Priorities

Priorities for the Executive Offices in 1989 will include: continued emphasis on enforcement and compliance efforts for both environmental and civil rights regulations; stronger support from Headquarters and Regions to small, minority, and women's environmental businesses; bringing greater scientific credibility to regulatory decision-making through an emphasis on reviews by the Science Advisory Board; more effective communication between Headquarters and the Regions; continued support for technology transfer and technical information exchange between EPA Headquarters, Regions, States local government and industry; and continued international environmental Activities with emphasis on global and regional air pollution issues such as global climate change and acid precipitation.

The Office of Policy, Planning and Evaluation will continue to emphasize risk reduction and the targetting of resources to projects that support the program offices in developing and deploying the concept of risk in the Regions and States. It will undertake an ambitious program to ensure that the Regions and States have the necessary tools to practice environmental planning and management from the most practical, cross-media, and risk-based perspective possible. It will develop tools for assessing and reducing ecological risk and communicating risk inside and outside of EPA. The office's major commitment to evaluating global climate change issues also will continue as it seeks to address deficiencies in the existing science and analytical framework so that policy options can be understood and weighed.

The Office of General Counsel will continue to provide legal advice and counsel to the Agency's top management and media program offices concerning legal interpretation of EPA administered statutes, other applicable laws, and on such matters as personnel, grants, and contracts. Additionally, the Office of General Counsel will continue to represent the Agency in all major regulatory actions, and ensure that legal errors are avoided and legal positions are presented in the most persuasive manner.

The Office of External Affairs will continue to provide a clear interpretation of EPA's programs and priorities; increase Agency effectiveness by improving Congressional liaison; continue effective liaison with State and local governments; establish outreach programs with the private and public sector and involve citizen participation; reaffirm and strengthen Federal Agency contacts; and provide a cross-media perspective in review of environmental problems.

The Office of Inspector General will continue to emphasize internal and management audits to improve the economy, effectiveness, and efficiency of EPA programs and provide audit coverage to EPA programs and operations which have received little or no audit coverage in the past. It will provide limited audit coverage for the wastewater treatment construction grant program and EPA contracts and other grant programs. The office will continue its investigation of antitrust activities and other construction-related fraud and will aggressively pursue new initiatives to ferret out fraud in EPA-funded contracts. It will further its efforts in fraud prevention by publicizing its activities to EPA employees, identifying areas sensitive to fraud, and developing new fraud detection methods.

The Office of Administration and Resources Management will continue to assure a strong system of financial internal controls, including work toward integration and improvement of all Agency financial management and accounting systems; continue developing a program for better information management planning, particularly between EPA and States; continue improvements in contracts administration; pursue a focused human resources management effort to build a skilled career environmental workforce; continue to achieve significant productivity improvements; continue to provide essential administrative and support services to enhance the Agency's ability to fulfill its various mandates and pursue the privatization effort.

In the Regional management areas, the Agency will continue its commitment to strengthen Regional environmental programs and maintain strong Regional planning and management efforts. Development of State/EPA data management plans to improve efficiency and reliability of methods for sharing environmental data will receive priority attention.

In Support, the program will continue to provide general support services to Agency programs. This request will also enable the Agency to continue its effort to replace obsolete computers in the Regional offices, as well as cover cost escalations such as rent, telephone, and utility rate increases.

ENVIRONMENTAL PROTECTION AGENCY

1989 Budget Estimate

Table of Contents

	<u>Page</u>
<u>MANAGEMENT & SUPPORT</u>	
PROGRAM MANAGEMENT	
Program Management.....	MS-8
Program Management - Air & Radiation.....	MS-12
Program Management - Water.....	MS-13
Program Management - Enforcement & Compliance Monitoring.....	MS-13
Program Management - External Affairs.....	MS-14
Program Management - Pesticides & Toxic Substances.....	MS-15
Program Management - General Counsel.....	MS-15
Program Management - Research & Development.....	MS-16
Program Management - Solid Waste & Emergency Response.....	MS-17

PROGRAM MANAGEMENT
Program Management

ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1998	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988
----------------	----------------------------	-----------------	-----------------------------	-----------------	--

(DOLLARS IN THOUSANDS)

PROGRAM

Program Management -
Air And Radiation
Salaries & Expenses

TOTAL	\$2,986.6	\$3,214.8	\$2,962.3	\$2,962.3	\$2,991.9	\$29.6
	\$2,986.6	\$3,214.8	\$2,962.3	\$2,962.3	\$2,991.9	\$29.6

Program Management -
Water
Salaries & Expenses

TOTAL	\$2,812.2	\$3,077.2	\$2,684.8	\$2,684.8	\$2,859.3	\$174.5
	\$2,812.2	\$3,077.2	\$2,684.8	\$2,684.8	\$2,859.3	\$174.5

Program Management -
Enforcement And
Compliance Monitoring
Salaries & Expenses

TOTAL	\$472.1	\$485.6	\$478.9	\$478.9	\$478.9	
	\$472.1	\$485.6	\$478.9	\$478.9	\$478.9	

Program Management -
External Affairs
Salaries & Expenses

TOTAL	\$628.6	\$714.3	\$687.5	\$687.5	\$718.5	\$31.0
	\$628.6	\$714.3	\$687.5	\$687.5	\$718.5	\$31.0

Program Management -
Pesticides and Toxic
Substances
Salaries & Expenses

TOTAL	\$2,097.9	\$2,472.1	\$2,387.4	\$2,387.4	\$2,477.7	\$90.3
	\$2,097.9	\$2,472.1	\$2,387.4	\$2,387.4	\$2,477.7	\$90.3

Program Management -
General Counsel
Salaries & Expenses

TOTAL	\$453.8	\$509.8	\$489.8	\$489.8	\$489.8	
	\$453.8	\$509.8	\$489.8	\$489.8	\$489.8	

PROGRAM MANAGEMENT
Program Management

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988
--	----------------	----------------------------	-----------------	-----------------------------	-----------------	--

(DOLLARS IN THOUSANDS)

Program Management -
Research & Development
Salaries & Expenses

	\$5,003.1	\$4,024.2	\$3,903.7	\$3,903.7	\$4,041.0	\$137.3
TOTAL	\$5,003.1	\$4,024.2	\$3,903.7	\$3,903.7	\$4,041.0	\$137.3

Program Management -
Solid Waste and
Emergency Response
Salaries & Expenses

	\$1,870.7	\$1,725.1	\$1,670.4	\$1,670.4	\$1,696.5	\$26.1
TOTAL	\$1,870.7	\$1,725.1	\$1,670.4	\$1,670.4	\$1,696.5	\$26.1

TOTAL:
Salaries & Expenses

	\$16,325.0	\$16,223.1	\$15,264.8	\$15,264.8	\$15,753.6	\$488.8
--	------------	------------	------------	------------	------------	---------

Program Management

TOTAL	\$16,325.0	\$16,223.1	\$15,264.8	\$15,264.8	\$15,753.6	\$488.8
-------	------------	------------	------------	------------	------------	---------

PERMANENT WORKYEARS

Program Management -
Air And Radiation

	45.1	46.8	46.8	46.8	46.8
--	------	------	------	------	------

Program Management -
Water

	42.9	46.4	46.4	45.9	45.9
--	------	------	------	------	------

Program Management -
Enforcement And
Compliance Monitoring

	7.6	9.0	9.0	9.0	9.0
--	-----	-----	-----	-----	-----

Program Management -
External Affairs

	9.6	11.7	11.7	11.7	11.7
--	-----	------	------	------	------

Program Management -
Pesticides and Toxic
Substances

	33.2	43.3	43.3	43.1	42.9	-.2
--	------	------	------	------	------	-----

PROGRAM MANAGEMENT
Program Management

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988

(DOLLARS IN THOUSANDS)						
Program Management - General Counsel	8.7	10.5	10.5	8.2	10.5	2.3
Program Management - Research & Development	50.9	54.5	54.5	53.8	54.5	.7
Program Management - Solid Waste and Emergency Response	32.2	30.0	30.0	29.6	29.6	
TOTAL PERMANENT WORKYEARS	230.2	252.2	252.2	248.1	250.9	2.8
TOTAL WORKYEARS	-----					
Program Management - Air And Radiation	47.7	46.8	46.8	46.8	46.8	
Program Management - Water	46.1	46.4	46.4	45.9	45.9	
Program Management - Enforcement And Compliance Monitoring	8.6	9.0	9.0	9.0	9.0	
Program Management - External Affairs	10.7	11.7	11.7	11.7	11.7	
Program Management - Pesticides and Toxic Substances	34.5	43.3	43.3	43.1	42.9	-.2
Program Management - General Counsel	10.0	10.5	10.5	10.5	10.5	

MS-10

PROGRAM MANAGEMENT
Program Management

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988

(DOLLARS IN THOUSANDS)						
Program Management - Research & Development	53.2	54.5	54.5	53.8	54.5	.7
Program Management - Solid Waste and Emergency Response	35.8	30.0	30.0	29.6	29.6	
TOTAL WORKYEARS	246.6	252.2	252.2	250.4	250.9	.5

MANAGEMENT & SUPPORT

Program Management

Budget Request

The Agency requests a total of \$15,753,600 supported by 250.9 total workyears for 1989, an increase of \$488,800 and of .5 total workyears from 1988. All of the request is for the Salaries and Expenses appropriation.

Program Description

The Program Management component provides resources for Assistant Administrators, Office Directors and their immediate staffs for eight of EPA's major offices: Air and Radiation, Water, Enforcement and Compliance Monitoring, External Affairs, Pesticides and Toxic Substances, General Counsel, Research and Development, and Solid Waste and Emergency Response. Resources provide for formulation of overall management and programmatic policy, and centralized planning and budgeting activities. Also includes the coordination and integration of programs throughout the Agency as well as performing liaison activities with Congress, the Office of Management and Budget and other Federal agencies and States.

PROGRAM MANAGEMENT - AIR AND RADIATION

1989 Program Request

The Agency requests a total of \$2,991,900 supported by 46.8 total workyears for this program, all of which will be for the Salaries and Expenses appropriation. This represents an increase of \$29,600 in the Salaries and Expenses appropriation and no change in total workyears. The increase reflects increased operating and support costs. Major program emphases will continue to be implementation of the Clean Air Act Amendments of 1977, the Atomic Energy Act, the Uranium Mill Tailings Radiation Control Act, and development of major decisions related to these acts.

1988 Program

In 1988 the Agency is allocating a total of \$2,962,300 supported by 46.8 total workyears for this program, all of which is from the Salaries and Expenses appropriation. This program provides management support for implementation of the Clean Air Act, the Atomic Energy Act, and the Uranium Mill Tailings Radiation Control Act. Key activities include: executive management, program planning and analysis, resource management, and budget development. Administrative support to Office of Air and Radiation (OAR) programs is also provided.

1987 Accomplishments

In 1987 the Agency obligated \$2,986,600 for this program supported by 47.7 workyears, all of which was from the Salaries and Expenses appropriation. The program provided executive management, program planning and analysis, budget, and administrative support to OAR programs.

PROGRAM MANAGEMENT - WATER

1989 Program Request

The Agency requests a total of \$2,859,300 supported by 45.9 total workyears for this program, all of which will be for the Salaries and Expenses appropriation. This represents an increase of \$174,500 from 1988 and no change in total workyears. The increase provides a full year of support for the Office of Wetlands Protection created in 1987 as well as increased operating costs.

The 1989 request supports the development of national policy and implementation of the national regulatory programs for the Water Quality and Drinking Water media. Specific activities include: management of the Office of Water operating guidance and accountability system; development of program plans and budget for implementation of Agency policies; development of legislative initiatives and directions and review of regulations and program policies; support to Agency geographic initiatives for cross-media regulatory control and environmental results management; and tracking of budget execution and administrative management.

1988 Program

In 1988, the Agency is allocating a total of \$2,684,800 supported by 45.9 total workyears, all of which is from the Salaries and Expenses appropriation. The program continues to focus in 1988 on the implementation of the reauthorized Clean Water Act. Activities such as long-range planning and policy analysis, budget development and execution, and administrative management will remain ongoing activities.

1987 Accomplishments

In 1987, the Agency obligated \$2,812,200 supported by 46.1 total workyears, all of which was from the Salaries and Expenses appropriation. These resources provided for executive management, policy and long-range planning and analysis, and budget and administrative support for programs within the Office of Water. Work continued on the implementation of the reauthorized Clean Water Act and the Safe Drinking Water Act.

PROGRAM MANAGEMENT - ENFORCEMENT AND COMPLIANCE MONITORING

1989 Program Request

The Agency requests a total of \$478,900 supported by 9.0 total workyears for this program, all of which will be for the Salaries and Expenses appropriation. This represents no change from 1988.

This request will be used to provide basic administrative, financial and management services to the Office of Enforcement and Compliance Monitoring. These functions include: program planning, personnel management, budgeting, financial management, management analysis and administrative services. The resources will also be used to continue to provide support and oversight of the management operations of the National Enforcement Investigations Center (NEIC). These resources will also provide support to perform budget formulation and execution for the legal enforcement functions of the ten Regional Counsels.

1988 Program

In 1988, the Agency is allocating a total of \$478,900 supported by 9.0 total workyears for this program, all of which is from the Salaries and Expenses appropriation.

This program provides program direction and management support for the Office of Enforcement and Compliance Monitoring (OECM). In addition to supporting the Assistant Administrator, it includes the OECM management operations functions. The Management Operations staff is responsible for the internal program planning, budget formulation, financial management, and administrative operations for the entire Office of Enforcement and Compliance Monitoring as well as budget formulation and execution for the enforcement functions of the ten Regional Counsels.

1987 Accomplishments

In 1987, the Agency obligated \$472,100 supported by 8.6 total workyears for this program, all of which was from the Salaries and Expenses appropriation.

In 1987, this program provided basic managerial support for program planning, personnel, budget, financial management, and administrative support services to the Assistant Administrator. In addition, budget formulation support was provided to the NEIC, Regional Legal Enforcement, and the expanding and increasingly visible Criminal Investigation program. In 1987, emphasis on improving management systems continued. Many of these systems were automated to provide more consistent and timely information for use in enforcement management.

PROGRAM MANAGEMENT - EXTERNAL AFFAIRS

1989 Program Request

The Agency requests a total of \$718,500 supported by 11.7 total workyears, for this program, all of which will be for the Salaries and Expenses appropriation. This represents an increase of \$31,000 and no change in total workyears from 1988. The increase will provide for increased operating costs. In 1989, this office will continue the full coordination of the staff offices in External Affairs; provide the necessary oversight, management, planning, and support services to these staff offices; and support the Administrator and Assistant Administrators in coordinating, representing and communicating the Agency's programs and policies to the Congress, the public, other government entities, and the news media, as well as involving the Congress, public, government entities and the news media in providing input into the Agency's policies.

1988 Program

In 1988, the Agency is allocating a total of \$687,500 supported by 11.7 total workyears for this program, all of which is from the Salaries and Expenses appropriation. Continued emphasis is placed on strengthening strategies and procedures for communicating better with outside groups by informing affected parties in a timely manner about EPA actions and the decisions and risks the Agency must face.

1987 Accomplishments

In 1987, the Agency obligated a total of \$628,600 supported by 10.7 total workyears for this program, all of which was from the Salaries and Expenses appropriation. In 1987, the office worked to enhance a process to communicate more effectively with the public and outside groups. This program element also provided the management resources and administrative support necessary to support the Office of External Affairs and staff offices.

PROGRAM MANAGEMENT - PESTICIDES AND TOXIC SUBSTANCES

1989 Program Request

The Agency requests a total of \$2,477,700 supported by 42.9 total workyears for this program, all of which will be from the Salaries and Expenses appropriation. This represents an increase of \$90,300 and a decrease .2 total workyears from 1988.

These increased operating costs will fully support the Biotechnology Science Advisory Committee as well as support senior level management of the Pesticides and Toxic Substances program and the Immediate Office of the Assistant Administrator for Pesticides and Toxic Substances. Key activities include: efficient and effective general management, strategic planning, and administrative and budget support.

1988 Program

In 1988, the Agency is allocating a total of \$2,387,400 supported by 43.1 total workyears, all of which is from the Salaries and Expenses appropriation. These resources provide senior level management of the Pesticides and Toxic Substances programs and the Immediate Office of the Assistant Administrator for Pesticides and Toxic Substances with support as well as partially funding, along with the Office of Research and Development, the activities of the Biotechnology Science Advisory Committee.

1987 Accomplishments

In 1987 the Agency obligated a total of \$2,097,900 supported by 34.5 total workyears, all of which was from the Salaries and Expenses appropriation. These resources provide support for the senior level management of the Pesticides and Toxic Substances programs and the Immediate Office of the Assistant Administrator for Pesticides and Toxic Substances and, along with the Office of Research and Development, funded the activities of the Biotechnology Science Advisory Committee.

PROGRAM MANAGEMENT - GENERAL COUNSEL

1989 Program Request

The Agency requests a total of \$489,800 supported by 10.5 total workyears for this program, all of which will be for the Salaries and Expenses appropriation. This represents no change from 1988.

The request will support planning, budgeting, financial management, management analysis, and administrative services to the Office of General Counsel.

1988 Program

In 1988, the Agency is allocating a total of \$489,800 supported by 10.5 total workyears for this program, all of which is from the Salaries and Expenses appropriation.

The program provides for planning, budgeting, financial management, management analysis, and administrative support to the Office of General Counsel.

1987 Accomplishments

In 1987, the Agency obligated a total of \$453,800 supported by 10.0 total workyears for this program, all of which was from the Salaries and Expenses appropriation.

Activities focused on providing planning, analytical support, budgeting, financial management, and administrative services to the Office of General Counsel.

PROGRAM MANAGEMENT - RESEARCH AND DEVELOPMENT

1989 Program Request

The Agency requests a total of \$4,041,000 supported by 54.5 total workyears, all for the Salaries and Expenses Appropriation. This represents an increase of \$137,300 and 0.7 total workyears from 1988. The increase reflects a general enhancement of in-house support for program management activities of the Office of Research and Development (ORD).

In 1989, ORD's program management activities will provide policy guidance, program direction, and administrative support to a diversified research and development (R&D) program which is conducted in Headquarters, 14 major laboratories, and seven (7) field sites across the country. These program management activities ensure both coordination of R&D efforts and efficient utilization of resources to meet the Agency's R&D requirements and program needs. Specific activities include:

1. formulating and disseminating scientific and managerial policy for and within ORD;
2. coordinating R&D program planning and budgeting, program plans and development of research strategies for a balanced and integrated R&D program;
3. monitoring and analyzing current year resources, research operations and research products;
4. providing liaison with regional, state, and local officials for technical assistance, in addition to working with Congress, OMB, and other Federal agencies; and
5. operating and maintaining ORD's information systems which support R&D program planning and accountability for senior Agency management.

1988 Program

In 1988, the Agency is allocating a total of \$3,903,700 supported by 53.8 total workyears, all from the Salaries and Expenses Appropriation. Program management will continue to guide, manage, and integrate the research and development activities of the Agency, ensuring that the needs identified by programs and Regional Offices are met.

1987 Accomplishments

The Agency obligated a total of \$5,003,100 supported by 53.2 total workyears in 1987, all of which was from the Salaries and Expenses Appropriation. These resources provided the overall policy guidance, program direction, and administrative support for the Agency's diverse research and development program.

PROGRAM MANAGEMENT - SOLID WASTE AND EMERGENCY RESPONSE

1989 Program Request

The Agency requests a total of \$1,696,500 supported by 29.6 total workyears, all of which will be for the Salaries and Expenses appropriation. This represents an increase of \$26,100 and no change in workyears from 1988. The increase reflects additional operating and support costs.

This request will allow the Agency to continue to staff and operate a complete management team within the Office of Solid Waste and Emergency Response (OSWER). This will provide for a wide array of policy development and analysis activities, institutional and public liaison functions, financial management, and other program support activities necessary to ensure the effective operation of a national program.

1988 Program

In 1988, the Agency is allocating a total of \$1,670,400 supported by 29.6 total workyears, all of which is from the Salaries and Expenses appropriation. This level of resources provides for a wide range of support from the OSWER management team to the Regions, to the program offices, and to the Agency. Expected accomplishments include the review of policy recommendations and proposed regulations; integration of both program and enforcement hazardous waste and Superfund activities; budget preparation and justification; financial and information management; real and personal property management; and administrative support.

1987 Accomplishments

In 1987, the Agency obligated a total of \$1,870,700 supported by 35.8 total workyears, all of which was from the Salaries and Expenses appropriation. OSWER program management integrated hazardous waste and Superfund activities; managed the review of policy recommendations and proposed regulations; maintained effective management controls; and provided personnel, administrative and information management support to the program offices.

ENVIRONMENTAL PROTECTION AGENCY

1989 Budget Estimate

Table of Contents

	<u>Page</u>
<u>MANAGEMENT & SUPPORT</u>	
AGENCY MANAGEMENT	
Office of the Administrator/Executive Offices.....	MS-19
Immediate Office of the Administrator.....	MS-24
Office of Regional Operations.....	MS-25
Office of Executive Support.....	MS-25
Administrator's Representation Fund.....	MS-26
Office of International Activities.....	MS-26
Office of Civil Rights.....	MS-27
Science Advisory Board.....	MS-28
Office of Administrative Law Judges.....	MS-29
Office of Small & Disadvantaged Business Utilization.....	MS-29
Office of Inspector General.....	MS-31
Office of Inspector General	MS-32
Office of General Counsel.....	MS-34
General Counsel.....	MS-35
Office of External Affairs.....	MS-37
Office of Legislative Analysis.....	MS-41
Office of Congressional Liaison.....	MS-42
Office of Public Affairs.....	MS-42
Office of Community and Intergovernmental Relations.....	MS-43
Office of Federal Activities.....	MS-43
Office of Policy, Planning & Evaluation.....	MS-45
Program Management - Policy, Planning & Evaluation.....	MS-49
Integrated Environmental Management Program.....	MS-49
Office of Policy Analysis.....	MS-50
Office of Standards & Regulations.....	MS-52
Office of Management Systems & Evaluation.....	MS-53
Office of Administration & Resources Management.....	MS-55
Program Management - Administration.....	MS-60
Financial Management - Headquarters.....	MS-61
Office of the Comptroller.....	MS-61
Contracts & Grants Management.....	MS-62
Personnel & Organization Services.....	MS-63
Facilities & Management Services.....	MS-64
Information Systems & Services.....	MS-65
Administrative Management - Title III.....	MS-65
Office of Human Resources Management.....	MS-66

AGENCY MANAGEMENT

Office of the Administrator/Executive Offices

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988
(DOLLARS IN THOUSANDS)						

PROGRAM						

Immediate Office of the Administrator						
Salaries & Expenses	\$2,188.1	\$2,381.1	\$2,315.5	\$2,315.5	\$2,363.3	\$47.8
TOTAL	\$2,188.1	\$2,381.1	\$2,315.5	\$2,315.5	\$2,363.3	\$47.8
Office of Regional Operations						
Salaries & Expenses	\$364.3	\$387.0	\$536.7	\$536.7	\$536.7	
TOTAL	\$364.3	\$387.0	\$536.7	\$536.7	\$536.7	
Office Of Executive Support						
Salaries & Expenses	\$868.8	\$931.4	\$1,003.0	\$1,003.0	\$1,003.0	
TOTAL	\$868.8	\$931.4	\$1,003.0	\$1,003.0	\$1,003.0	
Administrator's Representation Fund						
Salaries & Expenses	\$2.3	\$3.5	\$3.0	\$3.0	\$3.0	
TOTAL	\$2.3	\$3.5	\$3.0	\$3.0	\$3.0	
Office of International Activities						
Salaries & Expenses	\$1,274.9	\$1,329.6	\$1,315.6	\$1,315.6	\$1,440.6	\$125.0
TOTAL	\$1,274.9	\$1,329.6	\$1,315.6	\$1,315.6	\$1,440.6	\$125.0
Office of Civil Rights						
Salaries & Expenses	\$1,264.3	\$1,438.6	\$1,410.6	\$1,410.6	\$1,436.9	\$26.3
TOTAL	\$1,264.3	\$1,438.6	\$1,410.6	\$1,410.6	\$1,436.9	\$26.3

AGENCY MANAGEMENT

Office of the Administrator/Executive Offices

		ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988

(DOLLARS IN THOUSANDS)							
Science Advisory Board							
Salaries & Expenses		\$1,393.1	\$1,447.8	\$1,416.7	\$1,416.7	\$1,446.3	\$29.6
	TOTAL	\$1,393.1	\$1,447.8	\$1,416.7	\$1,416.7	\$1,446.3	\$29.6
Office of Administrative Law Judges							
Salaries & Expenses		\$837.7	\$1,056.3	\$1,035.8	\$1,035.8	\$1,054.9	\$19.1
	TOTAL	\$837.7	\$1,056.3	\$1,035.8	\$1,035.8	\$1,054.9	\$19.1
Office of Small & Disadvantaged Business Utilization							
Salaries & Expenses		\$466.2	\$525.0	\$516.6	\$516.6	\$516.6	
	TOTAL	\$466.2	\$525.0	\$516.6	\$516.6	\$516.6	
TOTAL:							
Salaries & Expenses		\$8,659.7	\$9,500.3	\$9,553.5	\$9,553.5	\$9,801.3	\$247.8
Office of the Admini- strator/Executive Offices	TOTAL	\$8,659.7	\$9,500.3	\$9,553.5	\$9,553.5	\$9,801.3	\$247.8

PERMANENT WORKYEARS

Immediate Office Of The Administrator	33.8	45.8	45.8	41.7	44.7	3.0
Office of Regional Operations	5.0	5.0	5.0	10.0	10.0	
Office Of Executive Support	21.5	24.8	24.8	24.1	24.1	

AGENCY MANAGEMENT

Office of the Administrator/Executive Offices

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988
----- (DOLLARS IN THOUSANDS) -----						
Office of International Activities	22.4	22.0	22.0	20.5	21.5	1.0
Office of Civil Rights	20.1	23.8	23.8	22.1	23.1	1.0
Science Advisory Board	12.1	24.4	24.4	14.6	24.4	9.8
Office of Administrative Law Judges	15.6	16.6	17.4	16.8	17.4	.6
Office of Small & Disadvantaged Business Utilization	6.8	6.9	6.9	6.9	6.9	
TOTAL PERMANENT WORKYEARS	137.3	169.3	170.1	156.7	172.1	15.4
TOTAL WORKYEARS -----						
Immediate Office Of The Administrator	36.2	45.8	45.8	44.7	44.7	
Office of Regional Operations	5.4	5.0	5.0	10.0	10.0	
Office Of Executive Support	22.7	24.8	24.8	24.1	24.1	
Office of International Activities	22.6	22.0	22.0	21.5	21.5	
Office of Civil Rights	22.6	23.8	23.8	23.1	23.1	

AGENCY MANAGEMENT

Office of the Administrator/Executive Offices

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988

	(DOLLARS IN THOUSANDS)					
Science Advisory Board	21.5	24.4	24.4	24.4	24.4	
Office of Administrative Law Judges	15.6	16.6	17.4	17.4	17.4	
Office of Small & Disadvantaged Business Utilization	6.8	6.9	6.9	6.9	6.9	
TOTAL WORKYEARS	153.4	169.3	170.1	172.1	172.1	

MANAGEMENT AND SUPPORT

Agency Management

Office of the Administrator/Executive Offices

Budget Request

The Agency requests a total of \$9,801,300 supported by 172.1 total workyears in 1989. This represents an increase of \$247,800 and no change in total workyears from 1988. All of the request will be for the Salaries and Expenses appropriation.

Program Description

These resources support the Immediate Office of the Administrator and the staff offices which report directly to the Administrator. The Administrator and Deputy Administrator are responsible for providing policy guidance and direction to the Agency and ensuring implementation of their policies; the staff offices provide cross-cutting Agency guidance for scientific review of regulations and research, international environmental initiatives, as well as civil rights, administrative law hearings, Regional communication, and support for small and disadvantaged businesses.

Immediate Office of the Administrator -- This Office includes the Administrator and Deputy Administrator, special assistants to the Administrator and Deputy Administrator for the various program areas, Judicial Officers, and clerical support staff.

Office of Regional Operations -- This Office provides Headquarters with a stronger and more effective link to each of the ten Regional offices. This link ensures that the Administrator's policies are effectively communicated to the Regional Administrators, that the Regions are included in the policy-making process, that the Administrator is alerted to any potential Regional problems and concerns, and that significant Regional issues are coordinated with Headquarters program offices. The Office is also responsible for managing the Environmental Service Divisions, Regional risk assessment efforts, and the Technology Transfer program.

Office of Executive Support -- This Office provides centralized budget planning and implementation, resource management, personnel, computer planning, and administrative support services to the Administrator and staff offices and manages the Agency's correspondence and the Freedom of Information functions.

Administrator's Representation Fund -- The fund is used for official receptions, meetings, and affairs hosted primarily by the Administrator for domestic and foreign officials.

Office of International Activities -- This Office provides guidance and management for the Agency's international activities and programs with Western European countries, the USSR, China, Japan, and the Agency's Scientific Activities Overseas (SAO) Program. In addition, the Office manages agreements with Canada and Mexico on cross-boundary environmental issues, oversees Agency involvement in the activities of international organizations, and coordinates the activities on new and emerging environmental issues such as ozone and transboundary shipment of hazardous waste.

Office of Civil Rights -- This Office manages the Agency's civil rights programs. It provides policy guidance to the Administrator and evaluates activities required to carry out the Agency's responsibilities to assure equal opportunity and to prohibit discrimination in employment at EPA.

Science Advisory Board (SAB) -- The Board consists of a Director, professional and clerical staff, and independent scientists and engineers who advise the Administrator on the scientific and technical bases of the Agency's decisions. They review the scientific basis of regulatory proposals, the adequacy of Agency research and the research planning process, the five-year research and development plan, as well as special requests from the Administrator, the Deputy Administrator and the Congress.

Office of Administrative Law Judges -- Judges from this Office preside over and conduct hearings required by the Administrative Procedures Act which relate to appeals of Agency regulations and decisions.

Office of Small and Disadvantaged Business Utilization -- This Office provides Agency-wide oversight in implementing programs under Sections 8 and 15 of the Small Business Act, as amended, and develops national policy for EPA for implementing the Agency-wide minority and women's business enterprise program.

IMMEDIATE OFFICE OF THE ADMINISTRATOR

1989 Program Request

The Agency requests a total of \$2,363,300 and 44.7 total workyears for this program, all of which is for the Salaries and Expenses appropriation. This represents an increase of \$47,800 and no change in total workyears from 1988. The increase will provide for increased operating costs. The Office is responsible for Agency policy and direction, leadership, and management and setting environmental goals. In 1989, emphasis will be put on the Judicial Officer function to meet the expanding number of environmental cases sent to the Administrator for final decision. New authorities under the program Fraud Civil Remedies Act of 1986 and the Water Quality Act of 1987 will also be supported by the Judicial Officer in 1989.

1988. Program

In 1988, the Agency is allocating a total of \$2,315,500 supported by 44.7 total workyears for this program, all of which is from the Salaries and Expenses appropriation. The major priorities in the Immediate Office are: increased emphasis on enforcement and compliance efforts of both environmental and civil rights regulations, continued delegations to State and local governments, and continued support of enhanced science as a basis for decision-making. In 1988, the number of Resource Conservation and Recovery Act Permits and Civil Penalty Cases have increased substantially.

1987 Accomplishments

In 1987, the Agency obligated a total of \$2,188,100 supported by 36.2 total workyears for this program, all of which was from the Salaries and Expenses appropriation. The major focus of activity was to pursue delegation of programs to state and local governments, support enhanced science as a basis for decision-making and managing risk, and enforcement and compliance efforts to ensure better internal management.

OFFICE OF REGIONAL OPERATIONS

1989 Program Request

The Agency requests a total of \$536,700 supported by 10.0 total workyears for this program, all of which is for the Salaries and Expenses appropriation. This represents no change from 1988. The Office will continue to ensure that the Administrator's policies are effectively communicated to the Regional Administrators; that the Administrator is alerted to potential Regional problems and concerns; and that the Administrator is assisted in managing significant Regional issues. The Office will also continue to address the basic management needs of the Environmental Services Divisions, Regional risk assessment, and will continue its technology transfer effort and technical information exchange between EPA Headquarters, Regions, States, local government and industry.

1988 Program

In 1988, the Agency is allocating a total of \$536,700 and 10.0 total workyears, all of which is from the Salaries and Expenses appropriation. The Office continues to provide a key communications link between the Administrator and the ten Regional offices, and play a more active part in Regional budget issues. The Office also has put emphasis on providing guidance and coordination for the ten Environmental Services Divisions. In addition, the Office has initiated a new effort aimed at achieving improved efficiency and performance in environmental programs in the field by providing better technology transfer and technical information exchange between EPA Headquarters, Regions, States, local government, and industry.

1987 Accomplishments

In 1987, the Agency obligated a total of \$364,300 and 5.4 total workyears for this program, all of which was from the Salaries and Expenses appropriation. The Office ensured that the Administrator's policies were effectively communicated to the Regional Administrators, that the Regions were included in the policy-making and decision-making processes, and that the Administrator was kept informed of Regional concerns and issues. In addition, the Office carried out its responsibility as the Headquarters focal point for the Agency's Environmental Services Divisions.

OFFICE OF EXECUTIVE SUPPORT

1989 Program Request

The Agency requests a total of \$1,003,000 supported by 24.1 total workyears for this program, all of which is for the Salaries and Expenses appropriation. This represents no change from 1988. This Office will continue to provide monitoring of resource expenditures, develop the outyear budget for the staff offices, provide centralized personnel and management support services, and provide assistance to staff offices with recruitment, staffing, and property control. The Office will continue to prepare a yearly report to Congress on the cost to the Agency and to the public of administering the Freedom of Information Act, to provide policy and program oversight on the Freedom of Information program, and to manage and track executive and Congressional correspondence.

1988 Program

In 1988, the Agency is allocating a total of \$1,003,000 supported by 24.1 total workyears for this program, all of which is from the Salaries and Expenses appropriation. The Office is responsible for monitoring resource expenditures, developing the outyear budget for the staff offices, providing centralized personnel and management support services, and providing assistance to staff offices with recruitment, staffing, and property control. The Office continues to prepare a yearly report to Congress on the cost to the Agency and to the public of administering the Freedom of Information Act, to provide policy and program oversight on the Freedom of Information Act, and to manage and track executive and Congressional correspondence.

1987 Accomplishments

In 1987, the Agency obligated a total of \$868,800 supported by 22.7 total workyears for this program, all of which was from the Salaries and Expenses appropriation. The Office completed monthly financial and operating plan reports, developed the outyear budget for the staff offices, and workload analysis for Regional Management, in addition to providing assistance and staffing plan development, program management services, and resource and computer planning studies for the Administrator's staff offices. The Office logged, controlled and tracked all Freedom of Information requests, Congressional correspondence, and correspondence addressed to the Administrator and the Deputy Administrator.

ADMINISTRATOR'S REPRESENTATION FUND

1989 Program Request

The Agency requests a total of \$3,000 for this program, all of which is for the Salaries and Expenses appropriation. This represents no change from 1988. This fund will enable the Administrator to host official receptions, meetings, and affairs for visiting dignitaries and officials.

1988 Program

In 1988, the Agency is allocating a total of \$3,000 to this program, all of which is from the Salaries and Expenses appropriation. These funds are to cover the expenses of official receptions and other functions.

1987 Accomplishments

In 1987, the Agency obligated a total of \$2,300 for this function from the Salaries and Expenses appropriation. This amount covered the expenses of official receptions and other functions.

OFFICE OF INTERNATIONAL ACTIVITIES

1989 Program Request

The Agency requests a total of \$1,440,600 supported by 21.5 total workyears for this Office, all of which is for the Salaries and Expenses appropriation. This represents an increase of \$125,000 and no change in total workyears from 1988. The increase will provide for increased support costs. The Office will continue to manage the Agency's international activities and programs with an active role

in bilateral agreements, such as the transboundary pollution management agreements with Mexico and Canada, and international organizations. In 1989, the focus of the Office's activities will include an array of global and Regional air pollution issues involving policy formulation, intra- and interagency coordination, and international negotiations. Emphasis will be on global climate change, particularly to influence the policies and activities of United Nations Environmental Program (UNEP) and the World Meteorological Organization (WMO); acid precipitation from sulfur and nitrogen oxides, including the design and implementation of Regional accords and international conventions; and urban air pollution from vehicles and other sources, another area of growing international interest and activity.

1988 Program

In 1988, the Agency is allocating a total of \$1,315,600 supported by 21.5 total workyears to this Office, all of which is from the Salaries and Expenses appropriation. The Office continues to provide guidance, coordination and exchange of scientific and technical information on a regular basis in support of Agency programs and promotes agreed upon approaches to common environmental problems with border countries. In 1988, the Office is playing a more active role with international organizations including the Office for Economic and Cooperation Development, the United Nations Environment Program and the Economic Commission for Europe. In addition, the Office will be serving as the Federal Agency Coordinator for the North Atlantic Treaty Organization (NATO) and the Committee on Challenges on Modern Societies (CCMS).

1987 Accomplishments

The Agency obligated a total of \$1,274,900 and 22.6 total workyears for this program, all of which was from the Salaries and Expenses appropriation. Dealing with border pollution problems with Canada and Mexico dominated the focus of OIA. This included negotiations with Canada on transboundary air quality issues including ozone, and negotiations with Mexico concerning a new border agreement on control of border sanitation problems. New initiatives were also taken in support of bilateral cooperation with the USSR and China. Emphasis was also directed to facilitating trade and environmental aspects of trade in chemicals and shipment of hazardous wastes.

OFFICE OF CIVIL RIGHTS

1989 Program Request

The Agency requests a total of \$1,436,900 supported by 23.1 total workyears for this program, all of which is for the Salaries and Expenses appropriation. This represents an increase of \$26,300 and no change in total workyears from 1988. The increase will provide for increased operating costs. In 1989, the Office of Civil Rights will continue to provide technical guidance and direction to the Agency's civil rights efforts; assume full responsibility for policy and implementation of the discrimination complaints processing system; increase policy monitoring and support for Regional Civil Rights Offices, including Headquarters Office of Civil Rights; provide continuous monitoring of affirmative action plan implementation; expand and improve the Equal Employment Opportunity (EEO) counseling program to resolve complaints through informal conciliation; strengthen and improve the special emphasis programs by conducting seminars and workshops for special emphasis employees and Agency managers; increase quantity and quality of EEO reviews and studies; and improve the implementation of the Agency regulations regarding non-discrimination in Federally - assisted programs. Emphasis will be put on providing increased management support and quality control through on-site program evaluations, and processing discrimination complaints.

1988 Program

The Agency is allocating a total of \$1,410,600 and 23.1 total workyears for this Office, all of which is from the Salaries and Expenses appropriation. These resources enable the Office of Civil Rights (OCR) to continue to provide technical guidance and direction for the Agency's Civil Rights efforts. The Office is strengthening and improving the special emphasis programs by conducting seminars and workshops for special emphasis employees and Agency managers, and continues to conduct EEO reviews and studies and provide management support and quality control through on-site program evaluations. OCR continues to implement the Agency's regulations regarding non-discrimination in Federally-assisted programs.

1987 Accomplishments

The Agency obligated a total of \$1,264,300 supported by 22.6 total workyears for this program, all of which was from the Salaries and Expenses appropriation. The Office of Civil Rights carried out national equal employment opportunity monitoring and enforcement programs; managed the Agency's affirmative action program, special emphasis programs and the discrimination complaints program; implemented regulations and programs requiring EPA grant recipients to adhere to the civil rights laws and labor standard requirements of applicable Federal statutes; and served as the Agency's focal point for the Historically Black Colleges and Universities program. Specifically, the Office evaluated activities required to carry out the Agency's responsibilities to assure equal opportunity and to prohibit discrimination in employment at EPA; ensured implementation of the Agency's Special Emphasis Programs (Federal Women's, Hispanic Employment and Black Employment Programs); implemented and monitored the Agency's Affirmative Action Plans to remedy underrepresentation in the workforce; and assured compliance by Agency grantees and contractors with provisions of civil rights laws and labor standards requirements of applicable Federal statutes.

SCIENCE ADVISORY BOARD

1989 Program Request

The Agency requests a total of \$1,446,300 supported by 24.4 total workyears for this program, all of which is for the Salaries and Expenses appropriation. This represents an increase of \$29,600 and no change in total workyears from 1988. The increase will provide for increased operating costs. In 1989, the Administrator will identify approximately 70 regulatory issues for the Science Advisory Board (SAB) to review. The increased number of issues will include 11 new water reviews related to the Safe Drinking Water Act.

1988 Program

In 1988, the Agency is allocating a total of \$1,416,700 supported by 24.4 total workyears for this program, all of which is from the Salaries and Expenses appropriation. The Science Advisory Board is providing expert, independent advice to the Administrator and the Agency on 61 scientific and technical issues before the Agency.

1987 Accomplishments

The Agency obligated a total of \$1,393,100 supported by 21.5 total workyears for this program, all of which was from the Salaries and Expenses appropriation. The SAB was involved in 61 reviews during 1987. Included among these reviews were issues relating to hazardous air pollutants, toxic substances, radioactive waste disposal standards, asbestos in drinking water, hazardous waste incineration at sea and on land, nitrogen dioxide health effects, and toxic air pollutants.

OFFICE OF ADMINISTRATIVE LAW JUDGES (ALJ)

1989 Program Request

The Agency requests a total of \$1,054,900 supported by 17.4 total workyears for this program, all of which is for the Salaries and Expenses appropriation. This represents an increase of \$19,100 and no change in total workyears from 1988. The increase will provide for increased operating costs. In 1989, this Office will continue to preside over and conduct hearings required by the Administrative Procedures Act related to suspension, cancellation, licensing and enforcement actions, including the assessment of civil penalties, initiated by the Agency. Preliminary estimates indicate that there will be approximately 1,100 cases on the Office of Administrative Law Judges' docket, an increase of approximately 170 cases from 1988.

1988 Program

In 1988, the Agency is allocating a total of \$1,035,800 supported by 17.4 total workyears for this program, all of which is from the Salaries and Expenses appropriation. The ALJ expects to receive approximately 940 cases from EPA Regional offices in 1988. Of this total, approximately 205 cases are expected to be under the Resource Conservation and Recovery Act (RCRA), 532 cases under the Toxic Substances Control Act (TSCA), and 140 cases under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), and 35 cases under the Safe Drinking Water Act (SDWA). In addition, this Office will handle approximately 25 cases originating at Headquarters, including suspensions; cancellations; Sec. 3(c)(1)(D) of the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA); and Clean Air Act cases.

1987 Accomplishments

In 1987, the Agency obligated a total of \$837,700 and 15.6 total workyears for this program, all of which was from the Salaries and Expenses appropriation. This Office maintained a docket of 893 cases. Of these cases, 188 were under RCRA; 515 were under TSCA; and 135 cases were under FIFRA.

OFFICE OF SMALL AND DISADVANTAGED BUSINESS UTILIZATION

1989 Program Request

The Agency requests a total of \$516,600 supported by 6.9 total workyears for this program, all of which will be for the Salaries and Expenses appropriation. This represents no change from 1988. The Office will continue to provide technical assistance to both Headquarters and Regional program office personnel to ensure that small, minority and/or women's businesses are receiving a "fair share" of procurement dollars under EPA's Financial Assistance Program. In addition, the ombudsman will respond to approximately 8,000 inquiries from small firms on regulatory matters and will provide advice on the many new regulations that will bring about the desired level of voluntary compliance to several thousand small businesses.

1988 Program

The Agency is allocating a total of \$516,600 supported by 6.9 total workyears for this program, all of which is from the Salaries and Expenses appropriation. In 1988, emphasis is being placed on handling additional "Hotline" calls, implementing a Small Business Ombudsman Strategy, creating business regulatory outreach demonstration projects, and promoting Minority Business Enterprise and Women's Business Enterprise participation in the Agency's financial assistance programs to

comply with Executive Order 12432. In addition, the Office will monitor and provide advice on the many new regulations that will bring about the desired level of voluntary compliance by several thousand small businesses.

1987 Accomplishments

In 1987, the Agency obligated a total of \$466,200 supported by 6.8 total workyears for this program, all of which was from the Salaries and Expenses appropriation. The Office coordinated activities with EPA's procurement and financial assistance programs by providing training and technical assistance; provided assistance toward increasing the level of Minority Business Enterprise/Women's Business Enterprise (MBE/WBE) participation in EPA-assisted programs; and provided technical and managerial assistance to Headquarters and Regional staff assigned to socioeconomic program activities, and counseled minority and women's businesses in compliance with Executive Order 12432.

AGENCY MANAGEMENT

Office of the Inspector General

		ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988

(DOLLARS IN THOUSANDS)							

PROGRAM							

Office of Inspector General							
Salaries & Expenses		\$14,874.4	\$15,756.2	\$15,832.6	\$15,832.6	\$16,395.0	\$562.4
TOTAL		\$14,874.4	\$15,756.2	\$15,832.6	\$15,832.6	\$16,395.0	\$562.4
TOTAL:							
Salaries & Expenses		\$14,874.4	\$15,756.2	\$15,832.6	\$15,832.6	\$16,395.0	\$562.4
Office of Inspector General	TOTAL	\$14,874.4	\$15,756.2	\$15,832.6	\$15,832.6	\$16,395.0	\$562.4

PERMANENT WORKYEARS							

Office of Inspector General		208.6	219.7	229.7	227.7	227.7	
TOTAL PERMANENT WORKYEARS		208.6	219.7	229.7	227.7	227.7	
TOTAL WORKYEARS							

Office of Inspector General		210.3	219.7	229.7	227.7	227.7	
TOTAL WORKYEARS		210.3	219.7	229.7	227.7	227.7	

MANAGEMENT AND SUPPORT

Agency Management

Office of Inspector General

Budget Request

The Agency requests a total of \$16,395,000 supported by 227.7 total workyears for 1989, an increase of \$562,400 and no change in total workyears from 1988. All of this request will be for the Salaries and Expenses appropriation.

Program Description

This office is responsible for conducting, supervising, and coordinating audits and investigations relating to EPA programs and operations; promoting economy, efficiency, and effectiveness in the administration of EPA programs; preventing and detecting fraud and abuse in EPA programs and operations; keeping the Administrator and the Congress advised of problem areas and related corrective action; and reviewing EPA regulations and legislation.

OFFICE OF INSPECTOR GENERAL

1989 Program Request

The Agency requests a total of \$16,395,000 supported by 227.7 total workyears, all of which will be for the Salaries and Expenses appropriation. This represents an increase of \$562,400 and no change in total workyears from 1988. The increase in dollars primarily will finance additional audits of the Construction Grants Program, and provides for an increase in travel and other support costs.

The resources requested will be used by the Office of Inspector General (OIG) to continue conducting internal and management audits to improve the economy, effectiveness, and efficiency of EPA programs and provide audit coverage to EPA programs and operations which have received little or no previous attention. The OIG will emphasize reviewing programs aimed at achieving environmental results and ensuring strong enforcement including (1) pesticides and toxics, (2) hazardous waste disposal, and (3) air and water quality. The OIG will continue its program of external audits of grants and contracts which have historically recovered \$12 in costs for each audit dollar spent.

The OIG will also continue investigations of antitrust activities and other construction-related fraud and will aggressively pursue new initiatives, including examinations of possible antitrust activities by architectural and engineering firms and conspiracies to defraud involving contract laboratories. By focusing efforts on fraud cases in vulnerable areas and by taking more proactive initiatives, the OIG expects to obtain greater results, including increased indictments, convictions, and monetary recoveries. The OIG will continue efforts in fraud prevention by publicizing OIG activities to EPA employees, identifying areas sensitive to fraud, and developing new fraud detection methods.

1988 Program

In 1988, the Agency is allocating a total of \$15,832,600 supported by 227.7 total workyears, all of which is from the Salaries and Expenses appropriation. The OIG is continuing to perform internal and management audits needed to help

improve the economy, efficiency, and effectiveness of the Agency's overall program operations. Primary emphasis is on reviewing programs or areas in which insufficient audit resources have been devoted. For example, this would include such reviews as EPA's efforts to enforce requirements to prevent air pollution from stationary sources; EPA's and States' ability to track and manage hazardous wastes; the Quality Assurance Program for EPA's research and development activities; and the Agency's oversight and control of underground injection control wells. Such reviews assist Agency managers in identifying and correcting major systemic problems which, in turn, strengthen environmental programs. These reviews help the Agency meet its mission while ensuring that limited resources are used more effectively and efficiently.

The OIG investigative resources are devoted to conducting criminal investigations relating to EPA programs and operations. Major investigations cover bid rigging and other fraud in EPA-funded construction activities; procurement fraud; false claims; fraud and misconduct involving EPA employees; and administrative investigations of improprieties involving EPA programs and personnel. New initiatives have been aggressively undertaken to identify fraud in the contract laboratory program. Continued efforts are being made to encourage the use of the OIG hotline to uncover instances of suspected fraud, waste, and mismanagement. Under the fraud prevention program, the OIG is providing technical and audit assistance to elements of the Agency assessing the adequacy of internal controls as required by the Federal Managers' Financial Integrity Act of 1982.

1987 Accomplishments

In 1987, the Agency obligated a total of \$14,874,400 supported by 210.3 total workyears, all of which was from the Salaries and Expenses appropriation. The Office of Inspector General issued 2,025 audit reports which questioned costs of \$183,300,000. On an overall basis, \$33,400,000 of costs questioned were sustained by Agency management. During the year, the Agency obtained \$13,100,000 of cost efficiencies and \$30,900,000 of actual cash recoveries as a result of audit efforts. An expanded internal and management audit program was implemented and about 35 percent of the OIG audit resources were devoted to examining many critical areas which had never been audited before. Internal audits provided recommendations for improving the effectiveness, efficiency, and results of EPA program operations. Investigative activities focusing on major civil and criminal violations has resulted in the recovery of \$4,700,000 in fines and restitution.

Key improvements resulting from OIG audits included: (1) more comprehensive inspections and better enforcement of asbestos and automobile emissions standards; (2) strengthening the Agency's control and enforcement of grant agreements in Puerto Rico and the Virgin Islands to achieve clean water standards; (3) revising the Agency's procedures for awarding loans and grants to the neediest schools with the most serious asbestos problems; and (4) strengthening the Agency's controls and policies for issuing hazardous waste permits. The OIG opened 332 new investigations and closed 308 investigations, obtaining 119 indictments and convictions. Significant results were achieved in investigations of construction-related fraud, and the submission of fraudulent documentation involving foreign vehicles. The OIG also initiated a fraud prevention and detection awareness program for EPA managers to encourage and improve their recognition and reporting of possible fraud and abuse.

AGENCY MANAGEMENT

Office of General Counsel

		ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988

(DOLLARS IN THOUSANDS)							

PROGRAM							

Office Of General Counsel							
Salaries & Expenses		\$6,689.2	\$7,136.3	\$7,275.5	\$7,275.5	\$7,305.4	\$29.9
	TOTAL	\$6,689.2	\$7,136.3	\$7,275.5	\$7,275.5	\$7,305.4	\$29.9
TOTAL:							
Salaries & Expenses		\$6,689.2	\$7,136.3	\$7,275.5	\$7,275.5	\$7,305.4	\$29.9
Office of General Counsel	TOTAL	\$6,689.2	\$7,136.3	\$7,275.5	\$7,275.5	\$7,305.4	\$29.9
PERMANENT WORKYEARS							

Office Of General Counsel		98.5	125.5	127.5	118.3	125.5	7.2
TOTAL PERMANENT WORKYEARS		98.5	125.5	127.5	118.3	125.5	7.2
TOTAL WORKYEARS							

Office Of General Counsel		110.8	125.5	127.5	125.5	125.5	
TOTAL WORKYEARS		110.8	125.5	127.5	125.5	125.5	

MANAGEMENT AND SUPPORT

Agency Management

Office of General Counsel

Budget Request

The Agency requests a total of \$7,305,400 supported by 125.5 total workyears for 1989, an increase of \$29,900 and no change in total workyears from 1988. All of the request will be for the Salaries and Expenses appropriation.

Program Description

The Office of General Counsel provides legal advice and counsel to the Agency's top management and media program offices concerning legal interpretation of EPA administered statutes, other applicable laws, and such matters as personnel, grants, and contracts. In addition, the program is responsible for litigation activity in which EPA is a defendant. These resources provide legal advice to the Agency in all major regulatory actions, or other Agency actions in which litigation is likely, to ensure that legal error is avoided and legal positions are presented in the most persuasive manner.

GENERAL COUNSEL

1989 Program Request

The Agency requests a total of \$7,305,400 supported by 125.5 total workyears for this program, all of which will be for the Salaries and Expenses appropriation. This represents an increase of \$29,900 and no change in total workyears from 1988. The increase will provide for increased operating costs.

The Office of General Counsel will provide legal advice and counsel to Agency management and media program offices concerning legal interpretation of EPA administered statutes, other applicable laws, regulations and administrative areas such as personnel, grants, contracts, and access by the public to EPA held information. The OGC will handle litigation in which EPA is a defendant. Legal support and review will be provided for all major regulatory actions, policy documents and guidelines to insure that legal error is avoided.

1988 Program

In 1988, the Agency is allocating a total of \$7,275,500 supported by 125.5 total workyears for this program, all of which is from the Salaries and Expenses appropriation. The 1988 program provides continued support to Agency program priorities through legal advice and assistance, handling defensive litigation, review of Agency rulemaking actions, and participating in selected administrative proceedings.

1987 Accomplishments

In 1987, the Agency obligated a total of \$6,689,200 supported by 110.8 total workyears, all of which was from the Salaries and Expenses appropriation. In 1987, the Office of General Counsel (OGC) supported Agency priorities by providing legal

advice and support to Agency managers and by defending the Agency in litigation filed against it. OGC also reviewed regulatory actions to ensure legal defensibility and provided advice on other actions, such as grants, contracts, and personnel matters.

AGENCY MANAGEMENT

Office of External Affairs

		ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	BUDGET REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988

(DOLLARS IN THOUSANDS)							

PROGRAM							

Office Of Legislative Analysis							
Salaries & Expenses		\$888.5	\$1,019.7	\$979.4	\$979.4	\$1,027.1	\$47.7
TOTAL		\$888.5	\$1,019.7	\$979.4	\$979.4	\$1,027.1	\$47.7
Office Of Congressional Liaison							
Salaries & Expenses		\$842.5	\$937.0	\$895.8	\$895.8	\$939.2	\$43.4
TOTAL		\$842.5	\$937.0	\$895.8	\$895.8	\$939.2	\$43.4
Office of Public Affairs							
Salaries & Expenses		\$2,579.8	\$2,682.4	\$2,635.3	\$2,635.3	\$2,680.9	\$45.6
TOTAL		\$2,579.8	\$2,682.4	\$2,635.3	\$2,635.3	\$2,680.9	\$45.6
Office of Community and Intergovernmental Relations							
Salaries & Expenses		\$813.9	\$874.4	\$847.2	\$847.2	\$879.3	\$32.1
TOTAL		\$813.9	\$874.4	\$847.2	\$847.2	\$879.3	\$32.1
Office of Federal Activities							
Salaries & Expenses		\$1,796.7	\$1,950.0	\$1,899.4	\$1,899.4	\$1,946.5	\$47.1
TOTAL		\$1,796.7	\$1,950.0	\$1,899.4	\$1,899.4	\$1,946.5	\$47.1
TOTAL:							
Salaries & Expenses		\$6,921.4	\$7,463.5	\$7,257.1	\$7,257.1	\$7,473.0	\$215.9
Office of External Affairs	TOTAL	\$6,921.4	\$7,463.5	\$7,257.1	\$7,257.1	\$7,473.0	\$215.9

AGENCY MANAGEMENT

Office of External Affairs

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	BUDGET REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988

(DOLLARS IN THOUSANDS)						
PERMANENT WORKYEARS						

Office Of Legislative Analysis	14.0	20.4	20.4	16.4	20.4	4.0
Office Of Congressional Liaison	14.6	21.0	21.0	19.0	21.0	2.0
Office of Public Affairs	39.7	43.6	43.6	37.5	42.5	5.0
Office of Community and Intergovernmental Relations	12.1	14.4	14.4	14.4	14.4	
Office of Federal Activities	29.8	31.8	31.8	28.3	30.9	2.6
TOTAL PERMANENT WORKYEARS	110.2	131.2	131.2	115.6	129.2	13.6
TOTAL WORKYEARS						

Office Of Legislative Analysis	17.5	20.4	20.4	20.4	20.4	
Office Of Congressional Liaison	18.2	21.0	21.0	21.0	21.0	
Office of Public Affairs	45.5	43.6	43.6	42.5	42.5	

AGENCY MANAGEMENT

Office of External Affairs

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	BUDGET REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988

	(DOLLARS IN THOUSANDS)					
Office of Community and Intergovernmental Relations	14.1	14.4	14.4	14.4	14.4	
Office of Federal Activities	33.3	31.8	31.8	30.9	30.9	
TOTAL WORKYEARS	128.6	131.2	131.2	129.2	129.2	

MANAGEMENT AND SUPPORT

Agency Management

Office of External Affairs

Budget Request

The Agency requests a total of \$7,473,000 supported by 129.2 total workyears for 1989, an increase of \$215,900 and no change in total workyears from 1988. All of the request will be for the Salaries and Expenses appropriation.

Program Description

These resources include the salaries and associated costs for the Immediate Office of the Assistant Administrator, the Office of Legislative Analysis, the Office of Congressional Liaison, the Office of Public Affairs, the Office of Community and Intergovernmental Relations, and the Office of Federal Activities. The Office of External Affairs provides a clear interpretation of the Agency's programs and priorities to increase Agency effectiveness by improving Congressional liaison, by establishing outreach to broaden our public involvement through State and local contacts, public interest groups, and citizen participation, and by reaffirming and strengthening Federal agency contacts.

Office of Legislative Analysis -- This Office is responsible for preparing Agency draft legislation, developing testimony for Agency officials to present before Congress, and conducting analyses of environmentally related legislation developed by the Congress. It works closely with the Administrator, Assistant Administrator for External Affairs, and the program and Regional offices in developing the Agency's legislative program and in guiding specific legislative proposals through the interagency legislative review process. This Office also maintains the Agency's Legislative Reference Library and provides legislative research services for the Agency.

Office of Congressional Liaison -- This Office serves as the focal point of Congressional contact for the Agency. It provides daily summaries of Congressional activities throughout EPA and provides recommendations, advice, and assistance to the Administrator, Assistant Administrator for External Affairs, and other senior policy officials involved in the development, presentation, and implementation of the Agency's legislative program. The Office reviews all Congressional correspondence, responds to Congressional requests for information and Agency publications, and coordinates grant and contract announcements to Congress.

Office of Public Affairs -- This Office is the Agency focal point for news media relations and public information. Activities include: preparing press releases and feature materials for news media distribution; responding to press inquiries; conducting press conferences and briefings; coordinating news media appearances of key Agency officials; compiling daily and weekly news clips of national press coverage. The Office also prepares publications for the general public on major programs and EPA activities; produces newsletters for internal EPA use; supports television and radio outlets nationwide with audiovisual materials explaining EPA programs; and reviews all public information materials for conformance to the Agency's Graphics Standards System.

Office of Community and Intergovernmental Relations -- This Office serves as the Agency's principal point of contact with major national public interest groups, environmental groups, industry representatives, and State and local governments, and advises the Administrator and other Agency officials on the positions and views of these groups and develops appropriate strategies for effective interactions and dialogue with them and their constituencies. The Office will continue to

emphasize the Administrator's concern for developing cooperation with and support for delegating Agency programs to State and local governments and for broadening the base of involvement in the Agency's regulatory decision-making process, and for ensuring appropriate citizen involvement in Agency decisions and actions.

Office of Federal Activities (OFA) -- This Office develops national policies for dealing with environmental issues and problems associated with Federal agencies. Specifically, OFA: 1) ensures that EPA prepares Environmental Impact Statements or Findings of No Significant Impact for those Agency programs specifically covered by the National Environmental Policy Act (NEPA), and assists Agency programs with reviews that are the functional equivalent for those programs that are not specifically covered by NEPA, 2) oversees Federal facility compliance with all EPA pollution control requirements, pursuant to Executive Order 12088, 3) ensures that Federal agencies carry out their activities in an environmentally sound manner pursuant to the National Environmental Policy Act and Section 309 of the Clean Air Act, 4) develops policies for dealing with environmental problems on Indian reservations and implements such policies, and 5) files and publishes notices of all Federal Environmental Impact Statements in support of the Council on Environmental Quality.

OFFICE OF LEGISLATIVE ANALYSIS

1989 Program Request

The Agency requests a total of \$1,027,100 supported by 20.4 total workyears for 1989, all of which will be for the Salaries and Expenses appropriation. This represents an increase of \$47,700 and no change in total workyears from 1988. The increase will provide for increased operating costs. During 1989, the Office will continue to ensure that testimony, draft legislation, and analyses and reports on pending and proposed legislation will be developed and provided to OMB and the Congress in a timely fashion and consistent with Agency and Administration policies.

1988 Program

In 1988, the Agency is allocating a total of \$979,400 supported by 20.4 total workyears for this Office, all of which is from the Salaries and Expenses appropriation. The 1988 program includes developing draft legislative proposals extending the appropriations required for seven of EPA's major statutory authorities. In addition, the Office did extensive analyses in connection with a multitude of significant amendments to the Clean Air Act and other air-related issues. The Office also has begun preparation of the 1988 legislative program and selected areas in which legislative proposals were considered for possible introduction during the remainder of the 100th Congress.

1987 Accomplishments

In 1987, the Agency obligated a total of \$888,500 supported by 17.5 total workyears for this Office, all of which was from the Salaries and Expenses appropriation. The Office developed draft legislative proposals extending the appropriations required for all of EPA's major statutory authorities. In 1987, the Office developed testimony and related material for 109 hearings, reviewed and responded to 145 bills referred to the Agency from OMB and Congressional committees, 120 draft legislative reports proposed by other agencies, and 172 statements or testimony of other agencies.

OFFICE OF CONGRESSIONAL LIAISON

1989 Program Request

The Agency requests a total of \$939,200 supported by 21.0 total workyears for 1989, all of which will be for the Salaries and Expenses appropriation. This represents an increase of \$43,400 and no change in total workyears. The increase will provide for increased operating costs. The budget request will enable the Office to provide effective day-to-day liaison with the Congress and will ensure that increasing Member and Committee requests are handled in a timely manner. The Office will continue to represent the views of the Agency to Congress, coordinate EPA-related hearings and supervise daily interaction with Congressional Members and staff.

1988 Program

In 1988, the Agency is allocating a total of \$895,800 supported by 21.0 total workyears for this Office, all of which is from the Salaries and Expenses appropriation. The budget request enables the Office to continue to provide effective day-to-day liaison with Congress as it examines legislation relating to environmental issues.

1987 Accomplishments

In 1987, the Agency obligated a total of \$842,500 supported by 18.2 total workyears for this Office, all of which was from the Salaries and Expenses appropriation. The Office of Congressional Liaison was responsible for all day-to-day Congressional contacts, including more than 250 briefings of Members and/or Staff, involvement in approximately 108 hearings, and coordination of numerous meetings, courtesy calls, specific Committee investigative information requests and casework generated by Congress.

OFFICE OF PUBLIC AFFAIRS

1989 Program Request

The Agency requests a total of \$2,680,900 supported by 42.5 total workyears for 1989, all of which will be for the Salaries and Expenses appropriation. This represents an increase of \$45,600 and no change in total workyears from 1988. The increase will provide for increased operating costs. In 1989, the Office of Public Affairs will continue to inform, educate, and involve the public on the issues before the Agency and to promote understanding of the Agency's mission and the Administrator's goals and objectives.

1988 Program

In 1988, the Agency is allocating a total of \$2,635,300 supported by 42.5 total workyears for this Office, all of which is from the Salaries and Expenses appropriation. In addition to working with the news media and providing informational materials for the general public, OPA is emphasizing: (1) improving coordination within the Agency of communication activities related to major Agency actions, and (2) strengthening long-range planning of public information activities in coordination with major EPA program offices and the Regional offices.

1987 Accomplishments

In 1987, the Agency obligated a total of \$2,579,800 supported by 45.5 total workyears for this Office, all of which was from the Salaries and Expenses appro-

priation. In addition to the general activities of informing the news media and providing information material to the public, the Office focused on Agency priority issues of concern to the public and provided communications support for major EPA initiatives.

OFFICE OF COMMUNITY AND INTERGOVERNMENTAL RELATIONS

1989 Program Request

The Agency requests a total of \$879,300 supported by 14.4 total workyears for this Office, all of which will be for the Salaries and Expenses appropriation. This represents an increase of \$32,100 and no change in total workyears from 1988. The increase will provide for increased operating costs. In 1989, the Office expects to continue its implementation of leadership and guidance activities to support community relations efforts throughout the Agency, to maintain Agency liaison with State and local officials while increasing activities to enhance technology transfer capabilities and ensure emphasis on enhanced Federalism. In addition, the Agency plans to increase communications with private sector organizations not traditionally involved in environmental efforts, provide continuing assistance in delegation of environmental programs to State and local governments, and implement the President's Environmental Youth Awards program and other youth outreach activities.

1988 Program

In 1988, the Agency is allocating a total of \$847,200 supported by 14.4 total workyears for this Office, all of which is from the Salaries and Expenses appropriation. During this year, the Office is developing and beginning implementation of Agency guidance and leadership in community relations activities for specific media programs through national organizations and communications strategies which allow maximum appropriate public involvement in EPA's decisions. The Office is continuing to enhance EPA's relationships with the States through the ongoing State/EPA Committee and its various ad-hoc work groups, developing ongoing communications with major environmental and other interest groups as well as private sector organizations.

1987 Accomplishments

In 1987, the Agency obligated a total of \$813,900 supported by 14.1 total workyears for this Office, all of which was from the Salaries and Expenses appropriation. During 1987, the Office established an ongoing series of briefings relating to national environmental organization leadership, began implementing the Agency's Youth Program, absorbed and redirected the staff of EPA's Community Relations Division from the Office of Public Affairs, and through the State/EPA Committee addressed major national environmental concerns of both States and EPA.

OFFICE OF FEDERAL ACTIVITIES

1989 Program Request

The Agency requests a total of \$1,946,500 supported by 30.9 total workyears for this Office, all of which will be for the Salaries and Expenses appropriation. This represents an increase of \$47,100 and no change in total workyears. The increase will provide for increased operating costs. The Office of Federal Activities (OFA) will: maintain oversight concerning EPA's compliance with the National Environmental Policy Act, including preparation of the necessary environmental documents for NEPA compliance, such as Environmental Impact Statements (EISs) and

Findings of No Significant Impact (FNSIs); direct activities to assure compliance by other Federal agencies with all environmental statutes pursuant to Executive Order 12088; and review the budget plans of other agencies to assure adequate funding of abatement projects pursuant to Office of Management and Budget Circular A-106; review other Federal agencies' projects and actions, including their EISs in accordance with Section 309 of the Clean Air Act and NEPA; coordinate the implementation of EPA programs on Indian reservations; and continue its Council on Environmental Quality EIS filing activities.

1988 Program

In 1988, the Agency is allocating a total of \$1,899,400 supported by 30.9 total workyears for this Office, all of which is from the Salaries and Expenses appropriation. The Office continues to: ensure that EPA programs operate in conformance with NEPA direct activities pursuant to Executive Order 12088 and Office of Management and Budget Circular A-106 related to compliance of Federal installations with environmental regulations; review other Federal actions for potential environmental impact, analyze EPA policies associated with other Federal agencies; and oversee the implementation of EPA's Indian Policy, and operate the Federal EIS filing effort.

1987 Accomplishments

In 1987, the Agency obligated a total of \$1,796,700 supported by 33.3 total workyears for this Office, all of which was from the Salaries and Expenses appropriation. The Office focused its activity on: improving allocation and control of funding for the preparation of NEPA documents (EISs and FNSIs); implementing new procedures for both review of Federal agency actions and interaction with other agencies as required by NEPA and Section 309 of the Clean Air Act; increasing emphasis on compliance of Federal agencies with Federal statutory environmental requirements; developing and implementing an Agency policy with Indian tribes relating to environmental issues on reservation lands.

AGENCY MANAGEMENT

Office of Policy, Planning and Evaluation

		ACTUAL 1988	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1987	BUDGET REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988

(DOLLARS IN THOUSANDS)							
PROGRAM							

Program Management - Policy, Planning And Evaluation							
Salaries & Expenses		\$785.7	\$910.4	\$875.6	\$875.6	\$888.1	\$12.5
TOTAL		\$785.7	\$910.4	\$875.6	\$875.6	\$888.1	\$12.5
Integrated Environmental Management Program							
Salaries & Expenses		\$3,332.8	\$2,971.6	\$2,869.0	\$2,869.0	\$2,884.0	\$15.0
TOTAL		\$3,332.8	\$2,971.6	\$2,869.0	\$2,869.0	\$2,884.0	\$15.0
Office of Policy Analysis							
Salaries & Expenses		\$7,559.2	\$10,194.7	\$10,094.9	\$10,094.9	\$11,712.5	\$1,617.6
TOTAL		\$7,559.2	\$10,194.7	\$10,094.9	\$10,094.9	\$11,712.5	\$1,617.6
Office of Standards & Regulations							
Salaries & Expenses		\$4,754.4	\$5,398.7	\$5,355.2	\$5,355.2	\$5,410.1	\$54.9
TOTAL		\$4,754.4	\$5,398.7	\$5,355.2	\$5,355.2	\$5,410.1	\$54.9
Office of Management Systems & Evaluation							
Salaries & Expenses		\$2,719.0	\$2,948.7	\$2,803.7	\$2,803.7	\$2,945.6	\$141.9
TOTAL		\$2,719.0	\$2,948.7	\$2,803.7	\$2,803.7	\$2,945.6	\$141.9
TOTAL:							
Salaries & Expenses		\$19,151.1	\$22,424.1	\$21,998.4	\$21,998.4	\$23,840.3	\$1,841.9
Office of Policy, Planning and Evaluation	TOTAL	\$19,151.1	\$22,424.1	\$21,998.4	\$21,998.4	\$23,840.3	\$1,841.9

AGENCY MANAGEMENT

Office of Policy, Planning and Evaluation

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988
----- (DOLLARS IN THOUSANDS) -----						
PERMANENT WORKYEARS -----						
Program Management - Policy, Planning And Evaluation	12.3	14.9	14.9	13.9	14.9	1.0
Integrated Environmental Management Program	14.1	19.0	19.0	18.0	19.0	1.0
Office of Policy Analysis	49.2	62.9	62.9	51.9	60.8	8.9
Office of Standards & Regulations	59.7	69.3	69.3	57.5	66.8	9.3
Office of Management Systems & Evaluation	49.2	55.0	55.0	47.6	52.6	5.0
TOTAL PERMANENT WORKYEARS	184.5	221.1	191.1	188.9	214.1	25.2
TOTAL WORKYEARS -----						
Program Management - Policy, Planning And Evaluation	14.8	14.9	14.9	14.9	14.9	
Integrated Environmental Management Program	21.1	19.0	19.0	19.0	19.0	
Office of Policy Analysis	58.4	62.9	62.9	60.8	60.8	

AGENCY MANAGEMENT

Office of Policy, Planning and Evaluation

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988

	(DOLLARS IN THOUSANDS)					
Office of Standards & Regulations	66.2	69.3	69.3	66.8	66.8	
Office of Management Systems & Evaluation	53.2	55.0	55.0	52.6	52.6	
TOTAL WORKYEARS	213.7	221.1	221.1	214.1	214.1	

MANAGEMENT AND SUPPORT

Agency Management

Office of Policy, Planning and Evaluation

Budget Request

The Agency requests a total of \$23,840,300 supported by 214.1 total workyears for 1989, an increase of \$1,841,900 and no change in total workyears from 1988. All of the request will be for the Salaries and Expenses appropriation.

Program Description

The Office of Policy, Planning and Evaluation (OPPE), under the guidance of the Assistant Administrator, directs the Agency's regulation development and review process, formulates Agency policy, and develops planning strategy.

Specifically, OPPE reviews all EPA regulations to ensure consistency with Agency policy, coordinates all internal Agency reviews of regulations, and examines regulatory alternatives. Through its analyses of the economic and environmental effects of EPA's regulations, policies, and guidance as well as evaluations of the effectiveness of ongoing Agency programs, OPPE plays a significant role in policy formulation. Besides developing a framework for a well-run strategic planning process, OPPE ensures that EPA's program objectives and environmental goals are clearly defined and met.

In addition, OPPE participates in special issues such as global climate, risk communication, and integrated environmental management. It emphasizes risk reduction; coordinated, cross-media approaches to environmental problems and the efficient and effective delivery of environmental results.

Program Management - Policy, Planning and Evaluation -- This program element supports the Assistant Administrator's Immediate Office and provides senior OPPE managers with policy direction, program planning, budgeting and resource management.

Integrated Environmental Management Program (IEMP) -- The IEMP implements pollution management strategies through Federal-level, state-level, and geographic-specific approaches to program integration.

Office of Policy Analysis (OPA) -- OPA conducts analyses of the economic impacts, feasibility, practicality, and effectiveness of regulations, policies, and guidance, and advises senior EPA managers on how the results of such analyses should influence Agency decision-making.

Office of Standards and Regulations (OSR) -- OSR manages the Agency's regulation development and review process, improves the statistical and technical quality of EPA regulations and data collection, and develops innovative approaches and alternatives to regulation.

Office of Management Systems and Evaluation (OMSE) -- OMSE operates the Agency's central planning and management process and conducts program effectiveness studies and Regional planning initiatives in order to ensure that programs achieve the Agency's objectives.

PROGRAM MANAGEMENT - POLICY, PLANNING AND EVALUATION

1989 Program Request

The Agency requests a total of \$888,100 supported by 14.9 total workyears for this program, all of which will be for the Salaries and Expenses appropriation. This represents an increase of \$12,500 and no change in total workyears. The increase will provide for increased operating costs.

This request will provide the Assistant Administrator with sufficient staff and resources for the policy direction, special analyses, and budgetary and administrative support necessary to manage OPPE and its component offices efficiently and effectively. It also will enable the Agency to respond appropriately to General Accounting Office evaluations of EPA programs.

1988 Program

In 1988, the Agency is allocating a total of \$875,600 supported by 14.9 total workyears for this program, all of which is from the Salaries and Expenses appropriation. This program is providing overall policy direction and conducting the activities necessary to manage the component offices of OPPE.

1987 Accomplishments

In 1987, the Agency obligated a total of \$785,700 supported by 14.8 total workyears for this program, all of which was from the Salaries and Expenses appropriation. These funds supported the basic budgetary, administrative, analytic, and planning activities necessary to manage OPPE.

INTEGRATED ENVIRONMENTAL MANAGEMENT PROGRAM

1989 Program Request

The Agency requests a total of \$2,884,000 supported by 19.0 total workyears for this program, all of which will be for the Salaries and Expenses appropriation. This represents an increase of \$15,000 and no change in total workyears. The increase will provide for increased operating costs.

IEMP will complete a limited number of State and Regional demonstration projects designed as models for transferring multi-media, risk-based environmental management methods to the States and Regions. Specific products include: State/Regional use of risk-based tools and integrated environmental management processes to set environmental management priorities; State/Regional implementation of environmental action plans based on those priorities; and institutionalization of a negotiation process between State, Regional, and national program managers which appropriately reflects an efficient balance of Federal/local partnership to address environmental issues and provides the basis for measuring the value of pollution control action. Nonparticipating States and Regions will receive some technical assistance. The science policy group will focus on transferring use of risk analysis techniques to States and Regions, and on translating scientific research into policies and procedures needed for decision-making. As EPA comes to rely more on risk assessment/management as the basis for management and regulatory decisions, the scientific underpinnings of risk assessment become increasingly vital. Projects will include: development of weight-of-evidence classification and possibly potency estimation procedures for non-cancer effects -- both enabling EPA officials to make fuller use of the available information in weighing costs and health benefits for various regulatory alternatives; increased standardization of methods and models used for exposure assessment; creation of classification schemes for addressing scientific uncertainty in cross-media comparative risk analysis; development

of specific criteria for evaluating environmental threats posed by contaminated sediments; and identification of biological parameters that can be used to define and project the effectiveness of EPA regulatory programs.

1988 Program

In 1988, the Agency is allocating a total of \$2,869,000 supported by 19.0 total workyears for this program, all of which is from the Salaries and Expenses appropriation.

IEMP is completing the Denver project and beginning the transition from these methodology-building, site-specific pollution control initiatives to institutionalization of cross-media risk, cost analysis, and decision-making by sponsorship of five Regional and State-level integration programs and through technical assistance to non-program Regions and States. This institutionalization work is currently proceeding in Regions I, III, and X, in Pennsylvania and Colorado and for the Turtle Mountain Band of Chippewa Indians. IEMP also is documenting all of its geographic and State pilot projects which will be an essential resource for localities and States as they undertake their own site-specific projects. In addition, work on developing quantitative methods to assess non-cancer health effects is continuing. IEMP also is performing case studies of the risk assessments for two chemicals to provide decision-makers with a better understanding of the uncertainties and margins of safety in Agency risk assessments. In order to more accurately reflect actual exposure conditions and risks, a study of risks from air toxics is planned.

1987 Accomplishments

In 1987, the Agency obligated a total of \$3,332,800 supported by 21.1 total workyears for this program, all of which was from the Salaries and Expenses appropriation.

Through its site-specific integration projects, IEMP assisted regulatory agencies at all levels of government to improve their ability to set priorities for toxics evaluation and possible control across media, and to devise toxics control strategies for priority problems that combine explicit cost-effectiveness considerations with statutory and administrative ease of implementation. IEMP continued its work in Denver and completed site-specific projects in Baltimore, Santa Clara, and Kanawha Valley. In addition IEMP sponsored a workshop to develop weight-of-evidence schemes for the assessment of the hazards of non-cancer health effects. These schemes will aid analysts and decision-makers in understanding the strength and extensiveness of toxicological data used to develop risk estimates for non-cancer health effects. IEMP also examined the extent and severity of contaminated marine sediments and planned a workshop to develop management options.

OFFICE OF POLICY ANALYSIS

1989 Program Request

The Agency requests a total of \$11,712,500 supported by 60.8 total workyears for this program, all of which will be for the Salaries and Expenses appropriation. This represents an increase of \$1,617,600 and no change in total workyears. The increase is to fund studies on global climate change and provide support to the Center for Risk Management.

OPA will analyze EPA's highest priority regulatory actions and non-regulatory initiatives, including policy implications of the National Acid Precipitation Program's final report, implementation issues for the chlorofluorocarbons (CFCs) control and tropospheric ozone programs, integrated water quality-based targeting

strategy implementation, cross-media impacts of solid wastes and hazardous substances, the Pesticides Macro Project, the Environmental Resources Inventory Project, industrial wastes under Subtitle D, and "special waste" regulatory programs. Benefit/cost analyses required under Executive Order (E.O.) 12291 will continue in all program areas with emphasis on valuation of ozone damages, fuel desulfurization, hazardous waste regulations, and hazardous waste industry capacity. The Economic Research Program will continue to help develop new analytical methods to improve risk management. Work on risk assessment/management/communication will focus on training for EPA staff and technical assistance to program and Regional offices on specific risk communication problems. OPA also will provide the Agency support for the Center for Risk Management which is studying a series of long-term risk issues.

In the area of global climate change, OPA will work closely with the Offices of Research and Development, and Air and Radiation to follow up on two major reports to Congress on "Policy Options for Stabilizing Climate" and the "Environmental Effects of Climate Change" to be transmitted in early 1989 as well as with other agencies and organizations on climate issues, representing EPA in the Interagency National Climate Program and at conferences sponsored by the World Meteorological Organization and United Nations Environmental Programme. It will refine the analytical framework for analyzing stabilization, begin to build modeling systems for effects, participate in international activities and basic outreach and communication efforts, study adaptive responses, and work on climate signal detection and on removing uncertainties in various parts of the analysis.

1988 Program

In 1988, the Agency is allocating a total of \$10,094,900 supported by 60.8 total workyears for this program, all of which is from the Salaries and Expenses appropriation.

With these resources, OPA is focusing on new stationary and mobile source controls, new drinking water standards, the National Estuaries Program, wetlands, non-point sources, Subtitle D regulations for industrial landfills and mining waste, alternatives for revising definition of hazardous waste and improving the listing/delisting process, and new activities concerning stratospheric ozone protection. Its continuing efforts in the area of global climate change include completing two draft reports to Congress, the initial framework for estimating future concentrations of trace gases and global temperatures, and analyses of the impact of climate change on California, the Great Plains, South East and Great Lakes. OPA's Benefits Program is overseeing implementation of E.O. 12291 and is concentrating on materials damage assessment, enforcement issues in hazardous waste, and risk estimation for pesticide decisions. The Economic Research Program is proceeding with its major pesticides policy project and looking at improved morbidity risk valuation and labeling for toxic chemicals and pesticides as a supplement to traditional regulation. It also is expanding methodology development and testing for risk communication as an alternative to regulation for problems, such as indoor radon and lead in home drinking water. OPA is continuing its efforts to improve EPA's abilities and the public's understanding in the areas of risk assessment, risk management, and risk communication through training and by working with the programs to implement risk-based decision-making.

1987 Accomplishments

In 1987, the Agency obligated a total of \$7,559,200 supported by 58.4 total workyears for this program, all of which was from the Salaries and Expenses appropriation.

OPA continued to oversee implementation of E.O. 12291, producing analyses of EPA's highest priority regulatory actions including major air issues, new drinking water standards, implications of proposed Subtitle D standards, initial deep well ban decisions, and the final leaking underground storage tank regulations as well as non-regulation specific initiatives, such as geographic-based environmental management (e.g., Great Lakes region) and risk and benefits-based enforcement. OPA's global climate change efforts included starting work on two reports to Congress, building the framework for analysis of options to stabilize the atmosphere, and providing technical support for bilateral activities on climate with the Soviet Union, China, and Canada. It represented EPA in the interagency National Climate Program and supported the United States delegation to the international negotiations on CFCs. OPA directed the Comparative Risk Project which compared the risks addressed by different EPA programs. In addition, OPA's Benefits Program focused on advanced treatment and pesticides and placed new emphasis on materials damage assessment, indoor air quality (radon), and region/site specific benefits analysis. Its Economic Research Program valued reduction of pollution in wetlands, analyzed the value of various aspects of state enforcement programs, and undertook new work on the valuation of risk reduction at hazardous waste sites.

OFFICE OF STANDARDS AND REGULATIONS

1989 Program Request

The Agency requests a total of \$5,410,100 supported by 66.8 total workyears for this program, all of which will be for the Salaries and Expenses appropriation. This represents an increase of \$54,900 and no change in total workyears. The increase is for additional assistance and Paperwork Reduction Act (PRA) oversight in the collection and dissemination of data EPA must collect under Title III.

OSR will continue to administer and direct the Agency's internal regulation review and analysis process and to provide quality control and clearance for all EPA reporting and recordkeeping required of the public. It will review regulatory and policy documents for compliance with Executive Orders (E.O.) 12291 and 12498, the Regulatory Flexibility Act, the amended PRA, and Federal Register requirements. OSR will aid programs in improving survey design, sampling, monitoring, and data analysis methods as well as support implementation of Data Quality Objectives. It also will adapt the statistical resources allocation model (enforcement targeting) for broader application in additional program areas. OSR will continue to promote the use of consultative and consensual activities in issue resolution and decision-making and negotiation as an alternative to conventional rule-making where appropriate. Regulatory innovations will focus on waste minimization/management and safer pesticides. Pesticides support will emphasize a generic approach to risk reduction, e.g., integrated pest management and clustering of pesticides for analysis by use, so that additional resources may be devoted to biotechnology issues such as tracking, monitoring, and emergency response strategies. Analyses in the area of toxic substances will focus on policy development.

1988 Program

In 1988, the Agency is allocating a total of \$5,355,200 supported by 66.8 total workyears for this program, all of which is from the Salaries and Expenses appropriation.

With these resources, OSR is ensuring compliance with the Executive Orders, the amended PRA, and other requirements by continuing its technical, statistical and policy review of existing regulations as well as those under development. OSR also is ensuring effective and efficient information collection and analysis, providing support to the program and Regional offices in the collection of data and statistical analysis of data for regulatory decisions, and investigating application of its resource allocation model to additional program areas. OSR is further

reinforcing and institutionalizing the new Steering Committee process and continuing to promote the use of consultative and consensual techniques. All review of individual bubbles and work on pollution trading is being completed and the focus is turning toward regulatory innovations in the areas of solid waste and pesticides. OSR is continuing oversight and support of the Office of Pesticides and Toxics Substances contributing to the development of methods for streamlining the new chemicals program; improvements in the Agency strategy for controlling existing chemicals, and demonstration of the use of a cluster approach in performing comparative risk/benefit analyses.

1987 Accomplishments

In 1987, the Agency obligated a total of \$4,754,400 supported by 66.2 total workyears for this program, all of which was from the Salaries and Expenses appropriation.

OSR managed the Agency's regulation development and review processes, ensured Agency compliance with the PRA, ensured the technical quality of Agency regulations and policies, and improved the statistical quality of Agency regulations and data collection and analysis activities. OSR also pilot-tested the inspection allocation model developed in 1986 for the Stationary Source program to demonstrate its value in conserving enforcement resources and further refined the statistical maximum likelihood algorithm enabling the Agency to successfully analyze teratology data. OSR also developed and implemented substantial improvements in the Steering Committee process, completed three negotiated rules and further demonstrated the value of various consensual and consultative techniques in dispute resolution and management decision-making. In addition, OSR continued to work on specific chemicals of concern, e.g., chlorinated solvents, asbestos, and formaldehyde, and contributed substantially to developing the concept of integrated pest management and pilot testing a cluster approach to more focused pesticide cancellation decisions. A strategy for handing off implementation of the Emissions Trading Policy to the program office was developed and approaches to waste minimization explored.

OFFICE OF MANAGEMENT SYSTEMS AND EVALUATION

1989 Program Request

The Agency requests a total of \$2,945,600 supported by 52.6 total workyears for this program, all of which will be for the Salaries and Expenses appropriation. This represents an increase of \$141,900 and no change in total workyears. The increase is to improve the Agency's planning and priority setting process.

OMSE will continue to manage and refine the Agency's planning and management system in 1989, supporting the Agency's management reviews, assuring an accurate information base on Agency performance, focusing on improving cross-media guidance, working for a more effective role for States in planning and priority setting, and assisting the Agency in building its capacity to set priorities on the basis of risk. In the area of Regional risk management capacity, OMSE will work to integrate the Agency's data management programs in the Regions with their evolving roles in risk management and demonstrate ways to use existing environmental data for priority setting. Cross-media evaluations will address issues such as hazardous waste and hazardous substance impacts on surface water and agricultural chemicals in groundwater. OMSE also will study ways to strengthen State/EPA programs in such areas as control of air toxics emissions, emergency planning, and ground water protection and evaluate progress in solid waste management and waste minimization.

1988 Program

In 1988, the Agency is allocating a total of \$2,803,700 supported by 52.6 total workyears for this program, all of which is from the Salaries and Expenses appropriation.

With these resources, OMSE is managing the Agency's planning and management systems to ensure that resources are directed at the most significant environmental results, and to maintain an active information system on the Agency's performance. Emphasis is on increasing consistency in the guidance document across programs, better reflecting Regional and State variability in programs and needs, and furthering development of environmental indicators in the guidance process. OMSE is coordinating the Agency's 1990 planning process with an emphasis on consolidating the improvements now underway in cross-media cooperation, Regional flexibility, resolution of State/EPA issues in technology transfer and program delivery, and building risk management capability in the Regions. OMSE is preparing an update of the 1984 document, "Environmental Progress and Challenges", the only national report on environmental progress and EPA programs. Program evaluations already completed or in progress include examination of EPA's experience with negotiated rulemaking, indoor radon problems, risk communication, and followup to OMSE's review of EPA/State relations and performance. OMSE also is reviewing the benefit of a waste minimization clearinghouse.

1987 Accomplishments

In 1987, the Agency obligated a total of \$2,719,000 supported by 53.2 total workyears for this program, all of which was from the Salaries and Expenses appropriation.

OMSE improved the Agency's longer-term planning process by focusing on five strategic planning initiatives, increasing the level of analysis of 3-to-5 year planning issues, and managing a priority-setting process which identified the Agency's most significant challenges. OMSE supported the Agency's quarterly management reviews and Regional reviews with staff work on Agency performance and management issues, and increased the scope and breadth of the bi-weekly action tracking meetings with senior managers. In the area of Regional planning and analysis capability, OMSE completed two Regional pilot studies to assess the extent to which the Agency's management systems provide adequate flexibility to the Regions to pursue high risk environmental problems unique to each Region. OMSE completed major studies of the Agency's planning and management system and of State/EPA delegation and oversight practices, leading to the current focus on higher quality performance measures and balanced reporting systems. OMSE reviewed Agency oversight of public water supply programs and led an initiative to implement the Agency's management themes, including special emphasis on the issue of State involvement in planning and management. In accordance with EPA's increasing emphasis on risk assessment and management, OMSE conducted an in-depth study of the Agency's use of risk advisories and a review of risk-based decision-making in the hazardous waste program.

AGENCY MANAGEMENT

Office of Administration and Resource Management

		ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	BUDGET REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988

(DOLLARS IN THOUSANDS)							

PROGRAM							

Program Management - Administration							
Salaries & Expenses		\$1,462.2	\$1,448.7	\$1,314.5	\$1,314.5	\$1,381.1	\$66.6
TOTAL		\$1,462.2	\$1,448.7	\$1,314.5	\$1,314.5	\$1,381.1	\$66.6
Financial Management Headquarters							
Salaries & Expenses		\$6,351.0	\$6,308.0	\$6,188.7	\$6,188.7	\$6,478.4	\$289.7
TOTAL		\$6,351.0	\$6,308.0	\$6,188.7	\$6,188.7	\$6,478.4	\$289.7
Office of the Comptroller							
Salaries & Expenses		\$5,613.6	\$6,253.6	\$6,439.9	\$6,439.9	\$6,562.6	\$122.7
Operations, Research and Facilities		\$38.9					
TOTAL		\$5,652.5	\$6,253.6	\$6,439.9	\$6,439.9	\$6,562.6	\$122.7
Contracts and Grants Management							
Salaries & Expenses		\$10,049.3	\$10,681.8	\$10,335.5	\$10,335.5	\$10,484.5	\$149.0
TOTAL		\$10,049.3	\$10,681.8	\$10,335.5	\$10,335.5	\$10,484.5	\$149.0
Personnel and Organization Services							
Salaries & Expenses		\$8,007.6	\$8,153.0	\$7,646.9	\$7,646.9	\$7,683.8	\$36.9
TOTAL		\$8,007.6	\$8,153.0	\$7,646.9	\$7,646.9	\$7,683.8	\$36.9
Facilities & Management Services							
Salaries & Expenses		\$6,573.0	\$7,245.5	\$6,829.6	\$6,829.6	\$7,033.1	\$203.5
TOTAL		\$6,573.0	\$7,245.5	\$6,829.6	\$6,829.6	\$7,033.1	\$203.5

AGENCY MANAGEMENT

Office of Administration and Resource Management

		ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	BUDGET REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988

(DOLLARS IN THOUSANDS)							
Information Systems & Services							
Salaries & Expenses		\$8,073.2	\$8,087.9	\$7,813.7	\$7,813.7	\$8,313.7	\$500.0
	TOTAL	\$8,073.2	\$8,087.9	\$7,813.7	\$7,813.7	\$8,313.7	\$500.0
Office of Human Resources Management							
Salaries & Expenses		\$1,593.5	\$1,455.6	\$1,587.1	\$1,587.1	\$1,945.8	\$318.7
	TOTAL	\$1,593.5	\$1,455.6	\$1,587.1	\$1,587.1	\$1,945.8	\$318.7
Administrative Management - Title III							
Salaries & Expenses				645.3	645.3	645.5	\$.2
	TOTAL			645.3	645.3	645.5	\$.2
TOTAL:							
Salaries & Expenses		\$47,723.4	\$49,634.1	\$48,801.2	\$48,801.2	\$50,528.5	\$1,727.3
Operations, Research and Facilities		\$38.9					
	TOTAL	\$47,762.3	\$49,634.1	\$48,801.2	\$48,801.2	\$50,528.5	\$1,727.3
Office of Administration and Resource Management							
PERMANENT WORKYEARS							

Program Management - Administration		22.4	21.0	21.0	21.0	22.0	1.0
Financial Management Headquarters		125.8	137.7	137.7	135.7	141.0	5.3
Office of the Comptroller		67.3	69.7	68.7	71.0	72.0	1.0

AGENCY MANAGEMENT

Office of Administration and Resource Management

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	BUDGET REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988

	(DOLLARS IN THOUSANDS)					
Contracts and Grants Management	211.2	226.0	228.6	222.6	226.1	3.5
Personnel and Organization Services	157.3	174.9	174.9	158.3	173.4	15.1
Facilities & Management Services	161.2	175.3	175.3	167.5	177.5	10.0
Information Systems & Services	137.3	146.2	152.2	146.6	150.7	4.1
Office of Human Resources Management	24.5	23.2	24.2	22.9	24.9	2.0
Administrative Management - Title III			2.7	2.7	2.7	
TOTAL PERMANENT WORKYEARS	907.0	974.0	985.3	948.3	990.3	42.0
TOTAL WORKYEARS	-----					
Program Management - Administration	24.4	21.0	21.0	21.8	22.0	.2
Financial Management Headquarters	131.9	137.7	137.7	141.0	141.0	
Office of the Comptroller	71.2	69.7	68.7	73.0	72.0	-1.0

AGENCY MANAGEMENT

Office of Administration and Resource Management

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	BUDGET REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988

(DOLLARS IN THOUSANDS)						
Contracts and Grants Management	217.2	226.0	228.6	226.3	226.1	-.2
Personnel and Organization Services	176.4	174.9	174.9	173.4	173.4	
Facilities & Management Services	171.0	175.3	175.3	173.5	177.5	4.0
Information Systems & Services	147.7	146.2	152.2	150.7	150.7	
Office of Human Resources Management	24.7	23.2	24.2	23.9	24.9	1.0
Administrative Management - Title III			2.7	2.7	2.7	
TOTAL WORKYEARS	964.5	974.0	985.3	986.3	990.3	4.0

MANAGEMENT AND SUPPORT

Agency Management

Office of Administration and Resources Management

Budget Request

The Agency requests a total of \$50,528,500 supported by 990.3 total workyears for 1989, an increase of \$1,727,300 and an increase of 4.0 total workyears from 1988. All of the request is for the Salaries and Expenses appropriation.

Program Description

The Office of Administration and Resources Management (OARM) performs administrative management and support functions to all of EPA, and provides a full range of administrative services to Headquarters and our two largest non-Regional field operations -- Research Triangle Park (RTP), North Carolina and Cincinnati, Ohio. The Office also controls the Agency's central planning and budgeting process which allocates workyear and financial resources among program areas and ensures adequate funds control. In addition, the Office directs a Human Resources Management program for all Agency employees.

The Immediate Office of the Assistant Administrator provides overall program direction and resource management for all Office activities, as well as Agencywide administrative support policy. There are six organizational components under the Assistant Administrator for Administration and Resources Management: Office of the Comptroller, Office of Administration, Office of Information Resources Management, Office of Human Resources Management, and the Offices of Administration at Research Triangle Park and Cincinnati. The Office of the Comptroller provides Agencywide financial services as well as budget development and execution and Agencywide internal control activities. The Office of Administration provides services in the areas of personnel administration, facilities management, organizational analysis, contracts and grants management, and occupational health and safety. The Office of Information Resources Management directs the Agency's information resources management program and library services. The Office of Human Resources Management provides workforce planning, career development, and executive management services to EPA employees. Our RTP and Cincinnati offices provide administration services to the environmental programs at EPA's major research locations. A brief description of each of the program elements included in OARM follows:

Program Management - Administration -- This component consists of the Assistant Administrator's immediate office which provides oversight and planning functions, performs all of the budgeting and resource management activities for OARM, and provides centralized analysis and reporting on internal control activities and OARM's portion of the Administrator's Action Tracking and Strategic Planning and Management Systems.

Financial Management - Headquarters -- This component includes financial management, financial policy development, accounting, and financial reporting activities for Headquarters and field offices.

Office of the Comptroller -- This component develops and operates EPA's program planning and budgeting system; analyzes and prepares Agency budgets for submission to Congress and the Office of Management and Budget (OMB); maintains the Agency's allocation, control and review system for all workyear and financial resources; and oversees EPA's management efficiency programs.

Contracts and Grants Management -- This component establishes Agencywide contracts and grants policy, awards and manages Headquarters grants and other financial assistance programs, and awards and administers contracts and small purchases at Headquarters, Cincinnati and Research Triangle Park.

Personnel and Organization Services -- This component provides personnel services at Headquarters, Cincinnati and Research Triangle Park, as well as Agencywide management analysis, and occupational health and safety functions.

Facilities and Management Services -- This component provides facilities management services to EPA operations in Headquarters, Cincinnati and Research Triangle Park.

Information Systems and Services -- This component provides Agencywide automated data processing (ADP) systems management as well as library services at Headquarters, Cincinnati and Research Triangle Park.

Administrative Management - Title III -- This component provides administrative services that support the Title III program with emphasis on information management requirements.

Human Resources Management -- This component provides Agencywide workforce planning, career development, and executive management services to EPA employees.

PROGRAM MANAGEMENT - ADMINISTRATION

1989 Program Request

The Agency requests a total of \$1,381,100 supported by 22.0 total workyears for this program, all of which will be for the Salaries and Expenses appropriation. This represents an increase of \$66,600 and .2 total workyears from 1988. The increase will support additional operating costs. In 1989, the Office will continue to provide guidance and direction as well as program and administrative support for OARM, direct and manage OARM's resources, administer and report on OARM's portions of the Administrator's Action Tracking System and the Strategic Planning and Management System, and conduct strategies to enhance the efficiency and effectiveness of the Agency. This Office will also coordinate and consolidate OARM's internal control reporting, ensure compliance with the Freedom of Information Act and Agency audit recommendation, and oversee OARM information management needs.

1988 Program

In 1988, the Agency is allocating a total of \$1,314,500 supported by 21.8 total workyears for this program, all of which is from the Salaries and Expenses appropriation. These resources are used for overall policy direction and guidance to the Agency's management programs, budget development and execution, review of organization and consolidation issues, continued strengthening of EPA's financial, budgetary, contracts and information resources management programs, as well as initiation of management effectiveness strategies within the Agency.

1987 Accomplishments

In 1987, the Agency obligated a total of \$1,462,200 supported by 24.4 total workyears for this program all of which was from the Salaries and Expenses appropriation. These resources were used to provide Office-wide management and policy direction, manage the development and execution of OARM's budget, provide Action Tracking and Strategic Planning and Management reports, coordinate internal control reporting and responses to Freedom of Information Act requests, and conduct special analyses and projects on Agencywide management issues.

FINANCIAL MANAGEMENT - HEADQUARTERS

1989 Program Request

The Agency requests a total of \$6,478,400 supported by 141.0 total workyears for this program, all of which will be for the Salaries and Expenses appropriation. This represents an increase of \$289,700 and no change in total workyears from 1988. The increase will support a new financial management system. The office's priority for 1989 is to implement an Integrated Financial Management System in support of OMB Circular A-127. The installation will require additional data analysis, module testing, and policies and procedures; contract management support; and training of Headquarters and Regional staff. Other initiatives include: (1) strengthening the integrity of basic operations by supporting initiatives that improve the delivery of financial services to clients and implement strong quality assurance for all functions and locations; (2) improving analytic and reporting capabilities by developing a program directed at improving financial data analysis and enhance reporting capabilities; and (3) maintaining a long range strategic planning program to enable the Division to identify future objectives and achieve them in a planned and logical manner. This request will also allow Headquarters, Cincinnati, Las Vegas and RTP offices to provide necessary financial accounting and fiscal services.

1988 Program

In 1988, the Agency is allocating a total of \$6,188,700 supported by 141.0 total workyears for this program, all of which is from the Salaries and Expenses appropriation. These resources provide a full array of financial services to EPA managers, including: payroll, accounting, debt collection, accounts payable and policy guidance. This program also manages the Agency's Financial Management System. The 1988 program emphasis is on implementing the Office of Management and Budget's Circular A-127 requirements, implementing Section 4 of the Federal Managers' Financial Integrity Act of 1982, increasing the timeliness of payments processed as required by the Prompt Payment Act, exploring further cash management initiatives, and bringing the Financial Management System into full compliance with General Accounting Office standards.

1987 Accomplishments

In 1987, the Agency obligated a total of \$6,351,000 supported by 131.9 total workyears, all of which was from the Salaries and Expenses appropriation. With these resources, the Agency improved the financial services provided by Headquarters and Research Triangle Park financial operations, developed standard quality assurance programs for the Agency, developed a long-term planning process for the Financial Management System, completed a Comptroller Directives System for consolidation of all financial policies and procedures, and transferred the software programs to operate the Financial Management System to the National Computer Center.

OFFICE OF THE COMPTROLLER

1989 Program Request

The Agency requests a total of \$6,562,600 supported by 72.0 total workyears for this program, all of which will be for the Salaries and Expenses appropriation. This represents an increase of \$122,700 and decrease of 1.0 total workyear from 1988. The increase in funds will support the continued implementation of OMB Circular A-127, a major initiative which will integrate and improve the Agency's financial management systems and support of the Agency's privatization efforts. These efforts will encourage privatization of activities which can be more efficiently operated by the private sector. The decrease reflects management efficiencies and productivity improvements.

These resources will provide the Office of the Comptroller with the capabilities to perform all mandatory activities associated with OMB and Congressional budget submissions for 1990 and 1991, provide budget analyses and reports to Agency program Offices through the Resource Planning and Budgeting System, and maintain an allocation, control and review system for all workyear and financial resources. The Office will continue its focus on maintaining of EPA's Productivity Improvement Program, which will reduce costs and enhance program effectiveness across the Agency. The Comptroller will also continue to implement the Federal Managers' Financial Integrity Act, and implement OMB Circular A-76.

1988 Program

In 1988, the Agency is allocating a total of \$6,439,900 supported by 73.0 total workyears for this program, all of which is from the Salaries and Expenses appropriation. With these resources the Office of the Comptroller develops current and outyear budget guidance to program and Regional offices, analyzes budget issues, develops and implements Agency budget policy, and administers and provides policy guidance to EPA managers on a range of fiscal concerns.

1987 Accomplishments

In 1987, the Agency obligated a total of \$5,652,500 supported by 71.2 total workyears for this program, all of which was from the Salaries and Expenses appropriation. With these resources, this program managed the development of the 1988 Operating Plans, provided budget and policy guidance to Program and Regional offices for the 1989 budget request, performed oversight of audit resolution and follow-up, implemented the Federal Managers' Financial Integrity Act, and continued EPA's Productivity Improvement Program.

CONTRACTS AND GRANTS MANAGEMENT

1989 Program Request

The Agency requests a total of \$10,484,500 supported by 226.1 total workyears for this program, all of which will be for the Salaries and Expenses appropriation. This represents an increase of \$149,000 and a decrease of .2 total workyears from 1988. The increase will provide for additional contract support. The decrease is due to management efficiencies. In the contracts area, the request will enable the Agency to process and award new contracts and purchase orders, manage and close out existing contracts, evaluate contractor cost proposals, process contract terminations and claims, and provide technical review, policy compliance, and administrative oversight and management to the three contracting and purchasing offices in Headquarters, Cincinnati, and Research Triangle Park (RTP). In the grants area, these funds will allow the Agency to develop and interpret policy and procedural guidance for Agencywide assistance programs, award and administer Headquarters grants and loans, cooperative agreements, and interagency agreements, respond to requests for assistance from Regions and Federal assistance recipients, continue to modify, update, and simplify our assistance regulations, continue inhouse audit and cost analyses, and noncompliance efforts against program participants who abuse the privileges of Federal assistance, and address OMB Circular A-127 requirements.

1988 Program

In 1988, the Agency is allocating a total of \$10,335,500 supported by 226.3 total workyears for this program, all of which is from the Salaries and Expenses appropriation. These resources are being used to perform a full range of grants and contracts activities that include awarding and administering contracts, grants,

loans, purchase orders, and interagency agreements. This also includes negotiating indirect cost rates, processing terminations and claims, managing contracting offices at Headquarters, Cincinnati and RTP, developing suspension and debarment cases under EPA assistance and procurement programs, addressing A-127 initiatives, developing policy, internal review in both the contracts and grants areas, developing a new automated assistance document system for the Regions, and providing project contracting officer training.

1987 Accomplishments

In 1987, the Agency obligated a total of \$10,049,300 supported by 217.2 total workyears for this program, all of which was from the Salaries and Expenses appropriation. The major accomplishments in this program area included increased emphasis on contract management, continued implementation of the Federal Acquisition Regulation, improvement of the contract planning system and automated procurement and grants document system, issuance of additional awards for the Asbestos School Hazard Abatement Program, development of the Grants Information System Management Council, continued to simplification of grants procedures, and the taking of noncompliance actions against and the recovery of Federal funds from program participants who abuse the privileges of Federal assistance.

PERSONNEL AND ORGANIZATION SERVICES

1989 Program Request

The Agency requests a total of \$7,683,800 supported by 173.4 total workyears for this program, all of which will be for the Salaries and Expenses appropriation. This represents an increase of \$36,900 and no change in total workyears from 1988. The increase supports additional operating costs. This program will continue to perform aggressive and client-oriented personnel services and direction in the areas of recruitment, position management, classification, performance management, pay administration, personnel and payroll processing, labor-management and employee-management relations, personnel information systems management, equal opportunity employment, and technical assistance and advisory services. Efforts will also focus on performing management and organization improvement analyses, managing delegations of authority and reorganizations, developing Agency forms, overseeing EPA public advisory committees, and directing the Agency's directives system. Finally, the program will continue coordination and management of Agencywide health and safety programs, and performance of environmental compliance audits at EPA facilities.

1988 Program

In 1988, the Agency is allocating a total of \$7,646,900 supported by 173.4 total workyears for this program, all of which is from the Salaries and Expenses appropriation. These resources support high quality and responsive personnel services, implementation of human resources initiatives including improvement to the Performance Management System and development of a multi-faceted training and development program for managers and staff at all levels, a cross-media developmental exchange package, a comprehensive program to provide continued assistance on the Federal Employee Retirement System (FERS), and Civil Service Reform System (CSRS) Retirement programs. Resources continue to support improved utilization of personnel data information systems, a more focused position management program, and continued support to meet the Agency's specialized recruitment needs. The resources also provide for performance of additional management reviews with the primary focus on Headquarters offices, expansion of management and organization services to Regional and Headquarters offices, performance of environmental audits for EPA facilities, and implementation of Agency health and safety programs.

1987 Accomplishments

In 1987, the Agency obligated a total of \$8,007,600 supported by 176.4 total workyears for this program, all of which was from the Salaries and Expenses appropriation. The Agency continued efforts to meet specialized and hard-to-fill recruitment needs, completed a wide range of internal control improvements, issued a comprehensive Performance Management System (PMS) planning package and institutionalized other PMS system improvements, developed brochures for supervisors and employees on hiring authorities and the handicapped employment program, and expanded automated personnel data bases and improved information systems capabilities. Also performed were environmental compliance audits for EPA facilities and management assistance was provided to virtually every EPA office resulting in organizational and management improvements ranging from strengthened management processes to streamlined organizational arrangements.

FACILITIES AND MANAGEMENT SERVICES

1989 Program Request

The Agency requests a total of \$7,033,100 supported by 177.5 total workyears for this program, all of which will be for the Salaries and Expenses appropriation. This represents an increase of \$203,500 and an increase of 4.0 total workyears from 1988. The increase reflects new Headquarters' Delegation Authority received from the General Services Administration. With these resources the Agency will administer the Nationwide Support, Headquarters Support, and Buildings and Facilities budgets, provide operational support and housekeeping services, and monitor and direct contractor resources under support contracts.

1988 Program

In 1988, the Agency is allocating a total of \$6,829,600 supported by 173.5 total workyears for this program, all of which is from the Salaries and Expenses appropriation. These funds are being used to provide timely, high quality and cost effective facilities management and support services for EPA facilities in Washington, Research Triangle Park (RTP), North Carolina and Cincinnati, Ohio. These resources provide ongoing services in the areas of property and space management, building operational services, office support services, real estate and lease enforcement support, transportation management, printing and publication operations, security services, and facilities design and construction management.

1987 Accomplishments

In 1987, the Agency obligated a total of \$6,573,000 supported by 171.0 total workyears for this program, all of which was from the Salaries and Expenses appropriation. With these resources the Agency provided responsive facilities management services to EPA facilities in Washington, RTP and Cincinnati, established better administrative controls over property management, effectively managed space needs, and provided effective security services. In 1987, the Agency and GSA signed a Delegation of Authority which transferred authority to the Agency for operation and lease administration of the Waterside Mall and Fairchild Buildings. In addition, this program supervised the design and start of construction of the radiation laboratory in Montgomery, Alabama and the full containment facility in Cincinnati, Ohio.

INFORMATION SYSTEMS AND SERVICES

1989 Program Request

The Agency requests a total of \$8,313,700 supported by 150.7 total workyears for this program, all of which will be for the Salaries and Expenses appropriation. This represents an increase of \$500,000 and no change in total workyears from 1988. The increase will provide for increased operating costs. The requested resources will enable the Agency to maintain current, centrally administered information systems and services in support of EPA programs and the public. This program provides the personnel to manage the Agency's central and distributed computing and data transmission network, its major administrative and programmatic data systems, and library services. In addition, these resources will permit the Agency to continue to strengthen information resources management including long and short-range Automated Data Processing (ADP) planning, ADP security, records management, software and data standards, and internal controls on information resources. Emphasis is also placed on technical support for the Regional ADP Modernization effort and improving data sharing with State environmental agencies.

1988 Program

In 1988, the Agency is allocating a total of \$7,813,700 supported by 150.7 total workyears for this program, all of which is from the Salaries and Expenses appropriation. Continued efforts will be devoted to improve information systems planning by EPA programs, strengthen information security, and to continue the effort to implement and update the Agency financial management systems in response to GAO and Executive Branch requirements. A major effort to integrate State/EPA data systems and improve the exchange of environmental data continues to be expanded to all the States.

1987 Accomplishments

In 1987, the Agency obligated a total of \$8,073,200 supported by 147.7 total workyears for this program, all of which was from the Salaries and Expenses appropriation. During 1987, EPA continued to update its accounting systems in response to the General Accounting Office (GAO) requirements, and continued support of the regional ADP modernization program. Significant progress was made in the internal information security program and in the establishment of internal information management policy guidelines. Phase I of our State/EPA data management program was successfully implemented in eleven more States. This program was implemented previously in the State of Georgia.

ADMINISTRATIVE MANAGEMENT - TITLE III

1989 Program Request

The Agency requests a total of \$645,500 supported by 2.7 total workyears for this program, all of which will be from the Salaries and Expenses appropriation. This represents an increase of \$200 and no change in total workyears from 1988. The increase will provide for increased operating costs. The activities planned reflect the transition of the program from its implementation phases to full operation in some areas such as Section 313 (the Toxics Emission Inventory Report) and the continued design and implementation activities for reporting requirements resulting from other sections of the Emergency Planning and Community Right-to-Know Act.

1988 Program

In 1988, the Agency is allocating a total of \$645,300, supported by 2.7 total workyears for this program, all of which is from the Salaries and Expenses appropriation. This funding provides for the implementation of information systems to support this program. In addition, this supports continued analysis of requirements, investment in new or enhanced computer systems, and the implementations of new applications. The character of the data in this activity is multi-media; therefore, this program will stress that cross-program data and systems be integrated to the maximum feasible extent, in order to make cost effective use of existing capabilities.

1987 Accomplishments

In 1987, the Agency obligated a total of \$178,100 supported by .3 total workyears for this program, all of which was from the Hazardous Substance Superfund appropriation. Resources provided for the initial start-up of the program which included initial requirements analysis and the start of new applications.

OFFICE OF HUMAN RESOURCES MANAGEMENT

1989 Program Request

The Agency requests a total of \$1,945,800 supported by 24.9 total workyears for this program, all of which will be for the Salaries and Expenses appropriation. This represents an increase of \$358,700 an increase of 1.0 total workyears from 1988. The increase will support in-house training programs. This level of funding will support OHRM's efforts to institutionalize human resource efforts, including:

- 1) increasing the number of program offices that engage in Human Resources planning;
- 2) continuing efforts to ensure that EPA has the highest quality supervisors, managers and executives;
- 3) providing strategies to program offices seeking to improve employee and organizational effectiveness and productivity;
- 4) evaluating the effectiveness of the Agency's human resources management efforts;
- 5) linking the EPA Institute concept to all internal training Agencywide, and state environmental training; and
- 6) continuing to support ongoing programs such as the Senior Executive Service and the Presidential Management Intern Programs.

1988 Program

In 1988, the Agency is allocating a total of \$1,587,100 supported by 23.9 total workyears for this program, all of which is from the Salaries and Expenses appropriation. These resources are being used to build a career development system at EPA, provide workforce planning tools, expand the in-house training capacity through the Institute, and establish criteria for managerial excellence and develop training and policies to match those criteria. In addition, these resources are used to perform personnel operations for Senior Executive Service (SES) members, and support the operations of the Candidate Development Program and the Presidential Management Program.

1987 Accomplishments

In 1987, the Agency obligated a total of \$1,593,500 supported by 24.7 total workyears for this program, all of which was from the Salaries and Expenses appropriation. During the third year of program operation two workforce planning studies were undertaken; the EPA Institute was established and 20 courses were offered with 2000 employees participating; the managerial excellence criteria was used in selecting a new class for the Candidate Development Program and a job analyses of Chemists and Physical Scientists was completed.

ENVIRONMENTAL PROTECTION AGENCY

1989 Budget Estimate

Table of Contents

	<u>Page</u>
<u>MANAGEMENT & SUPPORT</u>	
REGIONAL MANAGEMENT	
Regional Management.....	MS-69
Resource Management - Regions	MS-72
Financial Management - Regions.....	MS-73
Personnel Management - Regions.....	MS-73
Administrative Management - Regions.....	MS-74
Regional Management.....	MS-75
Regional Counsel.....	MS-75
Planning, Evaluation & Analysis - Regions.....	MS-76

		REGIONAL MANAGEMENT Regional Management					
		ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988
		(DOLLARS IN THOUSANDS)					
PROGRAM							
Resource Management - Regions							
Salaries & Expenses		\$1,629.3	\$1,800.7	\$1,657.2	\$1,657.2	\$1,822.6	\$165.4
TOTAL		\$1,629.3	\$1,800.7	\$1,657.2	\$1,657.2	\$1,822.6	\$165.4
Financial Management - Regions							
Salaries & Expenses		\$2,833.0	\$3,016.9	\$2,816.7	\$2,816.7	\$3,042.7	\$226.0
TOTAL		\$2,833.0	\$3,016.9	\$2,816.7	\$2,816.7	\$3,042.7	\$226.0
Personnel Management - Regions							
Salaries & Expenses		\$3,396.9	\$3,355.5	\$3,311.3	\$3,311.3	\$3,478.0	\$166.7
TOTAL		\$3,396.9	\$3,355.5	\$3,311.3	\$3,311.3	\$3,478.0	\$166.7
Administrative Management - Regions							
Salaries & Expenses		\$6,099.2	\$6,423.7	\$6,034.8	\$6,034.8	\$6,335.0	\$300.2
TOTAL		\$6,099.2	\$6,423.7	\$6,034.8	\$6,034.8	\$6,335.0	\$300.2
Regional Management							
Salaries & Expenses		\$9,986.1	\$9,878.7	\$9,787.3	\$9,787.3	\$9,833.1	\$45.8
TOTAL		\$9,986.1	\$9,878.7	\$9,787.3	\$9,787.3	\$9,833.1	\$45.8
Regional Counsel							
Salaries & Expenses		\$3,940.5	\$4,393.6	\$4,047.5	\$4,047.5	\$4,047.5	
TOTAL		\$3,940.5	\$4,393.6	\$4,047.5	\$4,047.5	\$4,047.5	
Planning, Evaluation & Analysis - Regions							
Salaries & Expenses		\$2,401.9	\$2,801.3	\$3,117.5	\$3,117.5	\$3,561.7	\$444.2
TOTAL		\$2,401.9	\$2,801.3	\$3,117.5	\$3,117.5	\$3,561.7	\$444.2

REGIONAL MANAGEMENT
Regional Management

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988
--	----------------	----------------------------	-----------------	-----------------------------	-----------------	--

(DOLLARS IN THOUSANDS)

TOTAL:						
Salaries & Expenses	\$30,286.9	\$31,670.4	\$30,772.3	\$30,772.3	\$32,120.6	\$1,348.3
Regional Management TOTAL	\$30,286.9	\$31,670.4	\$30,772.3	\$30,772.3	\$32,120.6	\$1,348.3

PERMANENT WORKYEARS

Resource Management - Regions	37.2	41.0	41.0	36.8	41.0	4.2
Financial Management - Regions	82.3	89.7	89.7	83.4	89.7	6.3
Personnel Management - Regions	88.2	93.0	93.0	84.7	93.0	8.3
Administrative Management - Regions	153.6	172.6	172.6	155.7	171.8	16.1
Regional Management	181.4	190.1	190.1	172.1	186.8	14.7
Regional Counsel	74.1	82.5	82.5	77.3	82.5	5.2
Planning, Evaluation & Analysis - Regions	51.3	60.1	80.1	75.8	80.1	4.3
TOTAL PERMANENT WORKYEARS	668.1	729.0	749.0	685.8	744.9	59.1

REGIONAL MANAGEMENT
Regional Management

ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988
----------------	----------------------------	-----------------	-----------------------------	-----------------	--

(DOLLARS IN THOUSANDS)

TOTAL WORKYEARS

Resource Management - Regions	42.4	41.0	41.0	41.0	41.0	
Financial Management - Regions	92.1	89.7	89.7	89.7	89.7	
Personnel Management - Regions	101.8	93.0	93.0	93.0	93.0	
Administrative Management - Regions	177.6	172.6	172.6	171.8	171.8	
Regional Management	206.7	190.1	190.1	187.8	186.8	-1.0
Regional Counsel	83.4	82.5	82.5	82.5	82.5	
Planning, Evaluation & Analysis - Regions	59.8	60.1	80.1	80.1	80.1	
TOTAL WORKYEARS	763.8	729.0	749.0	745.9	744.9	-1.0

MANAGEMENT AND SUPPORT

Regional Management

Budget Request

The Agency requests a total of \$32,120,600 supported by 744.9 total workyears for 1989, an increase of \$1,348,300 and a decrease of 1 total workyear from 1988. All of the request is for the Salaries and Expenses appropriation.

Program Description

Regional Management provides executive direction to the Regional offices; Regional administrative and financial services; budget development and execution; and legal and analytic support to the Regional Administrators. This program contains the following program elements:

Resource Management - Regions -- This component provides resources to develop Regional budgets and operating plans, participate in the workload analysis process, manage current year resources, and enhance resource management and control in the Regions.

Financial Management - Regions -- This component provides sound financial accounting and reporting services for the Regional offices.

Personnel Management - Regions -- This component provides basic personnel services, including staffing, classification, and training to the Regional offices.

Administrative Management - Regions -- This component includes mini-computer systems management, library support, safety, security, printing and copying, facilities management, small purchases, and other administrative functions.

Regional Management -- This component includes the Regional Administrators and their immediate staffs, public affairs, Congressional and intergovernmental liaison, as well as the basic staff functions of Civil Rights.

Regional Counsel -- This component includes the Offices of Regional Counsel which assist the Regional Administrators in ensuring that their decisions are legally defensible and consistent with national legal interpretations. They represent the Regional offices in defensive litigation activities, review Regional rulemakings, and assist States in obtaining delegation of programs.

Planning, Evaluation, and Analysis - Regions -- This component includes resources that provide analytical support to the Regional Administrators to assure the efficient and effective operation of EPA Regions. Activities include program planning, accountability reporting, program evaluation, economic analysis, and Regional participation in EPA's regulatory process.

RESOURCE MANAGEMENT - REGIONS

1989 Program Request

The Agency requests a total of \$1,822,600 supported by 41.0 total workyears, all of which will be for the Salaries and Expenses appropriation. This represents an increase of \$165,400 and no change in total workyears from 1988. This level of funding supports Regional resource management and control activities including budget and operating plan development and workload analysis. In addition, these resources will allow the Regional offices to continue implementing the Federal Managers' Financial Integrity Act and further strengthen funds control.

1988 Program

In 1988, the Agency is allocating a total of \$1,657,200 supported by 41.0 total workyears for this program, all of which is from the Salaries and Expenses appropriation. These resources are being used to conduct budgeting and resource analysis functions in the ten Regional offices.

1987 Accomplishments

In 1987, the Agency obligated a total of \$1,629,300 supported by 42.4 total workyears for this program, all of which was from the Salaries and Expenses appropriation. These resources allowed Regional Administrators to effectively and efficiently manage their resources and operating plan processes.

FINANCIAL MANAGEMENT - REGIONS

1989 Program Request

The Agency requests a total of \$3,042,700 supported by 89.7 total workyears for this program, all of which will be for the Salaries and Expenses appropriation. This represents an increase of \$226,000 and no change in total workyears from 1988. The increase supports additional operating costs. The Regions will continue conducting internal control reviews as required by the Federal Managers' Financial Integrity Act of 1982; and Cash Management Reviews, as mandated by the Deficit Reduction Act of 1984. The acquisition of microcomputers will provide the staff with the necessary tools to develop automated improvements to recurring operations. This level of funding will allow the Financial Management Offices to provide basic financial services and maintain ongoing financial management functions. The Financial Management Offices will continue to provide accounting, payment processing, billings and collections for grants, travel, payroll, contracts, purchase orders, and all other financial transactions, as well as payroll support and general ledger activities.

1988 Program

In 1988, the Agency is allocating a total of \$2,816,700 supported by 89.7 total workyears for this program, all of which is from the Salaries and Expenses appropriation. These resources are being used to provide the Regions with accounting, payment processing, payroll support, financial reporting services, and comprehensive financial management.

1987 Accomplishments

In 1987, the Agency obligated a total of \$2,833,000 supported by 92.1 total workyears for this program, all of which was from the Salaries and Expenses appropriation. With these resources, the Financial Management Offices provided accounting, payment processing, payroll support, financial reporting services, and comprehensive financial management.

PERSONNEL MANAGEMENT - REGIONS

1989 Program Request

The Agency requests a total of \$3,478,000 supported by 93.0 total workyears for this program, all of which will be for the Salaries and Expenses appropriation. This represents an increase of \$166,700 and no change in total workyears from 1988. The resources will allow Regional Personnel Offices to meet basic regulatory

requirements and maintain current service levels. These services include processing recruitment and classification actions, entering data and updates to the Agency's payroll system, providing advisory services and reorganization reviews, administering the grievance system, negotiating with unions, and managing the Performance Management and Recognition System.

1988 Program

In 1988, the Agency is allocating a total of \$3,311,300 supported by 93.0 total workyears to this program, all of which is from the Salaries and Expenses appropriation. These resources are being used to formalize local human resources management programs, provide for recruitment, staffing and classification actions, conduct position management and pay administration, process personnel and payroll transactions, administer grievance system and disciplinary action procedures, provide employment development and training, consult and negotiate with local unions, conduct special studies, and advise Regional managers on the above functions.

1987 Accomplishments

In 1987, the Agency obligated a total of \$3,396,900 supported by 101.8 total workyears for this program, all of which was from the Salaries and Expenses appropriation. With these resources, the Regional Personnel Offices provided ongoing personnel services to support the accomplishment of the Regions' program operations and goals, provided better training programs for Regional employees, and initiated of human resources management programs.

ADMINISTRATIVE MANAGEMENT - REGIONS

1989 Program

The Agency requests a total of \$6,335,000 supported by 171.8 total workyears for this program, all of which will be for the Salaries and Expenses appropriation. This represents an increase of \$300,200 and no change in total workyears from 1988. These resources will allow the Regions to provide administrative management services that include maintaining administrative information systems and minicomputer operations, ensuring ADP operations support for Regional programs, managing word processing equipment and ADP systems acquisition, and coordinating Regional records management. Development of State data management plans to ensure efficient and reliable methods of State/EPA data sharing will receive priority attention. In addition this program will continue to direct contracting and purchasing activities, ensure the safety and security of Regional personnel, manage property and supplies, provide general office services, and provide program management for all support services.

1988 Program

In 1988, the Agency is allocating a total of \$6,034,800 supported by 171.8 total workyears for this program, all of which is from the Salaries and Expenses appropriation. These resources are being used to provide the Regions with administrative management activities in the areas of information management, small purchases and procurements, health and safety, and facilities support. This program will continue to design pilot plans for improved methods for EPA and States to share environmental data.

1987 Accomplishments

In 1987, the Agency obligated a total of \$6,099,200 supported by 177.6 total workyears for this program, all of which was from the Salaries and Expenses appropriation. With these resources, the Regions provided administrative management services as well as implementation of information management plans to increase use of personal computers and integrate electronic telecommunications lines to achieve cost savings and productivity gains.

REGIONAL MANAGEMENT

1989 Program Request

The Agency requests a total of \$9,833,100 supported by 186.8 total workyears for this program, all of which is for the Salaries and Expenses appropriation. This represents an increase of \$45,800 and a decrease of 1.0 total workyears. The increase will provide for increased operating costs. The decrease in workyears reflects management efficiencies. The budget request will enable the Regional offices to continue to shape and articulate policy for State and local governments; respond to inquiries from Congress, the news media and the public; establish regular communications with public interest, environmental and business groups; and maintain an effective Equal Employment Opportunity program. In 1989, Regional management emphasis will be put on information coordination and dissemination of the increasing number of information requests including Freedom of Information requests, which are increasing by approximately 20 percent per year.

1988 Program

In 1988, the Agency is allocating a total of \$9,787,300 and 187.8 total workyears for this program, all of which is from the Salaries and Expenses appropriation. Basic press services and media relations activities are being maintained as well as policy guidance and executive direction for the Region as a whole. The program will continue the processing of Freedom of Information (FOI) requests, issuing critical news releases, maintaining a Regional Equal Employment Opportunity program, responding to Congressional inquiries, and coordinating EPA involvement in major State environmental issues.

1987 Accomplishments

In 1987, the Agency obligated \$9,986,100 and 206.7 total workyears for this program, all of which was from the Salaries and Expenses appropriation. This program provided support for the Regional Administrators and their immediate staffs, as well as for the basic staff functions of public affairs, Congressional and intergovernmental activities, and the equal employment opportunity function.

REGIONAL COUNSEL

1989 Program Request

The Agency requests a total of \$4,047,500 supported by 82.5 total workyears for this program, all of which will be for the Salaries and Expenses appropriation. This represents no change from 1988.

The Offices of Regional Counsel will continue to handle defensive litigation involving principally Regional issues. They will provide advice and counsel to Regional programs; review Regional rulemaking actions; assist States by reviewing State program delegations and advising State agencies on obtaining adequate legal authorities; and support Agency contract and assistance programs through resolution of grant appeals, bid protests, and debarment and suspension actions.

1988 Program

In 1988, the Agency is allocating a total of \$4,047,500 supported by 82.5 total workyears for this program, all of which is from the Salaries and Expenses appropriation. The Offices of Regional Counsel handle defensive litigation involving principally Regional issues. They provide advice and counsel to Regional programs; review Regional rulemaking actions; and assist States by reviewing State program delegations and advising State agencies on obtaining adequate legal authorities. Additionally, the Regional Counsels continue to support Agency contract and assistance programs through resolution of grant appeals, bid protest, and debarment and suspension actions.

1987 Accomplishments

In 1987, the Agency obligated a total of \$3,940,500 supported by 83.4 total workyears for this program, all of which was from the Salaries and Expenses appropriation. In 1987, the Regional Counsels supported Agency priorities by providing legal advice and support to Regional managers and defending the Agency in litigation filed against it. They also advised on actions such as grants, contracts, and personnel actions. Additionally, Regional Counsel activities included advising State agencies on the legal requirements for assuming environmental protection programs, assisting in drafting appropriate regulatory language, and helping to negotiate and document the terms of delegation agreements.

PLANNING, EVALUATION, AND ANALYSIS - REGIONS

1989 Program Request

The Agency requests a total of \$3,561,700 supported by 80.1 total workyears for this program, all of which will be for the Salaries and Expenses appropriation. This represents an increase of \$444,200 and no change in total workyears. The increase is to support risk assessment, management, and communication activities in the Regions.

These resources will provide the ten Regional Administrators with the staff needed to perform essential planning, evaluation, and analysis activities. In addition, each Region will continue to develop an overall strategy for improving the use of risk analysis in its decision-making by: continuing to work with the Office of Policy, Planning and Evaluation (OPPE) in building priority-setting and planning processes and in improving the ability to set priorities based on risk reduction; increasing the scientific or technical risk capability in each Region; initiating programs to facilitate information exchange among State environmental agencies on new technical and management applications; developing new methods to explain environmental risks to the public; and identifying specific training needs and sponsoring classes for employees in risk-related techniques. These staffs also will support OPPE efforts to deliver risk-based, cross-media environmental protection in the field and to institutionalize the concepts of risk reduction within the Regional organizations and within the States.

1988 Program

In 1988, the Agency is allocating a total of \$3,117,500 supported by 80.1 total workyears for this program, all of which is from the Salaries and Expenses appropriation.

Necessary planning, evaluation and analysis functions are occurring including the development of two pilot projects for managing for environmental results; assessment of the Mining Wastes and Denver Air Toxics Action Plans; identification of overlapping areas of statutory regulations which effect inter-media program efforts and

coordination; evaluation of enforcement agreement implementation; and examination of State environmental agencies' funding and staffing. Three Regions (I, III, and X) are participating in OPPE's Regional integration programs. All Regions also are devoting additional resources to beginning the development of comprehensive Regional risk reduction strategies to establish the necessary institutional framework for addressing risk assessment, management, and communication. First steps involve examining the Regions' priority setting process, developing a more objective means of setting priorities (perhaps through use of Geographic Information System (GIS) technologies) and establishing a process for increased Regional participation in developing Agency priorities and assessing Regional risk reduction efforts.

1987 Accomplishments

In 1987, the Agency obligated a total of \$2,401,900 supported by 59.8 total workyears for this program, all of which was from the Salaries and Expenses appropriation, to conduct the planning, evaluation, and analysis functions in the ten Regional offices.

This funding provided necessary planning, evaluation, and analysis support in the Regions. Such support included recommending improvements to the Regional planning and accountability processes and assessing whether particular Regional programs were achieving the environmental results indicated in their management objectives; analyzing the efficiency and effectiveness of Regional and State environmental programs in meeting Agency goals and in addressing their statutory and regulatory program responsibilities; and studying Regional management systems, key processes, and organizations that focus on increasing Regional efficiency, productivity, and effectiveness. The Regional offices also began to apply risk assessment concepts to operating programs and integrate data which provides the basis for environmental decision-making and cost-effective use of resources, as evidenced in the State Pilot Projects for Improved Environmental Decision-Making in Oregon, Kansas, Kentucky, New Jersey, and Maryland.

Support Costs

ENVIRONMENTAL PROTECTION AGENCY

1989 Budget Estimate

Table of Contents

	<u>Page</u>
<u>MANAGEMENT & SUPPORT</u>	
SUPPORT COSTS	
Support Costs.....	MS-79
Professional Training.....	MS-82
Nationwide Support Services.....	MS-82
Headquarters Support Services.....	MS-83
Regional Support Services.....	MS-83
Automated Data Processing Support Costs.....	MS-84
Automated Data Processing Support - Title III.....	MS-85
Lab Support - Research & Development.....	MS-85
Lab Support - Air & Radiation.....	MS-86
Lab Support - Pesticides & Toxic Substances.....	MS-86

		SUPPORT COSTS Support Costs					
		ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988

(DOLLARS IN THOUSANDS)							
Professional Training							
Salaries & Expenses		\$493.7	\$520.4	\$520.4	\$520.4	\$520.4	
TOTAL		\$493.7	\$520.4	\$520.4	\$520.4	\$520.4	
Nationwide Support							
Services							
Salaries & Expenses		\$58,731.5	\$71,962.5	\$70,647.9	\$70,647.9	\$75,490.2	\$4,842.3
Operations, Research		\$909.4					
and Facilities							
TOTAL		\$59,640.9	\$71,962.5	\$70,647.9	\$70,647.9	\$75,490.2	\$4,842.3
Headquarters Support							
Services							
Salaries & Expenses		\$36,419.6	\$36,386.3	\$35,597.9	\$35,597.9	\$40,959.2	\$5,361.3
TOTAL		\$36,419.6	\$36,386.3	\$35,597.9	\$35,597.9	\$40,959.2	\$5,361.3
Regional Support							
Services							
Salaries & Expenses		\$33,899.5	\$25,373.6	\$28,103.9	\$28,103.9	\$30,214.5	\$2,110.6
TOTAL		\$33,899.5	\$25,373.6	\$28,103.9	\$28,103.9	\$30,214.5	\$2,110.6
Automated Data							
Processing Support							
Costs							
Salaries & Expenses		\$31,939.6	\$32,000.0	\$31,338.5	\$31,338.5	\$32,800.0	\$1,461.5
TOTAL		\$31,939.6	\$32,000.0	\$31,338.5	\$31,338.5	\$32,800.0	\$1,461.5
ADP SUPPORT - TITLE III							
Salaries & Expenses				\$808.0	\$808.0	\$825.0	\$17.0
TOTAL				\$808.0	\$808.0	\$825.0	\$17.0
Lab Support-Research &							
Development							
Salaries & Expenses		\$6,040.6	\$6,002.6	\$6,298.4	\$6,298.4	\$7,798.4	\$1,500.0
TOTAL		\$6,040.6	\$6,002.6	\$6,298.4	\$6,298.4	\$7,798.4	\$1,500.0

SUPPORT COSTS
Support Costs

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988
----- (DOLLARS IN THOUSANDS) -----						
Lab Support - Air And Radiation						
Salaries & Expenses	\$1,785.9	\$1,753.2	\$1,753.2	\$1,753.2	\$1,853.2	\$100.0
TOTAL	\$1,785.9	\$1,753.2	\$1,753.2	\$1,753.2	\$1,853.2	\$100.0
Lab Support - Pesticides & Toxic Substances						
Salaries & Expenses	\$247.0	\$251.4	\$251.4	\$251.4	\$451.4	\$200.0
TOTAL	\$247.0	\$251.4	\$251.4	\$251.4	\$451.4	\$200.0
TOTAL:						
Salaries & Expenses	\$169,557.4	\$174,250.0	\$175,319.6	\$175,319.6	\$190,912.3	\$15,592.7
Operations, Research and Facilities	\$909.4					
Support Costs	TOTAL \$179,360.6	\$174,250.0	\$175,319.6	\$175,319.6	\$190,912.3	\$15,592.7
 PERMANENT WORKYEARS -----						
Regional Support Services	6					
TOTAL PERMANENT WORKYEARS	2.5	4.0	4.0	4.0		-4.0
 TOTAL WORKYEARS -----						
Regional Support Services	6					
TOTAL WORKYEARS	2.9	4.0	4.0	4.0		-4.0

MANAGEMENT AND SUPPORT

Support Costs

Budget Request

The Agency requests a total of \$190,912,300 for 1989, an increase of \$15,592,700 from 1988. All of the request is for the Salaries and Expenses appropriation.

Program Description

The Agency Support Services components provide funds for general support to all Agency programs except Superfund. Programs under support services are:

Professional Training -- This component provides Agencywide training to executive, supervisory, secretarial, clerical, scientific and technical employees.

Nationwide Support Services -- This component provides Agencywide services for the following support functions: facilities rental and associated costs; payments to the U.S. Postal Services; Federal Telecommunications Service (FTS); nationwide security services; reimbursements to the Federal Employees' Compensation Fund; payments to the Public Health Service for personnel and administrative services for commissioned officers assigned to EPA; and contracts and Intergovernmental Agreements which support EPA's occupational health and safety program, and the finance and payroll systems.

Headquarters Support Services -- This program provides office, building, and information management services to Headquarters and the research center at Research Triangle Park (RTP), North Carolina and Cincinnati, Ohio.

Regional Support Services -- This component provides office, building, and information management services for Regional offices.

Automated Data Processing Support Costs -- This component provides computing and related data processing services to all Agency programs.

ADP Support - Title III -- This component provide systems development and operation services for the Title III program.

Lab Support - Research and Development -- This component provides support services to the Office of Research and Development's seven remote laboratories (those located outside Cincinnati, and Research Triangle Park). These costs are not covered by the Headquarters Support account, which funds similar items in Headquarters, Cincinnati, and RTP.

Lab Support - Air and Radiation -- This component provides support services to the Motor Vehicle Emissions Laboratory, the Eastern Environmental Radiation Facility, and the Las Vegas facility.

Lab Support - Pesticides and Toxic Substances -- This component provides support services to laboratories in Beltsville, Maryland and Bay St. Louis, Mississippi.

PROFESSIONAL TRAINING

1989 Program Request

The Agency requests a total of \$520,400 for this program, all of which will be for the Salaries and Expenses appropriation. There is no change from 1988. This request will maintain current training and development programs mandated by statute and the Office of Personnel Management (OPM) as well as support human resources management initiatives. At this level of funding, the Agency will continue to offer training and development to managers and support staff. Scientific and technical courses will be developed. The Institute will add to its current offerings. Employees will increase their cross-agency experiences through the rotational assignment program. Career development activities will be enhanced in order to help employees develop and maintain needed skills.

1988 Program

In 1988, the Agency is allocating a total of \$520,400 for this program, all of which is from the Salaries and Expenses appropriation. These funds are being used to build a broadly experienced and skilled cadre of EPA managers and staff through expansion of individual and organizational human resources development programs. These programs are based on comprehensive Agencywide need assignments conducted annually and review of career development plans. The EPA Institute is a major vehicle for providing cost-effective training. The core courses for the managerial curriculum and the Support staff are being delivered. The Human Resources Council and the advisory committees continue to play a vital role in identifying human resource needs and assisting the Agency in implementing initiatives.

1987 Accomplishments

In 1987, the Agency obligated a total of \$493,700 for this program, all of which was from the Salaries and Expenses appropriation. These funds were utilized to provide training in the areas of supervisory management, executive development, clerical skills, and technical and scientific development.

NATIONWIDE SUPPORT SERVICES

1989 Program Request

The Agency requests a total of \$75,490,200 for this program, all of which will be for the Salaries and Expenses appropriation. This represents an increase of \$4,842,300 from 1988. The request will cover space rental and FTS rate increases as well as cost escalations to service contracts. These funds will pay for Agencywide support costs including space rental, postage, FTS and telecommunications costs, national security, Code of Federal Regulations typesetting, unemployment compensation, workmen's compensation, health and safety studies, and personnel support for Public Health Service commissioned officers.

1988 Program

In 1988, the Agency is allocating a total of \$70,647,900 for this program, all of which is from the Salaries and Expenses appropriation. These resources are being used by the Agency to provide efficient nationwide services to the Agency workforce.

1987 Accomplishments

In 1987, the Agency obligated a total of \$59,640,900 for this program, of which \$58,731,500 was from the Salaries and Expenses appropriation and \$909,400 was from the Operations, Research, and Facilities appropriation. These resources allowed the Agency to pursue several Nationwide Support efforts in the areas of space planning, telecommunications, information security, and personal property management. These resources also assisted Regional offices in relocation and expansion moves.

HEADQUARTERS SUPPORT SERVICES

1989 Program Request

The Agency requests a total of \$40,959,200 for this program, all of which will be for the Salaries and Expenses appropriation. This represents an increase of \$5,361,300 from 1988. The increase will provide for cost increases for utilities and cost escalations to service contracts, as well as cover anticipated utility rate increases. It will also support information management services and provide ADP technical support for the State/EPA Data Management Program, the Integrated Financial Management System, and expert systems. These resources will provide ongoing Headquarters Support services including motor pool, printing and copying, telephones, utilities, facilities operations and maintenance, and ADP technical support to EPA operations in Washington, Research Triangle Park (RTP), North Carolina, and Cincinnati, Ohio.

1988 Program

In 1988, the Agency is allocating a total of \$35,597,900 for this program, all of which is from the Salaries and Expenses appropriation. These resources are being used to provide ongoing office, building, and information management services to EPA operations in Washington, RTP, and Cincinnati. With this funding level the Agency will provide critical ongoing services necessary to operate and manage EPA facilities, office supply/support services, and management information systems. Additionally, the Agency will carry-out its operating plans for new delegations of authority for lease enforcement/building operations at headquarters facilities, and will continue to refine procedures for property management/inventory control.

1987 Accomplishments

In 1987, the Agency obligated a total of \$36,419,600 for this program, all of which was from the Salaries and Expenses appropriation. These resources provided basic Headquarters Support services to EPA operations in Washington, RTP, and Cincinnati.

REGIONAL SUPPORT SERVICES

1989 Program Request

The Agency requests a total of \$30,214,500 for this program, all of which will be for the Salaries and Expenses appropriation. This represents an increase of \$2,110,600 from 1988. The increase reflects contract and rate increases in basic operating costs, and provide for the purchase of ESD lab equipment. This level of resources will provide the ten Regional offices with basic support services including printing and copying, minicomputer operations, utilities, mail, telephone, library operations, general training, office and laboratory facility maintenance, and technical support.

1988 Program

In 1988, the Agency is allocating a total of \$28,103,900 for this program, all of which is from the Salaries and Expenses appropriation. These resources are being used to provide basic office, building, and information management services to the Regions.

1987 Accomplishments

In 1987, the Agency obligated a total of \$33,899,500 for this program, all of which was from the Salaries and Expenses appropriation. These funds provided on-going support services in the Regions, including improved property management and better safety and security for EPA employees. Also, the Regions continued efforts to contract out appropriate support services, and provided minicomputer operations to increase Regional productivity.

AUTOMATED DATA PROCESSING SUPPORT COSTS

1989 Program Request

The Agency requests a total of \$32,800,000 for this program, all of which will be for the Salaries and Expenses appropriation. This represents an increase of \$1,461,500 from 1988. This increase will enable the Agency to complete the State/ EPA Data Management Telecommunications initiative begun in 1987. The final eleven State Agencies will be connected directly to the Agency's data telecommunications network (including Puerto Rico, Alaska, and Hawaii) which will allow access to centralized and distributed environmental data systems. This request also (1) covers the 1989 cost of prior year capital investments and expected operations costs for current service levels; (2) supports the implementation of the new Integrated Financial Management System designed to satisfy the requirements of A-127; and (3) provides the additional resources required for the continued implementation of the Air Program's data system (AIRS).

1988 Program

The Agency is allocating a total of \$31,338,500, all of which is from the Salaries and Expenses appropriation. These funds are being used to maintain current computing services in support of all Agency programs, exclusive of Superfund. The Agency is also completing the replacement of obsolete Regional computing with modern IBM 43XX technology and is beginning to implement a more open telecommunications architecture centered around current communications standards.

1987 Accomplishments

In 1987, the Agency obligated a total of \$31,939,600, all of which was from the Salaries and Expenses appropriation. The Agency used these funds to maintain and operate its mainframe computing systems, continue the replacement of obsolete minicomputers in the Agency's Regional Offices with modern processors that are compatible with the Agency's mainframe and telecommunications architecture, and implemented the Agency's short-term telecommunications strategy which increased bandwidth and improved concentration of data transmission. The Agency also began the implementation of its long-term intelligent workstation program by awarding a master contract for a range of compatible personal computers (PC's), and continued to support modernization of the Agency's laboratory computing resources.

ADP SUPPORT - TITLE III

1989 Program Request

The Agency requests a total of \$825,000 for this program, all of which will be for the Salaries and Expenses Appropriation. This represents an increase of \$17,000 from 1988. This funding will support the provision of ADP resources including telecommunications, equipment, and facility operations required to support this program.

1988 Program

In 1988, the Agency is allocating a total of \$808,000 for this program, all of which is from the Salaries and Expenses appropriation. These funds provide for the computing utility that will be required to process this information, including data entry, processing and telecommunications.

1987 Accomplishments

In 1987, the Agency obligated a total of \$1,245,900 for this program, all of which was from the Hazardous Substance Superfund appropriation. These funds were used to invest in additional ADP resources required to support the Title III program.

LAB SUPPORT - RESEARCH AND DEVELOPMENT

1989 Program Request

The Agency requests a total of \$7,798,400, all of which will be for the Salaries and Expenses Appropriation. This represents an increase of \$1,500,000 from 1988. These funds provide basic operation and maintenance services for ORD's seven (7) remote laboratories located in:

1. Narragansett, Rhode Island;
2. Athens, Georgia;
3. Gulf Breeze, Florida;
4. Ada, Oklahoma;
5. Duluth, Minnesota;
6. Las Vegas, Nevada; and
7. Corvallis, Oregon.

Operation and maintenance services include, but are not limited to: a) facilities operation and maintenance; b) utilities; c) equipment operations and maintenance; d) local telephone services; e) janitorial and guard services; and f) rental costs.

In 1989, increases will fund replacement of old, wornout scientific equipment which require high maintenance costs to operate. In addition, increased funding will cover higher projected operation and maintenance costs at these seven (7) remote laboratories.

1988 Program

In 1988, the Agency is allocating a total of \$6,298,400, all from the Salaries and Expenses Appropriation. These funds provide for the basic operation and maintenance services of ORD's seven (7) remote laboratories.

1987 Accomplishments

The Agency obligated \$6,040,600, all from the Salaries and Expenses Appropriation. These funds provided basic operation and maintenance services for ORD's seven (7) remote laboratories.

LAB SUPPORT - AIR AND RADIATION

1989 Program Request

The Agency requests a total of \$1,853,200 for this program, all of which is from the Salaries and Expenses appropriation. This represents an increase of \$100,000 from 1988. The increase reflects increased support costs. This program supports the Motor Vehicle Emissions Laboratory (MVEL) in Ann Arbor, Michigan; the Eastern Environmental Radiation Facility (EERF) in Montgomery, Alabama; and the Las Vegas radiation facility (LVF) in Nevada. These funds provide basic operation and maintenance support at these locations. Support provided consists of security, janitorial and maintenance services, utilities, General Services Administration vehicles, supplies and materials, and communications.

1988 Program

In 1988 the Agency is allocating \$1,753,200 to support the three laboratories, all from the Salaries and Expenses appropriation. The 1988 program is providing the same types of activities described for 1989: basic laboratory operations, maintenance, and supplies. These activities are required on a continuing basis.

1987 Accomplishments

In 1987 the Agency obligated a total of \$1,785,900 for this program, all of which was from the Salaries and Expenses appropriation. These funds provided the basic facilities operations and maintenance costs necessary to operate the three laboratories.

LAB SUPPORT - PESTICIDES AND TOXIC SUBSTANCES

1989 Program Request

The Agency requests a total \$451,400, all of which will be from the Salaries and Expenses appropriation. This represents an increase of \$200,000 from 1988. These funds will be used for basic facilities and operation and maintenance costs for the laboratories in Beltsville, Maryland and Bay St. Louis, Mississippi. These costs include utilities, security, communications, warehousing, custodial services, and building maintenance. The increase will provide for purchase of new laboratory equipment to replace equipment which is obsolete or no longer cost-effective to repair, and cover increasing maintenance costs for existing equipment and for items such as building biotechnology capacity and analyzing unique products which cannot be validated with traditional analytical laboratory instrument.

1988 Program

In 1988, the Agency is allocating a total of \$251,400, all of which is from the Salaries and Expenses appropriation. The 1988 program supports the facilities, operations, and maintenance costs of the Office of Pesticides and Toxic Substances laboratories.

1987 Accomplishments

In 1987, the Agency obligated a total of \$247,000, all of which was from the Salaries and Expenses appropriation. The funds were used to provide general support and maintenance of the laboratories.

**BUILDINGS
AND FACILITIES**

ENVIRONMENTAL PROTECTION AGENCY

1989 Budget Estimate

Table of Contents

	<u>Page</u>
<u>BUILDINGS & FACILITIES</u>	BF-1
Buildings & Facilities.....	BF-4
New Facilities.....	BF-5
Repairs & Improvements.....	BF-6

BUILDINGS AND FACILITIES

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988

(DOLLARS IN THOUSANDS)						
Appropriation	\$13,261.7	\$6,000.0	\$23,500.0	\$23,500.0	\$8,000.0	-\$15,500.0
OUTLAYS	\$5,059.9	\$7,733.0	\$9,995.0	\$9,995.0	\$18,110.0	\$8,115.0
AUTHORIZATION LEVELS	Authorization is by virtue of the Appropriation Act.					

BUILDINGS AND FACILITIES

OVERVIEW AND STRATEGY

The Buildings and Facilities appropriation funds the design, construction, repair and improvement of buildings occupied by EPA. The Agency currently has ten Regional offices, three large research and development laboratories, several field stations with laboratory facilities and a large headquarters complex.

This program provides a safe and healthful work environment for EPA employees by providing for maintenance, repair or replacement of our facilities. Major efforts are directed towards implementing intermediate and long-range plans which assess alternative housing options for EPA operations, as well as continuing a repair program that protects the investment in EPA's real property holdings. Resources are also used to upgrade and modify current facilities to more adequately and efficiently address Agency programs. Particular emphasis will be placed on environmental compliance efforts in EPA facilities where modifications are needed to accommodate storage of hazardous materials and removal of asbestos.

BUILDINGS AND FACILITIES

Buildings and Facilities

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988

(DOLLARS IN THOUSANDS)						
PROGRAM						

New Facilities						
Buildings & Facilities	\$9,322.9		\$17,500.0	\$17,500.0	\$1,900.0	-\$15,600.0
TOTAL	\$9,322.9		\$17,500.0	\$17,500.0	\$1,900.0	-\$15,600.0
Repairs & Improvements						
Buildings & Facilities	\$3,938.8	\$6,000.0	\$6,000.0	\$6,000.0	\$6,100.0	\$100.0
TOTAL	\$3,938.8	\$6,000.0	\$6,000.0	\$6,000.0	\$6,100.0	\$100.0
TOTAL:						
Buildings & Facilities	\$13,261.7	\$6,000.0	\$23,500.0	\$23,500.0	\$8,000.0	-\$15,500.0

BUILDINGS AND FACILITIES

Budget Request

The Agency requests \$8,000,000 for the Buildings and Facilities appropriation, a decrease of \$15,500,000 from 1988.

Program Description

This program funds the design and construction of new EPA facilities, as well as necessary repairs and improvements to buildings already occupied by EPA. The Agency is currently upgrading its facilities by improving heating and ventilating systems, enlarging hazardous waste handling areas, improving fire detection systems, providing interior and exterior facility repairs, upgrading electrical systems, performing engineering and planning studies, and making emergency repairs. The Agency is designing new laboratories in Newport, Oregon and Chapel Hill, North Carolina; extensively renovating space for a laboratory in Edison, New Jersey; constructing a new radiation laboratory in Montgomery, Alabama; and, a full containment facility in Cincinnati, Ohio. This program contains the following two elements:

New Facilities -- This includes architectural-engineering and design services and building costs for the construction of new Federally owned facilities, existing Federally owned, and EPA occupied facilities.

Repairs & Improvements -- This includes major repairs and capital improvements to any buildings or facilities occupied by EPA. Most of the projects relate to the correction of health and safety and environmental compliance deficiencies, the prevention of serious deterioration, and the modification of current facilities to meet program requirements.

NEW FACILITIES

1989 Program Request

The Agency requests a total of \$1,900,000 for this program, all of which will be for the Building and Facilities appropriation. This represents a decrease of \$15,600,000 from 1988 and reflects the initiation of several projects in 1988. This request will provide funds to construct the Biotechnology Laboratory in Gulf Breeze, Florida. This facility will support EPA's mandate to evaluate biotechnological applications which will introduce or apply genetically altered agents into the ambient environment. The laboratory must meet stringent safety standards to prevent altered organisms escaping into the environment.

1988 Program

In 1988, the Agency is allocating \$17,500,000 for this program, all of which is from the Buildings and Facilities appropriation. These funds will be supplemented by another \$2,000,000 in carryover. These funds will construct a new water quality monitoring field station in Newport, Oregon; design and renovate a Lab to test and evaluate innovative treatment technologies in Edison, New Jersey; and design a laboratory for clinical inhalation research in Chapel Hill, North Carolina.

1987 Accomplishments

In 1987, the Agency obligated a total of \$9,322,900 for this program, of which \$6,950,500 was carryover from the 1986 Buildings and Facilities appropriation. These funds were used to design and begin construction of a new radiation laboratory in Montgomery, Alabama, and support the construction of a hazardous waste containment laboratory in Cincinnati, Ohio.

REPAIRS AND IMPROVEMENTS

1989 Program Request

The Agency requests a total of \$6,100,000 for this program, all of which will be for the Buildings and Facilities appropriation. This represents an increase of \$100,000 from 1988. The increase will be used for health and safety and environmental compliance projects. These funds will provide planning, engineering design, and construction related to the repair and improvement of buildings occupied by EPA. More specifically, these funds will be used to address critical repairs related to employee health and safety (fire protection installation); environmental compliance efforts in EPA facilities (asbestos removal and hazardous materials storage); and, required alterations and repairs (electrical distribution, air conditioning, emergency power for animal facilities).

1988 Program

In 1988, the Agency is allocating a total of \$6,000,000 for this program, all of which is from the Buildings and Facilities appropriation. These resources are being utilized primarily to provide facilities maintenance and repair in an effort to prevent deterioration of EPA facilities; to initiate environmental compliance activities such as asbestos and PCB removal; and, to continue health and safety improvements and modifications to facilities reflecting shifts in program priorities and upgraded space requirements.

1987 Accomplishments

In 1987, the Agency obligated a total of \$3,938,800, all of which was from the Buildings and Facilities appropriation. These resources were used to complete various health, safety, and environmental compliance improvements to protect EPA employees. In addition, provided routine and emergency repairs at multiple sites throughout the nation.

ENVIRONMENTAL PROTECTION AGENCY

1989 Budget Estimate

Table of Contents

	<u>Page</u>
<u>CONSTRUCTION GRANTS</u>	CG-1
Construction Grants.....	CG-2

CONSTRUCTION GRANTS

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988

(DOLLARS IN THOUSANDS)						
Appropriation	\$2168,797.0	\$2000,000.0	\$2304,000.0	\$2304,000.0	\$1500,000.0	-\$804,000.0
Outlays	\$2920,339.0	\$2320,000.0	\$2566,000.0	\$2566,000.0	\$2377,500.0	-\$188,500.0
Authorization Levels	The Water Quality Act of 1987 reauthorized this program at a level of \$2,400,000,000 for each year 1987 through 1991.					

CONSTRUCTION GRANTS

OVERVIEW AND STRATEGY

Program Background

Since 1972 the construction grants program has completed about 7,000 construction projects and provided \$48 billion of the more than \$65 billion invested in grant-assisted wastewater treatment works. There are currently about 15,500 treatment plants in the nation serving over 172 million people.

This program has been authorized since 1972 through Title II of the Clean Water Act. Legislative amendments in 1977 and 1981 made a number of significant changes to the program which increased State responsibilities for direct grants management and reduced the Federal role in financing project grants. The statute provides a formula for annual allotment of funds to States and contains authorities for various funding set-asides to support delegated State management, water quality management planning, innovative and alternative technologies, and rural communities.

Program Transition

The Water Quality Act of 1987 set the stage for significant program changes. The traditional program of grants to communities for constructing facilities is being replaced by grants to States to capitalize revolving loan funds (SRFs), ushering in expanded State responsibilities and autonomy in an already extensively delegated program. Although several Title II requirements will apply to projects funded with capitalization grants for the initial round of assistance under the SRF program, the new Title VI of the Clean Water Act (CWA) gives States substantial flexibility to meet their municipal pollution control needs. Under the SRF program, States will have greater flexibility to use funds for nonpoint source and estuary programs after they have addressed National Municipal Policy projects.

Payment of capitalization grants will be made by a letter-of-credit approach under which increases to the letter-of-credit will be made over the 8 to 12 quarter period specified in Title VI. States may draw cash under the letter-of-credit to cover actual costs as they are incurred. EPA's approach will enable the States to provide all the forms of financial assistance allowed by the Act including leveraging, low interest loans, refinancing, loan guarantees, and the purchase of insurance. Cities will not have to incur interim financing costs since cash will be provided as costs are incurred. While providing cash as needed to accommodate all SRF needs, EPA will not, however, provide cash to the States solely for the purpose of earning interest. In this way, the unnecessary outlay of Federal funds in a period of substantial national budget deficits will be avoided.

EPA expects twelve States to submit SRF grant applications in 1988; virtually all of the remaining States will submit applications in 1989. In addition, new Section 205 funding set-asides support nonpoint source control, marine combined sewer overflows and estuaries, and the wastewater treatment needs of Indian Tribes.

Although construction grants funding will end after 1990, grants management activities will continue at significant levels through the 1990's. In 1989, almost 5,000 projects will remain active. EPA will help assure that projects utilize appropriate and affordable designs, are constructed in the most cost-effective manner, and are managed and operated to comply with program and discharge requirements. Effective management of the national construction grants program will be stressed, emphasizing development and implementation of multi-year Regional and State strategies to construct, complete, and close out construction grants. EPA will require delegated States requesting SRF capitalization grants to provide strategies for constructing and completing grant projects, including resource plans covering the remaining period through construction, audit and grant closeout.

CONSTRUCTION GRANTS

Construction Grants

Budget Request

The Agency requests an appropriation of \$1,500,000,000 for the construction grants appropriation, as authorized under Titles II and VI of the CWA. This request is divided equally between construction grants (\$750,000,000) and State revolving funds (\$750,000,000), and represents a decrease of \$804,000,000 from 1988.

Program Description

This program provides funds to States and municipal agencies to assist in financing the construction of cost-effective and environmentally sound municipal wastewater treatment facilities and to assist States in carrying out their program and project management responsibilities. Agency management resources and activities are described in the Municipal Source Control subactivity.

The Water Quality Act of 1987 provides for an end to construction grants funding (Title II) after 1990, and beginning in 1987, provides for capitalization of self-sustaining State revolving fund (SRF) programs (Title VI) that will provide loans or supply other non-grant construction assistance to local governments. In accordance with the Administration's \$12 billion phaseout of this program, all Federal funding will terminate after 1993.

Statutory set-aside provisions in both Title II and VI of the Clean Water Act allow States to reserve up to four percent of their authorization or \$400,000, whichever is greater, to manage their programs. All grants or loans for assisting the construction of wastewater treatment facilities are to be awarded on the basis of a State's priority system, which is designed to ensure that funds are awarded to projects with the greatest potential for improving water quality.

CONSTRUCTION GRANTS

1989 Program Request

The Agency requests a total of \$1,500,000,000 for the construction grants appropriation, a decrease of \$804,000,000 from 1988. This request is consistent with the Administration's \$12 billion phaseout of the construction grants program. This program will provide the Federal funds necessary to construct the highest priority projects and bring noncomplying publicly owned treatment works back into compliance with the secondary treatment requirements of Title II.

Gross obligations for the construction grants program will total approximately \$860,000,000; gross obligations for the SRF program will total approximately \$1,240,000,000. Net outlays for construction grants are projected to be \$2,292,500,000; net outlays for the SRF program are projected to be \$85,000,000.

The requested funding level will provide for a total of 246 construction grant awards, resulting in a total active workload of almost 4,700 construction grant projects at the end of 1989. EPA also will award an estimated 47 SRF capitalization grants during 1989. Section 205(g) and (j) set-aside obligations are expected to continue at authorized levels. In addition, new construction grant set-asides (Title II funds) under Section 205 will provide grants for Indian tribes, nonpoint source control, and marine combined sewer overflows (MCSO) and estuaries.

1988 Program

In 1988, the Agency is allocating a total of \$2,304,000,000 from the construction grants appropriation.

The Agency estimates gross obligations of \$2,194,000,000 for the construction grants program and \$410,000,000 for the SRF program. Net outlays for construction grants will be approximately \$2,556,000,000 and for the SRF program approximately \$10,000,000. The 1988 funding level will result in a total of 626 grant awards and a total active workload of 5,563 construction grants projects at the end of 1988. The Agency expects to award twelve SRF capitalization grants in 1988. Section 205 set-aside obligations are expected to continue at authorized levels.

1987 Accomplishments

In 1987, gross construction grant obligations totaled \$2,169,000,000 and supported 514 Step 3 and Step 2+3 grant awards. This funding resulted in a total active workload of 6,087 grant projects at the end of 1987. Federal outlays totaled \$2,920,000,000. States obligated \$81,510,680 under 205(g) and \$30,294,011 under 205(j) for water quality and nonpoint source planning. In addition, \$625,000 was obligated for the National Estuary Program under the new Marine Estuary Reservation of Section 205(l).

ENVIRONMENTAL PROTECTION AGENCY

1989 Budget Estimate

Table of Contents

	<u>Page</u>
<u>SUPERFUND</u>	SF-1
RESEARCH AND DEVELOPMENT	
Hazardous Substance Research.....	SF-10
Scientific Assessment.....	SF-16
Monitoring Systems and Quality Assurance.....	SF-17
Health Effects.....	SF-18
Environmental Engineering and Technology.....	SF-19
Environmental Processes and Effects.....	SF-21
Exploratory Research.....	SF-22
Technical Information and Liaison.....	SF-23
HAZARDOUS SUBSTANCE RESPONSE	
Hazardous Substance Response.....	SF-25
Hazardous Spill & Site Response.....	SF-26
Hazardous Substance Response - Support.....	SF-29
Hazardous Substance Response - Office of Water.....	SF-31
Hazardous Substance Response - Office of Air and Radiation.....	SF-33
Hazardous Substance Response - Interagency.....	SF-34
Department of Health & Human Services.....	SF-38
United States Coast Guard.....	SF-39
Department of Justice.....	SF-40
Federal Emergency Management Agency.....	SF-40
National Oceanic & Atmospheric Administration.....	SF-41
Department of the Interior.....	SF-41
Occupational Safety & Health Administration.....	SF-42
ENFORCEMENT	
Hazardous Substance Response - Enforcement.....	SF-44
Hazardous Substance Technical Support - Office	
of Enforcement & Compliance Monitoring.....	SF-48
Hazardous Substance Technical Enforcement.....	SF-49
Hazardous Substance Legal Enforcement.....	SF-51
Hazardous Substance Criminal Investigations.....	SF-53
MANAGEMENT & SUPPORT	
Hazardous Substance Management and Support.....	SF-56
Hazardous Substance Financial Management - Headquarters.....	SF-63
Hazardous Substance Financial Management - Regions.....	SF-64
Hazardous Substance Administrative Management - Headquarters.....	SF-65
Hazardous Substance Administrative Management - Regions.....	SF-65
Hazardous Substance Support Services - Headquarters.....	SF-66
Hazardous Substance Support Services - Regions.....	SF-67
Hazardous Substance Computer Services.....	SF-67
Hazardous Substance Legal Services - Headquarters.....	SF-68
Hazardous Substance Legal Services - Regions.....	SF-68
Hazardous Substance-Office of the Inspector General.....	SF-69
Hazardous Substance-Office of Policy, Planning & Evaluation.....	SF-70
Hazardous Substance-Office of the Comptroller.....	SF-71
Hazardous Substance-Office of External Affairs.....	SF-72
Hazardous Substance-Office of Research and Development-	
Lab Support.....	SF-72

SUPERFUND

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988

(DOLLARS IN THOUSANDS)						

APPROPRIATION						
Hazardous Substance Superfund	\$1050,748.9	1198,422.0	1128,000.0	1499,499.8	1600,000.0	\$100,500.2
TOTAL, Superfund	\$1050,748.9	1198,422.0	1128,000.0	1499,499.8	1600,000.0	\$100,500.2
PERMANENT WORKYEARS	2,078.0	2,716.0	2,156.0	2,156.0	2,219.0	63.0
TOTAL WORKYEARS	2,174.3	2,716.0	2,673.0	2,633.0	2,750.0	117.0
OUTLAYS	\$541,305.0	\$875,000.0	\$778,000.0	\$778,000.0	1205,000.0	\$427,000.0
AUTHORIZATION LEVELS	The Superfund Amendments and Reauthorization Act (SARA) of 1986 authorizes a total of \$8,500,000,000 for this program for 1987 through 1991.					

SUPERFUND

OVERVIEW AND STRATEGY

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, as amended by the Superfund Amendments and Reauthorization Act (SARA) of 1986, charges the Agency with the responsibility for providing emergency response for hazardous substances released into the environment and the cleanup of inactive hazardous waste disposal sites. The major emphasis of the Superfund program will continue to be to stabilize imminent threats from releases of hazardous substances and to implement the necessary long-term remedial response actions. The Hazardous Substance Superfund finances the required activities to implement CERCLA primarily through excise taxes levied on oil and chemical manufacturers, a corporate environmental tax, cost recoveries and general revenues. This \$1.6 billion request funds cleanups at all sites ready for remedial action in 1989 and anticipates meeting statutory deadlines.

As authorized under CERCLA, the Agency will respond to releases of hazardous substances, pollutants, and contaminants by either a removal or remedial action or by compelling responsible parties to undertake the response action. Removal actions are generally short-term responses taken to abate an immediate threat posed by the uncontrolled release of hazardous substances at sites or spills into the air, land, or water. Remedial actions involve long-term and more permanent remedies taken instead of, or in addition to, removal actions. The program will continue to select sites for remedial action from the National Priorities List (NPL) and to undertake all response actions in accordance with the National Contingency Plan (NCP).

While the Agency has the primary responsibility for implementing the program, CERCLA, as amended, and Executive Order 12580 provide a clear mandate for the Agency to work closely with a variety of other Federal agencies and the States to carry out the mission of the program.

The Agency undertakes five major activities in implementing the Superfund program: Hazardous Substance Response, Interagency Support, Enforcement, Research and Development, and Management and Support. The effective integration of these activities involves close cooperation among various Agency offices, the States, and other Federal agencies.

Response Activities will Focus on Effective Management of the Growing Remedial Pipeline and Meeting Mandatory Schedules

The Hazardous Substance Response program is responsible for protecting public health and the environment from dangers associated with releases of hazardous substances into the environment by providing the necessary funding and support to undertake short-term emergency responses and long-term site cleanups. The activities include responding to spills and emergency releases of hazardous substances and conducting remedial work at abandoned and uncontrolled hazardous waste sites.

The Agency coordinates an emergency response program to deal with the most serious hazardous substance spills and site emergencies where the responsible party or State and local governments are unable to respond adequately. The Agency also conducts a comprehensive program to evaluate all known hazardous waste sites, to establish priorities for remedial response, and to undertake the appropriate remedy at as many sites as possible, if the responsible party is unwilling or unable to respond.

In the removal program, the Agency expects to continue its proactive role by addressing threats of releases and thereby preventing actual releases of hazardous substances. Broader language contained in SARA and the revised NCP have resulted

in a greater number of NPL sites being targeted for emergency response actions. In accordance with the Hazardous and Solid Waste Amendments (HSWA) of 1984, the Agency will make greater use of alternatives to land disposal in order to foster the use of permanent solutions in taking both NPL and non-NPL removal actions.

On the remedial side, the Agency will direct its efforts toward managing the expanding on-going workload while initiating a substantial number of new activities planned for the final cleanup phases. In 1989, the Response program plans to start 50 new remedial actions. These new remedial actions, along with responsible party cleanups, will enable the program to meet the mandatory schedule established in SARA to start 175 new remedial cleanup actions by October 1989.

In selecting site remedies, the Agency will continue to emphasize the new cleanup standards established by SARA. These standards, although complex, ensure site remedies that: meet applicable, relevant and appropriate Federal and State environmental laws; provide permanent solutions to the extent practicable; and restrict transport of hazardous substances from Superfund sites to only those Resource Conservation and Recovery Act facilities which are in compliance with the Superfund off-site policy. The Agency's commitment to these standards assures safer, and in the long run, more cost effective cleanups.

The Agency will continue to operate a balanced program to ensure that environmental threats are addressed as quickly as possible. New sites will be scored according to the revised Hazard Ranking System. The Response program plans to start investigation and feasibility studies, the first major step in the cleanup process, at 70 new remedial sites in 1989. This will enable the program to meet the mandatory schedule to commence 275 site studies by October 1989.

The 1989 request will also ensure an adequate level of resources to support activities complementary to direct response actions. The Agency will continue to manage sample analysis and quality control activities through the national laboratory program. The Agency's Environmental Response Team will continue to provide training and technical support to Agency, State, and local government personnel. The Agency will continue to operate a system for collecting comprehensive national notification and response data on accidental releases of oil and hazardous substances. In addition, the program will continue to stress the transfer of research and technical information among decision makers, placing particular emphasis on the transfer of information concerning alternative technologies to land disposal.

Other Federal Agencies Remain Stable while Support for Justice's Growing Caseload Increases

As part of the requirement for close cooperation among various Federal agencies, EPA integrates the efforts of the Departments of Health and Human Services, Justice, Transportation, Commerce, Interior, Labor, and the Federal Emergency Management Agency and manages an interagency budget process under Executive Order 12580, signed by the President in January 1987.

The activities of other Federal agencies are divided into two basic categories. The first category includes those activities which are episodic in nature and taken in direct support of specific site or spill response actions. The second category of other Federal agency involvement is support for on-going activities which are generally not incident-specific. These activities are related to each agency's specific area of expertise and include developing program policies and guidance, conducting health research, training response personnel, litigating civil and criminal cases, and providing scientific and technical advice to EPA on-scene coordinators. The system of dual activities ensures sufficient support for broad-based, consistent, and reliable Federal management, while providing the Agency with the tools and support to manage and coordinate activities at specific sites.

The 1989 request reflects continued support for the expanded health authorities established under SARA as well as for the on-going activities of other Federal agencies supporting the Superfund program. Increased resources are provided to the Department of Justice to ensure a strong and vigorous enforcement effort and to support its expanding legal caseload.

Enforcement will Continue Vigorous Oversight of Responsible Party Cleanup and Aggressive Cost Recovery Efforts

The goal of the Enforcement program is to secure cleanup of abandoned hazardous waste sites by responsible parties (RPs) whenever possible, and thus avoid Federal and State response costs. When RPs are unwilling to take their responsibility for cleanup, the various enforcement authorities provided under CERCLA and SARA are used to promote RP cleanups. As a last resort, the Trust Fund is used to cleanup the site and the Agency then pursues cost recovery from the RPs.

In 1989, the Enforcement program will increase to provide the oversight necessary for the growing number of responsible party response actions planned. In particular, responsible parties are expected to initiate 35 remedial actions. The Enforcement program, like the Response program, will focus much of its effort on managing the increased oversight required for not only new remedial activities, but also for an expanding on-going workload.

The complex activities involved in the Superfund enforcement program require a close working relationship between the Agency's legal and technical operations, the Department of Justice, and other Agency offices. Within this framework, legal and technical information is developed about a site and its responsible parties. Based on this information and in consultation with State and program staffs, a Fund-financed or RP-financed study is conducted to determine a remedy consistent with the NCP.

Responsible parties are then given the opportunity through negotiations to design and construct the remedy necessary to alleviate the identified threat. If negotiations are not successful, either the remedial action proceeds using Trust Fund money, and a subsequent cost recovery action is initiated against the RP, or CERCLA Section 106 administrative or judicial procedures are initiated to compel the responsible party to cleanup the site. Agreements by RPs to undertake response actions are ratified in the form of CERCLA Section 104/106 administrative orders on consent for remedial investigation/feasibility studies and removal actions or consent decrees for remedial actions. In the event of non-compliance with the terms of an order or decree, Regions provide the documentation for development and support of a civil action to enforce the order or decree.

A key priority for the Enforcement program in 1989 will be to pursue a larger, more aggressive cost recovery effort to ensure maximum and timely returns to the Trust Fund. Agency management efforts will provide additional support to this effort through the establishment of a new optical disk document storage and retrieval system to improve cost documentation for cost recovery cases.

The Agency will also continue to strengthen its technical assistance to other Federal agencies that are addressing their own hazardous waste facilities. In addition, enforcement actions will be taken to achieve cleanup at closing or closed RCRA facilities which have environmentally significant releases.

The Criminal Enforcement program will use the felony provisions of SARA to prosecute parties who fail to report hazardous substance releases, destroy records, or submit false information on claims. The Agency will provide specialized support for the Enforcement program through laboratory analysis of high hazard samples, field investigations, technical assistance in the negotiations of consent decrees, and evidence audits to assure the accuracy of records and analyses.

Research and Development Support Increases

The Research and Development program supports the Agency, States, and industry in resolving technical problems which inhibit the effective implementation of removal and remedial actions. Support focuses on adapting existing technologies and scientific information for application to uncontrolled hazardous waste sites.

In addition to providing expanded technical support to the program office in conducting cleanups and enforcement actions, the 1989 program will emphasize the commercialization of alternative and innovative treatment technologies for use in cleanup actions by developing reliable performance and cost information through full scale demonstrations under the Superfund Innovative Technology Evaluation program.

In 1989, a new initiative will be undertaken to evaluate biological treatment systems (biosystems) for use in cleaning up waste sites. Successful application of biosystems could substantially reduce the cost of cleaning up Superfund sites.

Increased resources will also be provided to develop advanced field monitoring techniques for the measurement of hazardous substances commonly found at Superfund sites. Technologies which are now primarily used in the laboratory will be adapted and further developed for field use to provide techniques and methods that provide more cost-effective field monitoring at Superfund sites.

Research funding will also be provided for five competitive Hazardous Substance Research Centers to conduct research and training related to the manufacture, use, transportation, disposal, and management of hazardous substances.

Management and Support Continues Improvement in Support Services

This function provides the financial, administrative, and support services necessary to manage the Superfund program. This includes financial management to track and report on the use of the Hazardous Substance Superfund; administration of contracts, personnel, information systems, laboratory services, and safety training; services for space, utilities, and other non-personnel support needs; and computer services. Management and support also includes the provision of legal services; audits and investigations; policy analysis and program evaluation; budget development and oversight; communication with groups external to the Agency; and lab support for Superfund research.

In 1989, improved support will be provided to cost-recovery actions and site specific documentation with the implementation of an automated nationwide document storage and retrieval system. This support will improve the timeliness, accuracy and completeness of financial documents in the program. The Agency will continue to effectively manage the increasing number of Superfund contracts and provide the technical assistance and computing resources to support the information management requirements of the program.

SUPERFUND

	<u>Actual 1987</u>	<u>Budget Estimate 1988</u>	<u>Current Estimate 1988</u>	<u>Request 1989</u>	<u>Increase (+) Decrease (-) 1989 vs 1988</u>
<u>PROGRAM ACTIVITIES</u>					
<u>Incremental Outputs</u>					
Removal Actions:					
Fund Financed.....	227	200	190	190	0
PRP Response.....	33	55	58	55	-3
Both.....	10	N/A	N/A	N/A	N/A
Pre-remedial Actions:					
Preliminary					
Assessments.....	4,001	3,200	2,432	3,000	+568
Site Inspections.....	1,343	1,035	1,117	2,200	+1,083
Remedial Investigation/ Feasibility Studies:					
Fund Financed.....	66	90	70	70	0
PRP Response.....	40	40	33	33	0
Both.....	6	N/A	N/A	N/A	N/A
Federal Facilities.....	--	47	25	20	-5
Remedial Designs:					
Fund Financed.....	56	65	78	75	-3
PRP Response.....	5	49	54	70	+16
Remedial Actions:					
Fund Financed.....	25	50	49	50	+1
PRP Response.....	6	29	19	35	+16
Both.....	1	N/A	N/A	N/A	N/A
Federal Facilities.....	--	2	4	2	-2
Judicial Enforcement:					
\$106 Referrals.....	11	87	85	91	+6
Cost Recovery					
Referrals.....	24	46	51	56	+5
Criminal Referrals.....	0	14	9	9	0

SUPERFUND

	<u>Actual 1987</u>	<u>Budget Estimate 1988</u>	<u>Current Estimate 1988</u>	<u>Request 1989</u>	<u>Increase (+) Decrease (-) 1989 vs 1988</u>
<u>PROGRAM ACTIVITIES</u>					
<u>Cumulative Outputs</u>					
Removal Actions:					
Fund Financed.....	839	1,039	1,029	1,219	+190
PRP Response.....	184	239	242	297	+ 55
Both.....	59	N/A	N/A	N/A	N/A
Pre-remedial Actions:					
Preliminary					
Assessments.....	24,004	27,204	26,436	29,436	+3,000
Site Inspections.....	7,835	8,870	8,952	11,152	+2,200
Remedial Investigation/ Feasibility Studies:					
Fund Financed.....	432	522	502	572	+70
PRP Response.....	95	135	128	161	+33
Both.....	72	N/A	N/A	N/A	N/A
Federal Facilities....	5	52	30	50	+20
Remedial Designs:					
Fund Financed.....	124	189	202	277	+75
PRP Response.....	55	104	109	179	+70
Remedial Actions:					
Fund Financed.....	67	117	116	166	+50
PRP Response.....	62	91	81	116	+35
Both.....	4	N/A	N/A	N/A	N/A
Federal Facilities.....	1	3	5	7	+2
Judicial Enforcement:					
§106 Referrals.....	113	200	198	289	+91
Cost Recovery					
Referrals.....	177	223	228	284	+56
Criminal Referrals.....	7	21	16	25	+9

ENVIRONMENTAL PROTECTION AGENCY

1989 Budget Estimate

Table of Contents

<u>SUPERFUND</u>	<u>Page</u>
RESEARCH AND DEVELOPMENT	
Hazardous Substance Research.....	SF-10
Scientific Assessment.....	SF-16
Monitoring Systems and Quality Assurance.....	SF-17
Health Effects.....	SF-18
Environmental Engineering and Technology.....	SF-19
Environmental Processes and Effects.....	SF-21
Exploratory Research.....	SF-22
Technical Information and Liaison.....	SF-23

SUPERFUND
Hazardous Substance Research

		ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988
----- (DOLLARS IN THOUSANDS) -----							
PROGRAM -----							
Scientific Assessment- Superfund Hazardous Substance							
	TOTAL	\$2,874.0	\$4,328.7	\$4,328.7	\$4,328.7	\$4,488.7	\$160.0
		\$2,874.0	\$4,328.7	\$4,328.7	\$4,328.7	\$4,488.7	\$160.0
Monitoring Systems & Quality Assurance - Superfund Hazardous Substance							
	TOTAL	\$9,069.6	\$12,781.4	\$12,781.4	\$12,781.4	\$13,031.4	\$250.0
		\$9,069.6	\$12,781.4	\$12,781.4	\$12,781.4	\$13,031.4	\$250.0
Health Effects Hazardous Substance							
	TOTAL	\$2,162.3	\$3,745.0	\$3,745.0	\$3,745.0	\$3,745.0	
		\$2,162.3	\$3,745.0	\$3,745.0	\$3,745.0	\$3,745.0	
Environmental Engineering & Technology - Superfund Hazardous Substance							
	TOTAL	\$18,947.3	\$31,753.2	\$26,153.2	\$26,158.2	\$32,398.5	\$6,240.3
		\$18,947.3	\$31,753.2	\$26,153.2	\$26,158.2	\$32,398.5	\$6,240.3
Environmental Processes & Effects - Superfund Hazardous Substance							
	TOTAL	\$2,718.6	\$3,077.9	\$3,077.9	\$3,077.9	\$4,727.9	\$1,650.0
		\$2,718.6	\$3,077.9	\$3,077.9	\$3,077.9	\$4,727.9	\$1,650.0
Exploratory Research Hazardous Substance							
	TOTAL	\$3,090.0	\$2,500.0	\$7,500.0	\$7,500.0	\$7,550.0	\$50.0
		\$3,090.0	\$2,500.0	\$7,500.0	\$7,500.0	\$7,550.0	\$50.0

SUPERFUND
Hazardous Substance Research

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988
----- (DOLLARS IN THOUSANDS) -----						
Technical Information And Liaison Hazardous Substance	\$856.6	\$625.8	\$625.8	\$625.8	\$625.8	
TOTAL	\$856.6	\$625.8	\$625.8	\$625.8	\$625.8	
TOTAL: Hazardous Substance	\$39,718.4	\$58,812.0	\$58,212.0	\$58,217.0	\$66,567.3	\$8,350.3
Hazardous Substances Research	TOTAL \$38,718.4	\$58,812.0	\$58,212.0	\$58,217.0	\$66,567.3	\$8,350.3
 PERMANENT WORKYEARS -----						
Scientific Assessment-Superfund	10.7	11.4	11.4	11.4	14.6	3.2
Monitoring Systems & Quality Assurance - Superfund	22.4	24.3	24.3	24.3	25.3	1.0
Health Effects	2.5	3.0	3.0	3.0	3.0	
Environmental Engineering & Technology - Superfund	38.3	38.9	38.9	38.9	47.9	9.0
Environmental Processes & Effects - Superfund	11.3	7.0	7.0	7.0	10.0	3.0
Exploratory Research					1.0	1.0

SUPERFUND
Hazardous Substance Research

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988
----- (DOLLARS IN THOUSANDS) -----						
Technical Information And Liaison	5	1.0	1.0	1.0	1.0	
TOTAL PERMANENT WORKYEARS	85.7	85.6	85.6	85.6	102.8	17.2
TOTAL WORKYEARS -----						
Scientific Assessment- Superfund	11.7	11.4	11.4	11.4	14.6	3.2
Monitoring Systems & Quality Assurance - Superfund	24.1	24.3	24.3	24.3	25.3	1.0
Health Effects	2.7	3.0	3.0	3.0	3.0	
Environmental Engineering & Technology - Superfund	41.9	38.9	38.9	38.9	47.9	9.0
Environmental Processes & Effects - Superfund	12.5	7.0	7.0	7.0	10.0	3.0
Exploratory Research					1.0	1.0
Technical Information And Liaison	5	1.0	1.0	1.0	1.0	
TOTAL WORKYEARS	93.4	85.6	85.6	85.6	102.8	17.2

SUPERFUND

Hazardous Substance Research

Principal Outputs by Objective

Objective 1: Provide Techniques and Procedures for Site and Situation Assessment

- 1989: ° Health and Environmental Effects Documents (Sci. Assessment)
 - ° Report on emerging technology for the treatment of metal-bearing wastes (Envir. Engineering)
- 1988: ° Health and Environmental Effects Documents (Sci. Assessment)
 - ° Report on survey and assessment of completed and ongoing remedial actions (Engineering)
- 1987: ° Health Effects Assessment Documents (Sci. Assessment)
 - ° Cost estimation models for remedial action technologies (Engineering)

Objective 2: Develop Technologies to Manage Uncontrolled Waste Sites

- 1989: ° Report on BDAT for Superfund wastes (Engineering)
 - ° Report on enhancing biodegradation of a gasoline spill in groundwater (Envir. Processes)
- 1988: ° Assessment report for stabilization/fixation methods for soils (Envir. Engineering)
 - ° Identification and preparation of soils test matrix and physical treatment for Superfund BDAT project (Envir. Engineering)
- 1987: ° Handbook on leachate treatment techniques (Envir. Engineering)

Objective 3: Provide Information on Personnel Health, Protective Equipment, and Procedures

- 1989: ° Interim report on improvement of worker safety via robotics, automation, and task modification (Envir. Engineering)
- 1988: ° Evaluation of personnel hazard detectors for highly toxic chemicals (Envir. Engineering)
- 1987: ° Evaluation of EPA/US Army developed breathing apparatus for personnel protection (Envir. Engineering)

Objective 4: Support Reportable Quantities Regulatory Efforts

- 1989: ° Reportable Quantity chapters for HEEDs and other chemicals designated by OERR (Sci. Assessment)
- 1988: ° Reportable Quantities documentation for carcinogenicity and chronic health effects (Sci. Assessment)
- 1987: ° Reportable Quantities documentation for carcinogenicity and chronic health effects (Sci. Assessment)

Objective 5: Provide Technical Support to Enforcement, Program, and Regional Offices

- 1989: ° Document on evaluation of bioremediation as a remedial action technology (Envir. Processes)
- 1988: ° Reports on remote sensing for Superfund sites (Monitoring)
° HWERL Engineering Research Symposium (Envir. Engineering)
- 1987: ° State-of-the-Art technology seminar for Regional Offices (Envir. Eng.)

Objective 6: Provide Quality Assurance Support for Superfund Program Requirements

- 1989: ° Annual Report - QA support to the Contract Laboratory Program (Monitoring)
- 1988: ° Annual Report - QA support to the Contract Laboratory Program (Monitoring)
- 1987: ° Annual Report - QA support to the Contract Laboratory Program (Monitoring)

Objective 7: Provide Technology Transfer

- 1989: ° Annual Report on CERCLA Technology Transfer Activities (Tech. Info.)
- 1988: ° Annual Report on CERCLA Technology Transfer Activities (Tech. Info.)
- 1987: ° Annual Report on CERCLA Technology Transfer Activities (Tech. Info.)

Objective 8: Conduct Alternative/Innovative Technology Research, Development and Demonstration

- 1989: ° Report on ten SITE program demonstrations and applications analyses (Envir. Engineering)
° Annual SITE Status Report to Congress (Envir. Engineering)
- 1988: ° Annual SITE Status Report to Congress (Envir. Engineering)
° Demonstration reports on ten innovative technologies (Envir. Engineering)
- 1987: ° Interim report on development and demonstration of immunoassay detection system for rapid screening at Superfund sites (Monitoring)
° Technology development reports on innovative technologies (Envir. Eng.)

Objective 9: Conduct Hazardous Substances Health Effects/Risk Assessment and Detection Research

- 1989: ° Annual Report on Superfund health risk research (Sci. Assessment)
- 1988: ° Report on screening methods for field application (Monitoring)
- 1987: ° Report on rapid response toxicity data development (Health)

Objective 10: Manage University Hazardous Substances Research Centers

- 1989: ° Annual Report: Hazardous Substances Research Centers (Exp. Research)
- 1988: ° Annual Report: Hazardous Substances Research Centers (Exp. Research)

SUPERFUND

Hazardous Substance Research

Budget Request

The Agency requests a total of \$66,567,300 supported by 102.8 total workyears for 1989, an increase of \$8,350,300 and 17.2 total workyears over the 1988 level. All of the request will be for the Hazardous Substance Superfund appropriation. The increase supports the innovative and alternative technology review program and research to evaluate biological degradation techniques (biosystems) for use in Superfund site cleanups.

Program Description

The Superfund research and development program provides a core of scientific and technical information to support implementation of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA). The research program concentrates on assessing the health and environmental risks posed by Superfund sites and on evaluating equipment and techniques for discovering, assessing, preventing, removing, and disposing of hazardous substances released into the environment.

Objective 1: Provide Techniques and Procedures for Site and Situation Assessment. This research provides techniques and procedures to allow on-scene coordinators and remedial project managers to quickly and effectively assess the degree of hazard posed at specific uncontrolled waste sites.

Objective 2: Develop Technologies to Manage Uncontrolled Waste Sites. This research program develops and evaluates technologies which are not yet ready for field application and require additional lab development. These technologies are being developed by the Agency as tools for cleanup under the Superfund program. This development activity must be carried out by the Agency because of low commercial interest, low potential for profit, or because of the high economic risks associated with the development of the technology.

Objective 3: Provide Information on Personnel Health, Protective Equipment, and Procedures. This research provides evaluation and assessment of the technologies applicable to ensuring personnel health and safety during removal and remedial response operations.

Objective 4: Support Reportable Quantities Regulatory Efforts. This research supports Superfund regulatory efforts by ranking and assigning reportable quantities to chemicals based upon either carcinogenicity or chronic health effects information. This information is then used by the program office to adjust reportable quantities for these chemicals.

Objective 5: Provide Technical Support to Enforcement, Program and Regional Offices. This research provides review of remedial action design and implementation plans and review of new data submitted by liable parties for specific site problems. Review and technical expertise is also provided to the enforcement program and the Regional offices.

Objective 6: Provide Quality Assurance Support for Superfund Program Requirements. This program provides extensive support to the National Contract Laboratory Program. Activities include development and promulgation of analytical methods to measure and characterize samples from Superfund sites, and review and evaluation of quality assurance and quality control plans.

Objective 7: Provide Technology Transfer. This program disseminates information to the program office, Regions, States and local authorities to assist them in Superfund site cleanups.

Objective 8: Conduct Alternative/Innovative Technology Research, Development and Demonstration. This program fulfills the Agency's responsibility under SARA §311(b) to carry out a comprehensive program of research, development and demonstration for the purpose of promoting the commercialization of innovative and alternative treatment and monitoring technologies.

Objective 9: Conduct Health Effects/Risk Assessment and Detection Research. This program fulfills the Agency's responsibility under SARA §311(c) to carry out a comprehensive program of research and development to enhance the Agency's scientific capabilities to detect, assess, and evaluate effects on, and risks to, human health from hazardous substances.

Objective 10: Manage University Hazardous Substance Research Centers. This program funds research and training related to the manufacture, use, transportation, disposal, and management of hazardous substances through a university based centers program as authorized under SARA §311(d).

Objective 11: Alternative/Innovative Treatment Technology Test Facility. This program will provide the funds to fully establish the Test and Evaluation facility at Edison, NJ, by providing required monitoring, emissions control and other equipment for the facility.

SCIENTIFIC ASSESSMENT

1989 Program Request

The Agency requests a total of \$4,488,700 supported by 14.6 total workyears for this program, all of which will be for the Hazardous Substance Superfund appropriation. This represents an increase of \$160,000 and 3.2 total workyears. The increase will focus on the development of toxicological profiles which are mandated by SARA and additional risk assessment reviews for EPA Regional Offices through establishment of a regional risk assessment review group.

Provide Techniques and Procedures for Site and Situation Assessment. Chemical-specific exposure, health and environmental effects documents, and rapid response assessments will continue to be prepared to assist the program office and Regions in evaluating the degree of hazard at uncontrolled waste sites during the remedial investigation and feasibility study (RI/FS) process. Increased resources will be used to develop additional toxicological profiles in cooperation with the Agency for Toxic Substances and Disease Registry (ATSDR).

Support Reportable Quantities Regulatory Efforts. Chemical-specific health effects documentation (cancer and other chronic effects) will continue to be provided to the Office of Emergency and Remedial Response (OERR) for use in adjusting the Reportable Quantity amounts for various hazardous substances. These two risk categories are among those which are considered by the program office in adjusting Reportable Quantity amounts of given hazardous substances to reflect the potential hazard associated with their release into the environment.

Provide Technical Support to Enforcement, Program and Regional Offices. In response to SARA requirements, an increased number of risk assessments will be conducted by EPA Regional Offices. ORD will increase its support to the Regions through the establishment of a regional risk assessment review group. This group will serve as a focal point for review of risk assessments generated by the Regions and provide risk assessment guidance in response to requests from the Regions. Support to the enforcement program in exposure and risk assessment will continue.

Conduct Hazardous Substances Health Effects/Risk Assessment and Detection Research. This program provides data and methodologies for health risk assessment use throughout the removal and remedial response process for Superfund offices. Efforts will be focused on data collection for use in exposure assessment components of risk assessment, analysis of existing toxicity data for use in hazard assessment, and expansion and verification of toxicity data contained in inhouse data bases. Collection of data for use in developing pharmacokinetic models used to refine risk estimates will continue.

1988 Program

In 1988, the Agency is allocating a total of \$4,328,700 supported by 11.4 total workyears for this program, all of which is from the Hazardous Substance Superfund appropriation. Activities include development of data and procedures to fill information gaps which exist in the Superfund public health evaluation process. This includes development of test methods for evaluation of the hazard potential of waste mixtures, screening techniques for early detection of adverse health effects, and predictive models which are intended to reduce the uncertainties in risk assessment caused by data limitations. In addition, exposure and risk assessments are being prepared to assist in evaluations of alternative courses of action that might be applied to a site.

1987 Accomplishments

In 1987, the Agency obligated a total of \$2,874,000 supported by 11.7 total workyears for this program, all of which was from the Hazardous Substance Superfund appropriation. The program produced health and environmental effects documents and rapid response health assessments, carcinogenic and chronic health effects documents for many hazardous substances to support reportable quantity adjustment, and assisted with health and risk assessment of sites for the enforcement office. In addition, a research program was initiated to develop improved risk assessment data and procedures.

MONITORING SYSTEMS AND QUALITY ASSURANCE

1989 Program Request

The Agency requests a total of \$13,031,400 supported by 25.3 total workyears for this program, all of which will be for the Hazardous Substance Superfund appropriation. This represents an increase of \$250,000 and 1.0 total workyear. The increase reflects an expansion of the program to develop rapid, advanced field-monitoring techniques to characterize substances found at Superfund sites.

Provide Techniques and Procedures for Site and Situation Assessment. Monitoring techniques will be evaluated, validated, standardized, and field tested. Protocols for their use will be prepared. Analytical methods for detection and quantification of pollutants will be validated. Indicator parameter methods and monitoring strategies for Superfund sites will be developed.

Provide Technical Support to Enforcement, Program and Regional Offices. Site-specific monitoring will continue to be provided to OWPE, OERR and the Regions in response to their requests for assistance at Superfund sites. This will include providing aerial imagery, photographic interpretation, and maps for pre- and post-remedial site assessment. Oversight reviews for monitoring portions of settlement agreements will be provided. In addition, support will be provided in the areas of ground water sampling, network design, use of geophysical techniques, and analytical methods.

Provide Quality Assurance Support for Superfund Program Requirements. Quality assurance support will be provided to the Contract Laboratory Program (CLP) to ensure that data of known and documented quality are used in the Superfund program. Pre-contract capability assessments, supply of calibration materials to contract laboratories, assessment of laboratory performance, evaluation/improvement of analytical methods, and validation reports on CLP laboratories will be provided.

Conduct Alternative/Innovative Technology Research, Development and Demonstration. Resources in 1989 will be used to demonstrate and evaluate innovative monitoring technologies. This will be a cooperative program with the private sector to determine applicability to Superfund site assessment and pollutant characterization problems. Promising monitoring techniques lacking private sector support, which are not yet ready for demonstration, will be evaluated and further developed so that they can be validated and demonstrated.

Conduct Hazardous Substances Health Effects/Risk Assessment and Detection Research. The program to develop advanced field monitoring techniques for measurement of hazardous substances will be expanded. Technologies which are now primarily used in the laboratory will be adapted and further developed for field use to provide techniques and methods that allow more focused, complete, expedient, and cost-effective field monitoring for common hazardous substances at Superfund sites. The application of these in-the-field monitoring techniques and methods will accelerate site cleanup and reduce costs.

1988 Program

In 1988, the Agency is allocating a total of \$12,781,400 supported by 24.3 total workyears for this program, all of which is from the Hazardous Substance Superfund appropriation. Monitoring techniques are being evaluated, validated, standardized and field tested. Protocols for their use are being prepared to support the remedial investigation and feasibility study processes. Site-specific monitoring support is being provided to Regions and the program offices, including aerial photographic interpretation for site assessment, oversight for settlement agreements and support in ground water sampling/network design. Quality assurance support is being provided to the Contract Laboratory Program. Advanced monitoring techniques from the private sector are being evaluated and demonstrated for their applicability to Superfund monitoring situations. Field monitoring techniques which show potential for significant cost savings are being developed and validated to permit better detection of hazardous substances at Superfund sites.

1987 Accomplishments

In 1987, the Agency obligated a total of \$9,069,600 supported by 24.1 total workyears for this program, all of which was from the Hazardous Substance Superfund appropriation. During 1987, remote sensing was provided for use in site assessments. Geophysical techniques were used to locate buried drums at a number of sites. Development of an immunoassay system to detect pentachlorophenol and a fiber optic sensor for chloroform detection progressed. Evaluation of a portable x-ray fluorescence system in the field occurred, showing the precision and accuracy of the system to be comparable to currently approved, but more cumbersome techniques.

HEALTH EFFECTS

1989 Program Request

The Agency requests a total of \$3,745,000 supported by 3.0 total workyears for this program, all of which will be for the Hazardous Substance Superfund appropriation. This represents no change in dollars or total workyears.

Conduct Hazardous Substances Health Effects/Risk Assessment and Detection Research. This program provides improved health evaluation measures and data to detect, assess, and evaluate human health hazards from hazardous substances at Superfund sites. This work includes providing methods to evaluate the hazard potential of waste mixtures, screening techniques for early detection of adverse health effects, and identification and improvement of better measures of health endpoints, particularly non-cancer endpoints such as reproductive effects and neurotoxicity.

1988 Program

In 1988, the Agency is allocating a total of \$3,745,000 supported by 3.0 total workyears for this program, all of which is from the Hazardous Substance Superfund appropriation. In 1988, the health effects research program is working to provide methods to detect, assess, and evaluate the risks to human health from hazardous substances associated with Superfund sites. For example, test methods are being developed for the evaluation of hazard potential of waste mixtures, as are predictive techniques that can reduce uncertainties in risk assessment caused by data limitations. This research is coordinated with the scientific assessment program and activities of the program office, as well as with the research activities of both the National Institute of Environmental Health Sciences (NIEHS) and the Agency for Toxic Substances and Disease Registry (ATSDR).

1987 Accomplishments

In 1987, the Agency obligated a total of \$2,162,300 supported by 2.7 total workyears for this program, all of which was from the Hazardous Substance Superfund appropriation. In 1987, the Superfund health effects research program was initiated pursuant to §311(c) of SARA to enhance the Agency's scientific capabilities to evaluate and assess the health effects of and risks to humans from hazardous substances. Research on rapid response toxicity testing, toxicity dose measurement techniques and development of methods for predicting neurotoxic effects from complex mixtures occurred.

ENVIRONMENTAL ENGINEERING AND TECHNOLOGY

1989 Program Request

The Agency requests a total of \$32,398,500 supported by 47.9 total workyears for this program, all of which will be for the Hazardous Substance Superfund appropriation. This represents an increase of \$6,240,300 and 9.0 total workyears. The increase reflects an expansion of research on the use of biological degradation (biosystems) at Superfund site cleanups, establishment of a Superfund Innovative Technology Evaluation (SITE) information clearinghouse, increased project management for the SITE technology demonstration program, and costs necessary to provide equipment for the Test and Evaluation Facility in support of the SITE program at Edison, New Jersey.

Provide Techniques and Procedures for Site and Situation Assessment. Engineering expertise and assessment procedures will be provided to assist the program office in remedial investigations and feasibility studies (RI/FS) at specific Superfund sites. Information will be provided on the cost and effectiveness of remedial action technologies for specific sites based on data collected from surveys and technology evaluations. Increased emphasis will be placed on the development of support tools to assist with RI/FS activities. Information will be provided on the biochemistry and genetics of PCB degradation by bacteria and on the evaluation of solidification techniques for hazardous waste treatment.

Develop Technologies to Manage Uncontrolled Waste Sites. This research will develop and evaluate technologies which are not ready for field application and require additional lab development. These technologies are being developed by the Agency as tools for cleanup in its operating Superfund program. Much of this development activity must be carried out by the Agency because of low commercial interest, low potential for profit, or because of the high economic risks associated with development of the technology. Technology specific development will be provided in the major technical areas of in situ and on-site treatment. Biosystems research efforts will be increased to develop new application techniques, technology for environmental and worker protection during application of biosystems, and technology transfer to the user community. Biosystems research is being increased because the Agency feels that this technology has the potential to significantly reduce the cost of site cleanups and because the private sector has shown a limited interest in the technology because of high economic risks. Other activities will focus on technologies involving extraction, degradation, detoxification, and solidification of contaminated material, municipal waste, combustion research, on-site treatment equipment, and best demonstrated available technologies.

Provide Information on Personnel Health, Protective Equipment and Procedures. This research will evaluate personnel protective clothing, equipment, and procedures. Specific accomplishments will include identification and evaluation of promising new protective materials, garments, respirators, personal hazard detectors, and equipment. Application of automation or robotics to selected removal and remedial tasks, and development of improved methods for measuring and documenting the physical properties of garment materials will also be investigated.

Provide Technical Support to Enforcement, Program and Regional Offices. The engineering program will provide technical advice and consultation to enforcement and the program office on issues that arise during emergency and remedial response at Superfund sites for case support. Information from Superfund research will be provided to Agency implementors and regulators to ensure that the latest available procedures and technologies are employed at sites. Technical support is anticipated to shift to more field-oriented activities.

Conduct Alternative/Innovative Technology Research, Development and Demonstration. The alternative/innovative treatment technology demonstration program (SITE) will be expanded by adding needed critical project management support to handle the large number of treatment technology demonstrations that this program will have underway or under negotiation. It is estimated that during 1989 the Agency will have thirty technology demonstrations underway or under negotiation. The program will evaluate emerging technologies to accelerate development from the proof-of-concept to the pilot stage. The focus will be on separation, chemical stabilization, detoxification, and destruction that promise to provide significant new technologies for cleaning up Superfund wastes. Demonstration of biosystems treatment processes will be expanded. A SITE information clearinghouse will be operated pursuant to §311(b) of SARA.

A/I Treatment Technology Test Facility. Renovation activities will be completed on the Test and Evaluation Facility at Edison, NJ. Since regulatory requirements mandate the treating and monitoring of emissions from hazardous and toxic waste treatment systems, various instruments and equipment will be required. Test areas must have back-up treatment equipment such as dual bank high efficiency particulate air filters and must have continuous monitoring systems, including sample collection, conditioning, and transport assemblies. Analytical laboratories will require gas chromatographs and emissions spectrometers. Shop areas must be organized and equipped with such items as compressors, lathes, and milling machines.

1988 Program

In 1988, the Agency is allocating a total of \$26,158,200 supported by 38.9 total workyears for this program, all of which is from the Hazardous Substance Superfund appropriation. Activities in 1988 include the SITE program which is

promoting the commercialization of alternative and innovative technologies for use in response actions. At least ten demonstrations of innovative technologies will be initiated in 1988. In addition, engineering expertise and procedures are being provided to assist in remedial investigations and feasibility studies for specific Superfund sites (evaluations of technology applicability/feasibility/costs). Promising in-place and on-site treatment processes and equipment are being developed, as are in situ techniques for large municipal waste NPL sites.

1987 Accomplishments

In 1987, the Agency obligated a total of \$18,947,300 supported by 41.9 total workyears for this program, all of which was from the Hazardous Substance Superfund appropriation. During 1987, the program reviewed site assessment and feasibility plans and advised on engineering issues for sites. A report was prepared on data requirements for remedial action screening, design, and construction, and cost models for estimating costs of remedial action alternatives were developed. Personnel protection procedures and equipment were evaluated. Technical support was provided for 35 sites. A mobile soils washing system was prepared for functional evaluation, and the mobile incinerator was modified to increase its throughput by a factor of two. The mobile carbon regenerator was prepared for demonstration at a site. The second SITE solicitation was published and a number of proposals selected for followup action. Activities were initiated toward the demonstration of technologies selected from the first SITE solicitation. Ten technology demonstrations were initiated during 1987, with one demonstration completed.

ENVIRONMENTAL PROCESSES AND EFFECTS

1989 Program Request

The Agency requests a total of \$4,727,900 supported by 10.0 total workyears for this program, all of which will be for the Hazardous Substance Superfund appropriation. This represents an increase of \$1,650,000 and 3.0 total workyears. The increase reflects an expansion of the program on biological systems (biosystems) for waste degradation.

Develop Technologies to Manage Uncontrolled Waste Sites. Environmental processes work will be expanded on the cleanup potential of in situ biodegradation techniques (biosystems) related to contaminated soils and groundwater. The expanded activity in this area is integrated with biosystems research in the engineering program and is an integral part of the efforts needed to bring these new, less costly, cleanup technologies to the field for use in achieving permanent site remediation as required by SARA. New activity will include characterizing the subsurface biological, chemical, and physical processes that promote in situ bioremediation; environmentally enhancing the metabolic capabilities of indigenous microorganisms for biodegradation; and genetically manipulating microorganisms to design microbial strains with novel and enhanced biodegradation characteristics. Research will also focus on the ecological effects that might be associated with these biodegradation technologies. Potential environmental and health effects associated with genetically engineered organisms will be evaluated.

Provide Technical Support to Enforcement, Program and Regional Offices. Technical support will be provided to Agency and State personnel on the use of subsurface models, sampling and analytical techniques, assessment of contaminated marine coastal areas, development of exposure/risk assessment methodologies, and on the application of bioassessment protocols for determining the toxicity of spilled materials. Work on the bioassessment protocol will be expanded with applications at actual Superfund sites for validation of the technique under rigorous, complex waste situations. These activities are needed to support program office activities to prioritize sites on the basis of their risk.

1988 Program

In 1988, the Agency is allocating a total of \$3,077,900 supported by 7.0 total workyears for this program, all of which is from the Hazardous Substance Superfund appropriation. Research is being initiated on the cleanup potential of in situ biodegradation techniques related to contaminated soils and groundwater. This research is closely coordinated with the engineering evaluations of techniques to prevent the migration of hazardous substances into groundwater, and will be instrumental in determining whether biodegradation methods are potentially cost-effective alternatives to soil excavation or withdrawal and treatment of contaminated groundwater. Technical support is being provided to Agency and State staffs for site- and case-specific issues.

1987 Accomplishments

In 1987, the Agency obligated a total of \$2,718,600 supported by 12.5 total workyears for this program, all of which was from the Hazardous Substance Superfund appropriation. During 1987, technical support was provided in response to specific requests from the Regions, enforcement, and the States on groundwater sampling, analyses, data interpretation and site-specific modeling. Plume movement and biological stabilization of subsurface contaminants were evaluated and uptake of contaminants by fish was studied.

EXPLORATORY RESEARCH

1989 Program Request

The Agency requests a total of \$7,550,000 and 1.0 total workyear for this program, all of which will be for the Hazardous Substances Superfund appropriation. This represents an increase of \$50,000 and 1.0 total workyear. The increase will provide a project manager for the University Hazardous Substances Research Centers program.

Conduct Hazardous Substances Health Effects/Risk Assessment and Detection Research. Targeted grants in the area of in situ treatment of hazardous waste and monitoring for Superfund site assessments will be awarded. In addition, targeted grants in two new areas of research relevant to the Superfund program will be initiated. Approximately seven new grants will be awarded in 1989.

Manage University Hazardous Substances Research Centers. Five competitive Hazardous Substances Research Centers will continue to fund research into and training related to the manufacture, use, transportation, disposal, and management of hazardous substances. This program is considered by the Agency to be an important part of the overall multidisciplinary research program to address health, environmental, and engineering issues associated with hazardous substances. This university based program will allow the application of academic expertise in basic research to Superfund issues.

1988 Program

In 1988, the Agency is allocating a total of \$7,500,000 supported by no workyears for this program, all of which is from the Hazardous Substance Superfund appropriation. In 1988, a targeted grants program is funding research on hazardous waste abatement and control. The focus is on the study of in situ methods for the decontamination of groundwater and development of rapid analytical methods for complex mixtures of hazardous substances at Superfund sites. In addition, a Hazardous Substances Research Centers program is being initiated. Five competitive centers are being established to fund research and training on the manufacture, use, transportation, disposal, and management of hazardous substances.

1987 Accomplishments

In 1987, the Agency obligated a total of \$3,090,000 supported by no workyears for this program, all of which was from the Hazardous Substance Superfund appropriation. In 1987, a targeted competitive grants research program was established to fund applied research on hazardous substances abatement and control activities. The initial focus was on the study of in situ methods for decontamination of ground water and development of rapid analytical methods applicable to complex mixtures at Superfund sites.

TECHNICAL INFORMATION AND LIAISON

1989 Program Request

The Agency requests a total of \$625,800 and 1.0 total workyear for this program, all of which will be for the Hazardous Substance Superfund appropriation. This represents no change in dollars or total workyears.

Provide Technology Transfer. This activity provides technology transfer and training assistance on issues relevant to the Superfund cleanup program for the program office, Regions, and States.

1988 Program

In 1988, the Agency is allocating a total of \$625,800 supported by 1.0 total workyear for this program, all of which is from the Hazardous Substances Superfund appropriation. This program is coordinating Office of Research and Development technology transfer activities, and delivering technological information and training to the program office, Regions, States and contractors responsible for cleanup activities. This activity enhances the effective, timely, and efficient planning of permanent solutions in Superfund response actions at uncontrolled sites by providing relevant technology information for use on sites.

1987 Accomplishments

In 1987, the Agency obligated a total of \$856,600 supported by 0.5 total workyears for this program, all of which was from the Hazardous Substance Superfund appropriation. This program developed mechanisms to coordinate ORD technology transfer activities, and delivered technological information to the program office, Regions, States and contractors responsible for cleanup activities.

Hazardous Substance
Response Actions

ENVIRONMENTAL PROTECTION AGENCY

1989 Budget Estimate

Table of Contents

	<u>Page</u>
<u>SUPERFUND</u>	
HAZARDOUS SUBSTANCE RESPONSE	
Hazardous Substance Response.....	SF-25
Hazardous Spill & Site Response.....	SF-26
Hazardous Substance Response - Support.....	SF-29
Hazardous Substance Response - Office of Water.....	SF-31
Hazardous Substance Response - Office of Air and Radiation.....	SF-33
Hazardous Substance Response - Interagency.....	SF-34
Department of Health & Human Services.....	SF-38
United States Coast Guard.....	SF-39
Department of Justice.....	SF-40
Federal Emergency Management Agency.....	SF-40
National Oceanic & Atmospheric Administration.....	SF-41
Department of the Interior.....	SF-41
Occupational Safety & Health Administration.....	SF-42

SUPERFUND
Hazardous Substance Response

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988	
----- (DOLLARS IN THOUSANDS) -----							
PROGRAM -----							
Hazardous Spill & Site Response							
Hazardous Substance	\$773,295.4	\$805,927.1	\$763,395.5	1135,690.3	1214,639.4	\$78,949.1	
TOTAL	\$773,295.4	\$805,927.1	\$763,395.5	1135,690.3	1214,639.4	\$78,949.1	
TOTAL:							
Hazardous Substance	\$773,295.4	\$805,927.1	\$763,395.5	1135,690.3	1214,639.4	\$78,949.1	
Hazardous Substance Response	TOTAL	\$773,295.4	\$805,927.1	\$763,395.5	1135,690.3	1214,639.4	\$78,949.1
PERMANENT WORKYEARS -----							
Hazardous Spill & Site Response	859.4	1,042.1	1,070.1	988.3	1,090.7	102.4	
TOTAL PERMANENT WORKYEARS	859.4	1,042.1	1,070.1	988.3	1,090.7	102.4	
TOTAL WORKYEARS -----							
Hazardous Spill & Site Response	940.0	1,042.1	1,070.1	1,042.1	1,090.7	48.6	
TOTAL WORKYEARS	940.0	1,042.1	1,070.1	1,042.1	1,090.7	48.6	

SUPERFUND

Hazardous Substance Response - Environmental Protection Agency

Budget Request

The Agency requests a total of \$1,214,639,400 supported by 1,090.7 total workyears in 1989 for the Hazardous Substance Superfund appropriation, an increase of \$78,949,100 and 48.6 total workyears from 1988. In addition, \$100,000,000 in prior year funds will provide the Agency with a total of \$1,314,639,400, an increase of \$178,949,100 from 1988. The increase reflects the continuing emphasis on remedial design and construction activities that will be undertaken to meet the activity schedule mandated by the Superfund Amendments and Reauthorization Act (SARA). This level insures funding for all sites ready for remedial action in 1989, and anticipates meeting statutory deadlines.

Program Description

This program is responsible for protecting public health and the environment from the dangers associated with releases of hazardous substances into the environment by providing the necessary funding and support to undertake short-term emergency responses and long-term site cleanup. The activities include responding to spills and emergency releases of hazardous substances and conducting remedial work at abandoned and uncontrolled hazardous waste sites.

Hazardous Spill and Site Response -- The Agency coordinates an emergency response program to deal with the most serious hazardous substance spills and site emergencies where the responsible party or State and local governments are unable to respond adequately. The Agency also conducts a comprehensive program to evaluate all known hazardous waste sites, establishes priorities for remedial response, and undertakes the appropriate remedy at as many sites as possible when responsible parties are unwilling or unable to respond. The Headquarters Response program establishes policy framework, coordinates the setting of priorities, allocates resources, and provides implementation guidance. The Regions have lead responsibility for conducting all preliminary field work to identify site problems and for managing or working with the States on all phases of National Priorities List (NPL) site cleanup and emergency response actions.

HAZARDOUS SPILL AND SITE RESPONSE

1989 Program Request

The Agency requests a total of \$1,214,639,400 supported by 1,090.7 total workyears for the Hazardous Substance Superfund appropriation. In addition to the new authority, \$100,000,000 in prior year funds will provide the Agency with a total of \$1,314,639,400, an increase of \$178,949,100 and 48.6 total workyears from 1988. This increase supports additional design and construction activity, as well as continuing emphasis in site review and evaluation, and contract and information management.

Removal: The Agency will receive and screen hazardous substance release notifications to determine what, if any, response is required. In the vast majority of cases, the responsible party or State or local government will take the lead in addressing the problem. In situations where more than one State is involved or where there is an unusually complex problem, the Federal government will coordinate and fund the response. EPA and the Coast Guard will continue to

maintain an emergency response capability, including EPA's Environmental Response Team (ERT), comprised of Agency employees with special engineering and scientific expertise. This improves the Agency's ability to provide timely engineering and scientific advice to Federal, State, and local officials during hazardous substance response actions, resulting in reliable and cost-effective solutions to existing and potential environmental threats.

The Agency will continue to use the expanded removal authorities for emergency actions. The removal program will stabilize NPL sites where significant threats exist while additional long-term response is being considered. These efforts enable the Agency to take immediate action to protect public health and the environment without waiting for the completion of a long-term analysis of the site or the results of more detailed site assessments. In addition to responding to emergencies, removals will be taken where an immediate response is not critical, but some early response is necessary to protect public health or the environment.

Remedial: The remedial program covers all work including initial site screening and listing, the study, design and construction phases of the response action, and post-cleanup site maintenance and deletion. Decisions on remedy selection for site cleanup will incorporate preference for permanent remedy, alternative treatment technologies and alternatives to land disposal, as mandated by SARA. Site-specific factors, such as the cooperation of responsible parties, availability of State resources, and changes in field conditions, couple with the Agency's mandated remedy selection factors to influence the progress of the program.

The Agency's priority will be to meet the mandated SARA schedules for remedial investigation/feasibility studies (RI/FS) and remedial actions (RA), and to support to completion cleanup actions started in prior years. In 1989, the Agency will be starting 75 Fund-financed remedial designs (RD) and 50 Fund-financed remedial actions. In addition, the Agency will be managing a growing number of sites started in prior years which are in the RD and RA phases of site cleanup.

For sites on the NPL ready to begin planning for cleanup, the Agency will start 70 Fund-financed RI/FS. This will maintain the Agency's steady-state pipeline of new sites beginning remedial cleanup.

The pre-remedial program will stress improving the effectiveness of site screening during early site evaluation to ensure that the Agency's responses are focused on the most serious environmental and public health threats. Finally, the Agency, in cooperation with the States, will conduct operations and maintenance at sites where the cleanup is complete, resulting in final deletion from the NPL.

The Agency will issue final directives on the regulatory guidance for the National Contingency Plan (NCP), as well as guidance for streamlined decision-making, RI/FS, and selection of remedy. The Agency will emphasize training and technical assistance to aid in the implementation of site management planning at priority sites. This will help identify opportunities for early action and improve the effectiveness of the remedial program.

1988 Program

In 1988, the Agency is allocating a total of \$1,135,690,300 supported by 1,042.1 total workyears from the Hazardous Substance Superfund appropriation.

This is the first full year after enactment of SARA. The majority of the work is continuing to be geared toward implementing SARA provisions and moving into the construction, or RA phase, of remedial projects. The Agency is continuing

several initiatives started in 1987 to emphasize active State and Federal coordination, including changes to the NCP. In an effort to strengthen contract management resources, the Agency is beginning to implement a diversified contracting strategy.

The Agency is planning emergency responses at 190 major hazardous substance releases and providing on-scene monitoring and oversight at other releases of hazardous substances. In addition, the regulatory and guidance framework are being completed for the removal program, including use of revised removal authorities and promulgation of final regulations on CERCLA notification, reportable quantities, and the designation of additional hazardous substances.

The Agency is focusing its remedial efforts on the selection of remedy at sites on the NPL and beginning design and construction at sites where planning has been completed. In 1988, the Agency is starting 78 Fund-financed RDs and 49 Fund-financed RAs. In addition, new studies are starting at 70 NPL sites.

The Agency is continuing the emphasis started in 1987 to develop and utilize new and innovative treatment technologies in the selection of remedy process. The cooperative effort initiated with other agencies for assessing risks to human health continues to be a priority.

Regulatory guidance for the NCP is being proposed. The Agency is developing and implementing procedures to identify and characterize sites that represent the greatest environmental and public health threats from hazardous wastes. This is enabling the Agency to focus early on during the decision process so that site planning activities and available resources can be directed toward those priority sites that have the most immediate need for cleanup.

1988 Explanation of Changes from the Enacted Level

The net increase of \$371,457,800 results from the inclusion of planned prior year funds.

1987 Accomplishments

The Agency obligated a total of \$773,295,400 supported by 940.0 total workyears for this program from the Hazardous Substance Superfund appropriation. This was a year of transition following an extended period of program slowdown. The major objectives were to regain program momentum after the slowdown period, to implement SARA, and to initiate management improvements. The Agency began work on revising the NCP and Hazard Ranking System (HRS) to incorporate SARA requirements.

Even with the difficulties in implementing the new authorities and requirements in SARA, the Agency accomplished significant levels of removal and remedial activities. In the effort to gear up, emphasis was placed on the addition of sites to the NPL and on the collection and analysis of data to justify remedial action and support the development of treatment alternatives. The Agency conducted 4,001 preliminary assessments and 1,343 site investigations as part of the pre-remedial program. The Agency began 66 new RI/FS, 56 RDs and 25 RA projects at NPL sites. The removal program conducted 227 removal actions, the largest number of removals since the program began in 1980, and monitored the removal of hazardous substances carried out by responsible parties or State and local authorities at 422 incidents.

SUPERFUND
Hazardous Substance Response - Support

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988
--	----------------	----------------------------	-----------------	-----------------------------	-----------------	--

(DOLLARS IN THOUSANDS)

PROGRAM

Hazardous Substance
Response - OW
Hazardous Substance

TOTAL

\$1,803.9	\$2,122.1	\$2,122.1	\$2,113.2	\$2,112.8	-\$.4
\$1,803.9	\$2,122.1	\$2,122.1	\$2,113.2	\$2,112.8	-\$.4

Hazardous Substance
Response - OAR
Hazardous Substance

TOTAL

\$1,216.5	\$1,963.4	\$1,963.4	\$1,840.6	\$1,840.6
\$1,216.5	\$1,963.4	\$1,963.4	\$1,840.6	\$1,840.6

TOTAL:

Hazardous Substance

\$3,020.4	\$4,085.5	\$4,085.5	\$3,953.8	\$3,953.4	-\$.4
-----------	-----------	-----------	-----------	-----------	--------

Hazardous Substance
Response - Support

TOTAL

\$3,020.4	\$4,085.5	\$4,085.5	\$3,953.8	\$3,953.4	-\$.4
-----------	-----------	-----------	-----------	-----------	--------

PERMANENT WORKYEARS

Hazardous Substance
Response - OW

8.0	24.0	24.0	23.0	24.0	1.0
-----	------	------	------	------	-----

Hazardous Substance
Response - OAR

6.2	18.0	18.0	15.7	18.0	2.3
-----	------	------	------	------	-----

TOTAL PERMANENT WORKYEARS

14.2	42.0	42.0	38.7	42.0	3.3
------	------	------	------	------	-----

SUPERFUND
Hazardous Substance Response - Support

ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988
----------------	----------------------------	-----------------	-----------------------------	-----------------	--

(DOLLARS IN THOUSANDS)

TOTAL WORKYEARS

Hazardous Substance Response - OW	9.5	24.0	24.0	24.0	24.0
Hazardous Substance Response - OAR	7.5	18.0	18.0	18.0	18.0
TOTAL WORKYEARS	17.0	42.0	42.0	42.0	42.0

SUPERFUND

Hazardous Substance Response - Support

Budget Request

The Agency requests a total of \$3,953,400 supported by 42.0 total workyears for this program, all of which is for the Hazardous Substance Superfund appropriation. This represents a \$400 reduction in operating costs and no change in total workyears from 1988.

Program Description

Hazardous Substance Response - Office of Water -- This program enables the Office of Water to carry out specific activities required by SARA. These activities include: (1) assessing the type of treatment required for Superfund wastes prior to their discharge into publicly-owned treatment works (POTWs); (2) establishing controls and/or conditions for Superfund sites likely to have a discharge to POTWs or surface waters; (3) establishing protection of drinking water supplies; and (4) establishing drinking water criteria and standards for Federal response and enforcement actions.

Hazardous Substance Response - Office of Air and Radiation -- This program enables the Office of Air and Radiation to provide technical support for hazardous waste site cleanup activities. This support includes the use of air quality models and the establishment of temporary air monitoring networks around sites, where warranted.

HAZARDOUS SUBSTANCE RESPONSE - OFFICE OF WATER

1989 Program Request

The Agency requests a total of \$2,112,800 supported by 24.0 total workyears for 1989, all of which will be for the Hazardous Substance Superfund appropriation. This represents a decrease of \$400 due to a slight reduction in operating costs.

During 1989, guidance on the treatment of Superfund wastes discharged into POTWs will be completed. In 1989, the Agency will continue its efforts to characterize wastewater from Superfund sites. The Compatibility Analysis begun in 1987 will be updated, as three additional sites are sampled and analyzed to expand the data base on the treatment and characteristics of wastewater. In addition, analytical methods and QA/QC procedures will be developed as necessary.

Regions will continue to review disposal alternatives and/or coordinate and develop discharge controls for an expanded list of Superfund sites. Additionally, they will participate in meetings to develop workplans for each National Priority List (NPL) site. The need for new or revised local limits will be analyzed at approximately 50 facilities identified as receiving CERCLA wastewaters. Regions will continue to review remedial action alternatives to ensure that they address water quality considerations. Compliance with imposed discharge conditions will be assessed at locations where Superfund facilities discharge into surface waters.

The Regions will continue to review response actions to ensure that applicable, relevant and appropriate drinking water standards are among the benchmarks that are applied. Where Maximum Contaminant Levels (MCLs) or Maximum Contaminant Level Goals (MCLGs) have not been established for a particular contaminant, the Regions will provide assistance with toxicological data. Once a

site with a contaminated water supply has been selected for inclusion on the NPL, the Regions will participate in reviewing Remedial Investigations (RI), Feasibility Studies (FS), and in preparing Records of Decision (ROD). These studies document the final cleanup actions of contaminated water supplies and address the need to provide alternate water supplies.

The Regions, together with the States, will evaluate the effectiveness of drinking water remedial actions and will provide oversight of drinking water regulations to meet requirements under the Safe Drinking Water Act (SDWA).

1988 Program

In 1988, the Agency is allocating a total of \$2,113,200 supported by 24.0 total workyears for this program, all of which is from the Hazardous Substance Superfund appropriation.

During 1988, emphasis is being placed on preparing guidance for the treatment of Superfund wastes discharged into POTWs. EPA will continue a limited collection and analysis of technical information that characterizes wastewater from Superfund sites. The Compatibility Analysis begun in 1987 to determine potential POTW interference levels for specific pollutants in wastewaters and sludges is being updated with three additional site studies.

The Regional review of disposal alternatives and/or coordination and development of discharge controls is being increased as cleanup activities are undertaken by EPA for an expanded list of Superfund sites. Assistance is being provided to POTWs for developing local limits and/or other control mechanisms where such facilities will receive Superfund wastewaters. Evaluations are being required for existing discharges to ensure that such wastewaters are in compliance with imposed discharge conditions.

The Regions are reviewing response actions to ensure that applicable, relevant and appropriate drinking water standards are applied. They are also participating in the review of RI/FSs and in preparing RODs which document the final cleanup actions of contaminated water supplies, particularly the need to provide alternate water supplies. Analytical information is being provided for the feasibility study process which compares the cost-effectiveness of remedial alternatives.

The Regions, together with the States, are evaluating the effectiveness of drinking water remedial actions and are providing oversight of drinking water regulations to meet requirements under SDWA.

1987 Accomplishments

In 1987, the Agency obligated a total of \$1,803,900 supported by 9.5 total workyears for this program, all of which was from the Hazardous Substance Superfund appropriation.

In 1987, EPA initiated limited activities to collect and analyze technical information on the character and treatability of wastewaters from Superfund sites. EPA provided guidance on the necessary treatment of Superfund wastes prior to their discharge into POTWs. The program identified sites with potential discharges to POTWs and characterized the wastewater, treatment techniques, and costs. This information was used in a Compatibility Analysis to determine potential POTW interference levels for specific pollutants in both wastewaters and sludges.

In 1987, the Agency established conditions/controls for Superfund facilities that were likely to discharge either into a POTW or directly into surface waters. Activities included the review of disposal alternatives and the development of

case-specific discharge controls where discharge to POTW/surface water was the selected proposal alternative. In addition, assistance was provided to POTWs in developing local limits and/or other control mechanisms where such facilities received Superfund wastewaters.

Technical assistance was provided to State health officials on drinking water concerns. Assistance was given in characterizing both the relative health risk associated with the potential contamination of water supplies and the need for remedial action. Input was also provided to the feasibility study of remedial alternatives.

HAZARDOUS SUBSTANCE RESPONSE - OFFICE OF AIR AND RADIATION

1989 Program Request

The Agency requests a total of \$1,840,600 supported by 18.0 total workyears for this program, all of which will be for the Hazardous Substance Superfund appropriation. This represents no change from FY 1988.

In 1989 the program will continue to provide technical support for hazardous waste site cleanup activities. This support includes the use of air quality models to determine risks posed by air emissions from cleanup activities, and establishment of temporary air monitoring networks around sites where warranted. Review of potential disposal techniques and technology will be undertaken, as will review of remedial action plans prior to implementation. The two laboratories operated by the Office of Radiation Programs will provide analysis of samples that may be radioactive.

1988 Program

In 1988 the Agency is allocating a total of \$1,840,600 supported by 18.0 total workyears for this program, all of which is from the Hazardous Substance Superfund appropriation.

In 1988 technical support, including air quality modeling and monitoring, is being provided for cleanup activities. The radiation laboratories are providing analysis of samples that may be radioactive.

1987 Accomplishments

In 1987, the Agency obligated \$1,216,500 for this program supported by 7.5 total workyears, all of which is from the Hazardous Substance Superfund appropriation. The program provided training and development of technical data and guidance to determine the air and radiation impacts and remedial measures for Superfund sites. The radiation laboratory provided sample analysis.

		SUPERFUND					
		Hazardous Substance Response - Interagency					
		ACTUAL	BUDGET	ENACTED	CURRENT	REQUEST	INCREASE +
		1987	ESTIMATE	1988	ESTIMATE	1989	DECREASE -
			1988		1988		1989 VS 1988

(DOLLARS IN THOUSANDS)							
PROGRAM							

Interagency Superfund							
Department of Health &							
Human Services (ATSDR)							
Hazardous Substance							
		\$32,439.3	\$50,000.0	\$43,000.0	\$43,000.0	\$43,000.0	
	TOTAL	\$32,439.3	\$50,000.0	\$43,000.0	\$43,000.0	\$43,000.0	
Interagency Superfund							
Department of Health &							
Human Services (NIEHS)							
Hazardous Substance							
			\$18,915.0	\$15,915.0	\$15,915.0	\$15,915.0	
	TOTAL		\$18,915.0	\$15,915.0	\$15,915.0	\$15,915.0	
Interagency Superfund							
United States Coast							
Guard							
Hazardous Substance							
		\$4,023.3	\$4,948.2	\$4,948.2	\$4,948.2	\$4,948.2	
	TOTAL	\$4,023.3	\$4,948.2	\$4,948.2	\$4,948.2	\$4,948.2	
Interagency Superfund							
Department of Justice							
Hazardous Substance							
		\$10,918.6	\$13,773.0	\$13,773.0	\$13,773.0	\$16,700.0	\$2,927.0
	TOTAL	\$10,918.6	\$13,773.0	\$13,773.0	\$13,773.0	\$16,700.0	\$2,927.0
Interagency Superfund							
Federal Emergency							
Management Agency							
Hazardous Substance							
		\$667.5	\$1,879.6	\$1,879.6	\$1,879.6	\$1,879.6	
	TOTAL	\$667.5	\$1,879.6	\$1,879.6	\$1,879.6	\$1,879.6	
Interagency Superfund							
FEMA-Relocation							
Hazardous Substance							
		\$506.2			\$80.0		-\$80.0
	TOTAL	\$506.2			\$80.0		-\$80.0

SUPERFUND
Hazardous Substance Response - Interagency

		ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988
<hr/>							
(DOLLARS IN THOUSANDS)							
Interagency Superfund							
National Oceanic							
& Atmospheric							
Administration							
Hazardous Substance		\$1,819.9	\$2,280.1	\$2,280.1	\$2,280.1	\$2,280.1	
TOTAL		\$1,819.9	\$2,280.1	\$2,280.1	\$2,280.1	\$2,280.1	
Interagency Superfund							
Department of Interior							
Hazardous Substance		\$687.0	\$1,253.5	\$1,253.5	\$1,253.5	\$1,253.5	
TOTAL		\$687.0	\$1,253.5	\$1,253.5	\$1,253.5	\$1,253.5	
Interagency Superfund							
Occupational Safety &							
Health Administration							
Hazardous Substance		\$281.3	\$1,008.2	\$1,008.2	\$1,008.2	\$1,008.2	
TOTAL		\$281.3	\$1,008.2	\$1,008.2	\$1,008.2	\$1,008.2	
TOTAL:							
Hazardous Substance							
Response - Interagency							
Hazardous Substance		\$51,343.1	\$94,057.6	\$84,057.6	\$84,137.6	\$86,984.6	\$2,847.0
Hazardous Substance	TOTAL	\$51,343.1	\$94,057.6	\$84,057.6	\$84,137.6	\$86,984.6	\$2,847.0
Response - Interagency							

SUPERFUND

Hazardous Substance Response - Interagency

Budget Request

The Agency requests a total of \$86,984,600 for the Hazardous Substance Superfund appropriation for Interagency activities in 1989, an increase of \$2,847,000 from 1988. The increase will be used to support expanding civil litigation casework. The requested funding will finance the on-going Superfund program activities of the Department of Health and Human Services (HHS), the United States Coast Guard (USCG), the Department of Justice (DOJ), the National Oceanic and Atmospheric Administration (NOAA), the Department of the Interior (DOI), the Federal Emergency Management Agency (FEMA), and the Occupational Safety and Health Administration (OSHA). These agencies and offices request workyears in their own budget requests.

Program Description

Executive Order 12580, signed by the President in January 1987, requires the Agency to manage an interagency budget process culminating in a consolidated budget request for the entire Superfund program. The activities of other Federal agencies are divided into two basic categories. The first category includes those activities which are episodic in nature and taken in direct support of specific site or spill response actions. The second category of other Federal agency involvement is support for on-going activities which are generally not incident-specific. These activities are related to each agency's specific area of expertise and include developing program policies and guidance, conducting health research, training response personnel, litigating civil and criminal cases, and providing scientific and technical advice to EPA on-scene coordinators. These actions are financed by the funds requested in this subactivity.

Department of Health and Human Services (HHS) -- The Agency for Toxic Substances and Disease Registry (ATSDR) was established under CERCLA and its health authorities were significantly expanded under SARA. In addition, SARA mandated Superfund responsibilities to the National Institute for Environmental Health Sciences (NIEHS). ATSDR has the authority to investigate complaints of illness or disease related to exposure to hazardous substances, to conduct health studies and surveys, to develop appropriate testing for exposed individuals, and to develop and maintain information on the health effects of toxic substances. Under SARA, ATSDR must perform health assessments by December 11, 1988, at all sites that were listed on the National Priority List (NPL) as of October 17, 1986.

ATSDR is mandated, in cooperation with EPA, to identify and rank the first 100 most hazardous substances found at Superfund sites and to produce by October 17, 1988, a second list of 100 priority hazardous substances. A toxicological profile must be produced for each of the identified substances. The toxicological profiles are to be developed at the rate of at least 25 per year; the first 25 were due by April 17, 1987. Additional and expanded activities mandated by SARA for ATSDR are to: (1) perform health assessments when petitioned by citizens; (2) conduct studies and ensure that research results undergo peer review; (3) assemble, develop, and distribute health information related to hazardous substances; and (4) report to Congress on health-related activities. HHS will develop policies and procedures to ensure a coordinated Federal approach in conducting these activities.

NIEHS administers a program for basic research, development, and training to increase the understanding of the relationships between exposure to hazardous substances and human health. In addition, NIEHS manages grants to nonprofit

organizations for first response and preparedness training for workers who are engaged in activities related to hazardous substance removal and containment at remedial or emergency response sites. The basic research grants span the areas of basic biomedical studies in epidemiology, biomedicine and human health exposure, and integrated non-biomedical studies in engineering, geosciences, and analytical chemistry. Worker protection grants provide training to workers to prevent health problems caused by exposure to hazardous substances.

United States Coast Guard (USCG) -- The USCG has the authority under CERCLA as amended to respond to any release or threatened release of hazardous substances involving the coastal zone, Great Lakes waters, ports, and harbors. USCG provides training to maintain this response capability, conducts enforcement activities as necessary in its areas of responsibility, and maintains the National Response Center (NRC).

Department of Justice (DOJ) -- The Attorney General has responsibility to conduct and control all litigation arising under CERCLA as amended. EPA prepares the required technical and legal documentation and assists DOJ in the negotiation of consent decrees for privately financed response actions. Once DOJ receives a referral from EPA, DOJ reviews the referral package and files it in court. After filing, DOJ goes through an intensive process for trial preparation. It includes: (1) completion of the discovery process; (2) preparation and review of the documents; (3) support of on-going negotiations; and (4) work with expert witnesses and program staff.

Federal Emergency Management Agency (FEMA) -- FEMA has the authority under CERCLA as amended to provide temporary and permanent relocation housing for individuals whose health is threatened by hazardous substance releases. In addition, FEMA assists the National Response Team (NRT) and Regional Response Teams (RRTs) in their preparedness activities and develops training courses for State and local officials in emergency management.

National Oceanic and Atmospheric Administration (NOAA) -- In an effort to ensure that Fund-financed response actions in coastal and marine areas are conducted in full compliance with CERCLA as amended, the National Contingency Plan (NCP) designates NOAA as Federal Trustee of these resources. In addition, NOAA provides resources for the purchase, development, and field testing of state-of-the-art sampling and analytical equipment necessary for efficient and safe response operations associated with implementing the Superfund program. NOAA also manages a computer-based communication and information system designed to identify likely accident locations, perform trajectory analysis of spilled hazardous materials, assess potential human and environmental impacts of accidents, and train response personnel via spill simulation.

Department of the Interior (DOI) -- The goals of the Department of the Interior's Superfund activities are to: (1) ensure that the Department maintains a state of readiness to support EPA and the Coast Guard in their response modes; (2) protect natural resources from the effects of hazardous substance releases; and (3) assure appropriate consideration of natural resource concerns throughout all phases of CERCLA implementation. DOI is a participating agency in the NRT and RRTs under the guidance of the National Contingency Plan. The Department is explicitly directed to act as a trustee for natural resources under CERCLA, by Executive Order 12580, and the National Contingency Plan.

Occupational Safety and Health Administration (OSHA) -- OSHA and the States which operate OSHA-approved State plans are responsible for ensuring that employees at Superfund sites are provided safe and healthful working conditions. OSHA issues occupational safety and health standards and enforces those standards through a program of on-site inspections which are conducted at OSHA's initiative or in response to reports of imminent danger, fatalities and catastrophes, employee

complaints or referrals from other agencies. OSHA also administers training and technical assistance programs to encourage and assist employers to comply voluntarily with the requirements of the Occupational Safety and Health Act.

DEPARTMENT OF HEALTH AND HUMAN SERVICES (HHS)

1989 Program Request

The Agency requests a total of \$58,915,000 (\$43,000,000 for ATSDR and \$15,915,000 for NIEHS) for the Hazardous Substance Superfund appropriation for this program. This request represents no change from the 1988 level. This level provides support for ATSDR's efforts in the areas of scientific support, emergency response, health studies, and in the development of toxicology data bases. ATSDR will continue to perform site consultations and health assessments at NPL and non-NPL sites and in response to citizen petitions. ATSDR will provide support for the maintenance of toxicology data bases for chemicals generally found at Superfund sites or encountered in emergency situations, and will continue to prepare additional toxicology profiles of hazardous substances.

NIEHS requests funds to continue the university based basic research program and to conduct the training associated with basic research. The results of this research on the effects of exposure to hazardous substances may help to resolve technical and public health problems faced at Superfund remedial action and emergency response sites. In addition, NIEHS will continue the worker safety training program to train workers who are at high risk of disease and death from acute and significant low level exposure to hazardous substances.

1988 Program

In 1988, the Agency is allocating a total of \$58,915,000 (\$43,000,000 for ATSDR and \$15,915,000 for NIEHS) from the Hazardous Substance Superfund appropriation to this program. ATSDR is continuing its support for mandated health assessments, toxic substances lists, reporting requirements, and grants programs, and the maintenance of health support activities that are required to meet the increased demands. These resources are enabling ATSDR to: develop protocols for site-specific exposure registries; conduct birth defect studies at Superfund sites; support the Headquarters and field core staff necessary to provide scientific and technical advice to EPA on-scene coordinators as they assess the public health hazard at priority sites; and review environmental test results for indications of human health hazard. On a continuing basis, ATSDR provides health-related field guidance and laboratory support at emergency response sites for worker protection.

The NIEHS basic biomedical research and training program has expanded to include important new studies in the fields of engineering, geology, hydrogeology, and ecology. Each of the new investigations is related to an improved understanding of how best to handle abandoned or uncontrolled hazardous substances and to better protect human health and the environment. The worker safety training grant program trains over 15,000 laborers and other workers who are at high risk of disease and death from acute and significant low level exposure to hazardous substances.

1987 Accomplishments

In 1987, \$32,439,300 was obligated from the Hazardous Substance Superfund appropriation by HHS. These resources enabled ATSDR to: (1) complete 165 NPL health assessments and establish 11 State cooperative agreements to conduct health assessments of sites within their borders; (2) prepare 25 toxicological profiles

in draft; (3) respond to approximately 1,200 emergency releases and implement a contract to train emergency medical technicians in health issues of emergency response; (4) conduct a national workshop on how to implement a national exposure registry; (5) prepare a comprehensive draft final report to the Congress on the nature and extent of childhood lead poisoning in the United States; (6) gain approval for an ATSDR Board of Scientific Counselors; (7) support the National Library of Medicine enabling an increase in the number of substances in its Hazardous Substances Data Bank (HSDB) and strengthen its peer review of the HSDB; (8) support toxicological testing of chemicals through the the National Toxicology Program (NTP); and (9) implement a National Institute of Occupational Safety and Health sponsored exposure registry of workers exposed to carcinogenic substances.

NIEHS awarded grants to four universities to provide support for programs of basic biomedical research into the effects of hazardous substances to human health. The approved projects include several studies designed to identify new and improved methods to: measure exposure and its effects; assess the risks resulting from exposure; and reduce the recognized early health effects. This new program will combine basic research in the fields of ecology, engineering, and geosciences into a biomedical research program core. The core is designed to provide a broader and more detailed body of scientific information which may be used by State, local and Federal agencies, private organizations, and industry in the management of hazardous substances.

UNITED STATES COAST GUARD (USCG)

1989 Program Request

The Agency requests a total of \$4,948,200 for the Hazardous Substance Superfund appropriation. This request represents no change from the 1988 level. These resources will allow the Coast Guard to continue to conduct removals and monitor non-Federally funded cleanup in coastal areas. Resources will be applied to support: the NRT and RRT; the development or improvement of chemical response equipment necessary for safe responses to Superfund incidents; and the development and maintenance of information services for program management analysis and the necessary chemical assessment data systems.

1988 Program

In 1988, the Agency is allocating a total of \$4,948,200 from the Hazardous Substance Superfund appropriation. These resources are for the maintenance of response requirements by the USCG in 1988. The USCG is continuing to develop and maintain information systems that provide data for program management, train emergency response personnel using program modules and simulation drills, and maintain records of characteristics for certain chemicals.

1987 Accomplishments

In 1987, \$4,023,300 was obligated from the Hazardous Substance Superfund appropriation by USCG. This funding was used to purchase safety equipment, conduct response training for USCG personnel, upgrade the capabilities of the National Response Center (NRC), and provide field data systems to support response programs and minimize the possibility of harm to personnel from exposure to hazardous substances. USCG added personnel to the district offices to coordinate RRT activities and enhance Regional contingency planning. Personnel were also added to two outlying ports in an effort to upgrade chemical spill response capability in those areas.

Department of Justice (DOJ)

1989 Program Request

The Agency requests a total of \$16,700,000 for the Hazardous Substance Superfund appropriation. This represents an increase of \$2,927,000 for increased caseload and automated data support for complex cases. This will support the expanded Superfund caseload and the operation of a system which provides automated data support for complex cases.

DOJ will increase its support to EPA in reviewing negotiated consent decrees, de minimis "cashout" settlements, enforcement of information requests, and an expanded docket of access cases. Civil penalties will be imposed in instances where responsible parties violate notification requirements of CERCLA as amended, deny access to sites, destroy records, violate financial responsibility regulations, or violate administrative and judicial settlement agreements. Criminal cases will be pursued and continued support will be provided to EPA's expanded cost recovery efforts. DOJ will also defend the Agency against citizen suits, pre-enforcement review cases, reimbursement claims, and challenges to EPA administrative civil penalty decisions.

1988 Program

In 1988, the Agency is allocating a total of \$13,773,000 from the Hazardous Substance Superfund appropriation for this program. DOJ is providing civil and criminal enforcement litigation which includes: counseling on and enforcing administrative orders; giving warrants for entry; and instituting suits to compel removal and remedial actions and to recover response costs incurred by the Fund.

1987 Accomplishments

In 1987, \$10,918,600 was obligated from the Hazardous Substance Superfund appropriation by DOJ. These resources were used for litigation and other enforcement related activities. Key accomplishments included the filing of 16 referral/litigation, or Section 106, cases and 35 cost recovery, or Section 107, cases. In addition to the cases filed, DOJ supported 47 Section 106 and 87 Section 107 on-going cases filed prior to 1987. DOJ also concluded three Section 106 cases and 11 Section 107 cases by consent decrees and took three Section 107 cases to trial.

FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA)

1989 Program Request

The Agency requests a total of \$1,879,600 for the Hazardous Substance Superfund appropriation for FEMA. This request represents no change from the 1988 level. These resources will be used to enhance local, State, and Federal emergency preparedness and administrative support. In addition, funding levels will support the revision of relocation manuals, provide additional audio-visual support material for distribution at the State and local levels, and develop additional curricula for hazardous materials training and team building to improve specialized response capabilities.

1988 Program

In 1988, the Agency is allocating a total of \$1,879,600 from the Hazardous Substance Superfund appropriation. In addition, \$80,000 is being allocated to support relocation activities. FEMA will apply these resources to continue its

relocation, training, and emergency preparedness activities. FEMA is also continuing its support of the FEMA/DOT information exchange program, furthering its coordination efforts with public and private organizations, and maintaining its support for NRT initiatives.

1987 Accomplishments

In 1987, \$1,173,700 was obligated from the Hazardous Substance Superfund by FEMA, of which \$506,200 was to support temporary and permanent relocations. These resources were used to: (1) support FEMA's development of relocation guidelines and regulations; (2) provide management oversight for temporary and permanent relocations; (3) provide preparedness guidance and technical assistance to State and local governments; (4) establish the FEMA/DOT information exchange system; (5) enhance coordination of hazardous materials issues with the public and private sector; (6) provide continued support for NRT/RRT initiatives; and (7) support the FEMA/EPA instructor exchange program. FEMA also developed knowledge, skill, and abilities (KSA) standards for instructors and continued to deliver existing training systems at the State and local level.

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION (NOAA)

1989 Program Request

The Agency requests a total of \$2,280,100 for the Hazardous Substance Superfund appropriation for NOAA. This request represents no change from the 1988 level. These resources will allow NOAA to continue its efforts to support: (1) Federal on-scene coordinators' use of advanced information technology for emergency information technology for responses; (2) coastal resource coordination and hazardous waste remedial support activities that ensure full compliance with CERCLA; and (3) RRT contingency planning efforts and other activities related to NOAA responsibilities.

1988 Program

In 1988, the Agency is allocating \$2,280,100 from the Hazardous Substance Superfund appropriation for NOAA. These resources are supporting efforts to implement alternative technologies and meet State standards that will result in permanent remedies. NOAA is continuing to provide scientific support, coastal resource coordination, and hazardous waste removal and remedial support service. In addition, NOAA is assisting State and local entities in the areas of contingency planning, community relations, communications, preparedness evaluation, and training.

1987 Accomplishments

In 1987, \$1,819,900 was obligated from the Hazardous Substance Superfund appropriation by NOAA. These resources were used to provide training for the scientific response team, to purchase and maintain protective equipment for personnel, and to maintain field instrumentation.

DEPARTMENT OF THE INTERIOR (DOI)

1989 Program Request

The Agency requests a total of \$1,253,500 for the Hazardous Substance Superfund appropriation for DOI. This request represents no change from the 1988 level. These resources will be applied to response preparedness and management

for the NRT and RRTs. Resources will also be used to provide technical assistance to State and Federal natural resources trustees and to facilitate the enforcement activities of the EPA and the Department of Justice.

1988 Program

In 1988, the Agency is allocating a total of \$1,253,500 for the Hazardous Substance Superfund appropriation for DOI. DOI is utilizing these funds to support its participation in: NRT/RRT preparedness and training activities, response planning, and response action implementation. Further, DOI is continuing its efforts to provide technical assistance and review for natural resources damages.

1987 Accomplishments

In 1987, \$687,000 was obligated from the Hazardous Substance Superfund appropriation by DOI. These resources enabled DOI to participate in NRT/RRT preparedness and training activities and to initiate its involvement in State and local emergency preparedness and technical assistance to natural resources trustees.

OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA)

1989 Program Request

The Agency requests a total of \$1,008,200 for the Hazardous Substance Superfund appropriation for OSHA. This request represents no change from the 1988 level. The resources will allow OSHA to continue a Federal inspection program of Superfund sites, to support the preparedness and training activities of the National and Regional Response Teams and to deliver OSHA's hazardous waste training course. Funds will also provide support for laboratory analyses of samples collected for OSHA's Superfund inspection program and for State inspection efforts.

1988 Program

In 1988, the Agency is allocating a total of \$1,008,200 from the Hazardous Substances Superfund appropriation. The funding is being used for a Federal inspection program of Superfund sites and to support the activities of the National and Regional Response Teams. These funds also are being used for hazardous waste training, laboratory analyses, and on-site technical assistance at the request of EPA or another lead agency.

1987 Accomplishments

In 1987, \$281,300 was obligated from the Hazardous Substance Superfund appropriation by OSHA. The funds were used to train OSHA inspectors, initiate a special inspection program for Superfund sites, provide technical assistance to EPA, provide support for the activities of the National and Regional Response Teams, and develop a required worker protection standard.

ENVIRONMENTAL PROTECTION AGENCY

1989 Budget Estimate

Table of Contents

	<u>Page</u>
<u>SUPERFUND</u>	
ENFORCEMENT	
Hazardous Substance Response - Enforcement.....	SF-44
Hazardous Substance Technical Support - Office	
of Enforcement & Compliance Monitoring.....	SF-48
Hazardous Substance Technical Enforcement.....	SF-49
Hazardous Substance Legal Enforcement.....	SF-51
Hazardous Substance Criminal Investigations.....	SF-53

SUPERFUND
Hazardous Substance Response-Enforcement

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988	
----- (DOLLARS IN THOUSANDS) -----							
PROGRAM							

Hazardous Substance Technical Support - Office of Enforcement And Compliance Monitoring Hazardous Substance	\$7,926.9	\$8,864.0	\$8,864.0	\$8,739.0	\$8,739.0		
TOTAL	\$7,926.9	\$8,864.0	\$8,864.0	\$8,739.0	\$8,739.0		
Hazardous Substance Technical Enforcement Hazardous Substance	\$82,948.5	\$96,114.3	\$98,115.8	\$97,448.2	\$107,346.3	\$9,898.1	
TOTAL	\$82,948.5	\$96,114.3	\$98,115.8	\$97,448.2	\$107,346.3	\$9,898.1	
Hazardous Substance Legal Enforcement Hazardous Substance	\$8,849.5	\$14,477.8	\$14,477.8	\$13,479.0	\$13,858.9	\$379.9	
TOTAL	\$8,849.5	\$14,477.8	\$14,477.8	\$13,479.0	\$13,858.9	\$379.9	
Hazardous Substance Criminal Investigations Hazardous Substance	\$629.5	\$1,467.9	\$1,467.9	\$1,592.9	\$1,592.9		
TOTAL	\$629.5	\$1,467.9	\$1,467.9	\$1,592.9	\$1,592.9		
TOTAL: Hazardous Substance	\$100,354.4	\$120,924.0	\$122,925.5	\$121,259.1	\$131,537.1	\$10,278.0	
Hazardous Substance Response-Enforcement	TOTAL	\$100,354.4	\$120,924.0	\$122,925.5	\$121,259.1	\$131,537.1	\$10,278.0

SUPERFUND
Hazardous Substance Response-Enforcement

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988
----- (DOLLARS IN THOUSANDS) -----						
PERMANENT WORKYEARS -----						
Hazardous Substance Technical Support - Office of Enforcement And Compliance Monitoring	31.1	45.5	45.5	45.5	45.5	
Hazardous Substance Technical Enforcement	489.3	653.0	665.2	613.9	701.4	87.5
Hazardous Substance Legal Enforcement	162.2	262.5	262.5	246.1	262.5	16.4
Hazardous Substance Criminal Investigations	8.9	17.3	17.3	17.3	17.3	
TOTAL PERMANENT WORKYEARS	691.5	978.3	990.5	922.8	1,026.7	103.9
TOTAL WORKYEARS -----						
Hazardous Substance Technical Support - Office of Enforcement And Compliance Monitoring	34.5	45.5	45.5	45.5	45.5	
Hazardous Substance Technical Enforcement	529.7	653.0	665.2	650.2	701.4	51.2
Hazardous Substance Legal Enforcement	191.2	262.5	262.5	262.5	262.5	

SUPERFUND
Hazardous Substance Response-Enforcement

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988
<hr/>						
(DOLLARS IN THOUSANDS)						
Hazardous Substance Criminal Investigations	9.1	17.3	17.3	17.3	17.3	
TOTAL WORKYEARS	764.5	978.3	990.5	975.5	1,026.7	51.2

SUPERFUND

Hazardous Substance Response - Enforcement

Budget Request

The Agency requests a total of \$131,537,100 supported by 1,026.7 total workyears for 1989 for the Hazardous Substance Superfund appropriation for technical, administrative, and legal enforcement activities. This represents an increase of \$10,278,000 and 51.2 workyears from 1988. The increase reflects expanded efforts to secure responsible party (RP) site cleanup and to pursue recovery of Federal and State costs from RPs.

Program Description

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, as amended by the Superfund Amendments and Reauthorization Act (SARA) of 1986, was enacted in response to the threat to public health and the environment posed by uncontrolled hazardous substances releases. Enforcement is a major EPA activity under Superfund designed to obtain maximum cleanup action by the polluters responsible for the environmental damage caused by them.

The complex activities involved in the Superfund enforcement program require a close working relationship between Agency legal and technical operations, the Department of Justice (DOJ), and other Agency offices. Within this framework, legal and technical enforcement information is developed about a site and its potentially responsible parties. Based on this information and in consultation with State and program staffs, a Fund-financed or RP-financed study is conducted to determine a remedy consistent with the National Contingency Plan (NCP).

Through negotiations, RPs are given the opportunity to design and construct the remedy necessary to alleviate the identified threat. If negotiations are not successful, the remedial action proceeds using Trust Fund resources, and a future cost recovery action is initiated against the RPs. Alternatively, litigation may be initiated to compel an RP response. Agreements by RPs to undertake response actions are ratified in the form of CERCLA Section 104/106 administrative orders on consent for remedial investigation/feasibility studies (RI/FS) and removal actions or consent decrees for remedial response actions (RA). In the event of non-compliance with the terms of an order or decree, civil action is taken to enforce the order or decree.

Hazardous Substance Technical Support - Office of Enforcement and Compliance Monitoring -- This program supports the Superfund activities of the National Enforcement Investigations Center (NEIC). The NEIC provides specialized technical support for civil and criminal litigation development in nationally managed cases, cases having precedent-setting implications, cases with multi-Regional impacts, and cases which are extremely complex or involve unique technological requirements. Specialized support includes field investigations, laboratory analysis of high hazard samples, and preparation of technical testimony.

Hazardous Substance Technical Enforcement -- This program develops technical documentation for Superfund enforcement actions. Activities include identifying RPs and providing technical support for all stages of the negotiation and settlement process, as well as litigative action conducted by DOJ. Once the RP agrees to conduct site cleanup, the program is also responsible for the oversight to assure compliance with the settlement. If the RP will not conduct the response action, the program will initiate cost recovery as Fund-financed activities proceed. Technical support is also provided for State-lead enforcement actions and Federal facility response.

Hazardous Substance Legal Enforcement -- This program provides the legal staff for Superfund enforcement. The program conducts Federal enforcement actions under SARA including: judicial enforcement activities during negotiations, settlement referral and litigation, Federal cost recovery actions, and assistance to the States in the development of enforcement and cost recovery actions in conjunction with Federal enforcement.

Hazardous Substance Criminal Investigations -- The basic goal of this program, which is under the direction of the NEIC, is to initiate and conduct criminal investigations under SARA. The Criminal Investigations program takes the lead in oversight of implementation of criminal enforcement policy for SARA, participation in prosecution of criminal cases with national or precedent-setting significance, development of training programs, and development of criminal cases for Agency personnel.

HAZARDOUS SUBSTANCE TECHNICAL SUPPORT - OFFICE OF ENFORCEMENT AND COMPLIANCE MONITORING

1989 Program Request

The Agency requests a total of \$8,739,000 supported by 45.5 total workyears for this program, all of which will be for the Hazardous Substance Superfund appropriation. The request represents no change in dollars or total workyears from 1988.

In 1989 NEIC will continue to provide its full range of support services in response to the new demands of SARA. Areas of continuing emphasis will include:

Responsible Party Searches -- An increased emphasis on negotiations will make early, comprehensive searches much more important. NEIC provides support to the Regions in automated data base analysis of corporate histories and ownership.

Nonbinding Preliminary Allocations of Responsibility and De Minimis Settlements -- These two areas will use NEIC's unique information retrieval systems and technical analysis skills to assess the character of hazardous wastes involved in the allocation process and to support complex settlements involving de minimis parties.

Section 106 and 107 Judicial Actions -- NEIC will continue to provide analytical expertise in developing judicial cases and supporting their complex expert testimony needs through to completion. Evidence audit support will be provided to assure the accuracy of site records, as the number of actions being prepared for litigation for remedy or cost recovery increases.

Criminal Referrals under Section 103 and Negotiation for Cleanup at Federal Facility Sites -- These areas will experience continued emphasis as a result of the significant increase in criminal enforcement authorities and explicit emphasis on Federal facilities in the reauthorized statute.

This program will also continue to conduct field investigations in support of case development, provide laboratory analysis including groundwater sample analysis, provide technical testimony, negotiate technical aspects of key consent decrees, ensure evidence audit quality control, and provide for the safe disposal of hazardous waste material gathered during criminal investigations.

1988 Program

In 1988, the Agency is allocating a total of \$8,739,000 supported by 45.5 total workyears for this program, all of which is from the Hazardous Substance Superfund appropriation.

As a result of reauthorization, the technical support program at NEIC is responding to a growing demand for services. This is due primarily to three factors: growth in the size of the National Priority List (NPL) which increases demand for the special environmental monitoring work, growth in levels of enforcement-related activities, and the introduction of several new areas of responsibility. These areas include work related to nonbinding preliminary allocations of responsibility, de minimis settlements, and Federal facility sites. In addition, laboratory and technical support work due to changes in the criminal provisions of the statute will see expanded activity. Evidence audit control processes are being continued to ensure that proper chain-of-custody procedures are followed.

In areas of special sensitivity, such as criminal case management or Federal facility enforcement, NEIC is able to provide high caliber staff expertise without the risk of conflict of interest which might be inherent in the use of contractor staff. NEIC also protects the Agency's interests by continuing to audit contract laboratories.

1987 Accomplishments

In 1987, the Agency obligated a total of \$7,926,900 supported by 34.5 total workyears for this program, all of which was from the Hazardous Substance Superfund appropriation.

In 1987, NEIC supported new and on-going civil and criminal judicial enforcement actions, handled requests for computerized information system searches for data relating to responsible parties and sites, conducted quality assurance inspections at contract laboratories, and participated in several major environmental assessment projects such as providing significant support to the Groundwater Monitoring Task Force. In addition, NEIC continues to provide extensive technical assistance to EPA and State laboratories in the following areas: analytical procedures; preparation and handling of high hazard samples; disposal of hazardous laboratory wastes; shipping and safety procedures; protection and restoration plans; site investigations and safety procedures.

NEIC also continued its in-depth studies of chemical hazards to laboratory and field personnel engaged in hazardous waste investigations.

HAZARDOUS SUBSTANCE TECHNICAL ENFORCEMENT

1989 Program Request

The Agency requests a total of \$107,346,300 supported by 701.4 total workyears for this program, all of which will be for the Hazardous Substance Superfund appropriation. This reflects an increase of \$9,898,100 and 51.2 total workyears to compel and oversee RP response at sites and to initiate cost recovery actions in major cases.

The Technical Enforcement effort in 1989 will focus on managing an expanding remedial enforcement pipeline of sites already underway, while also assuring that responsible parties begin work at previously unaddressed sites. A large number of sites currently under study are expected to reach the final cleanup stages by 1989. The program anticipates providing oversight of 70 new remedial designs and 35 new remedial actions conducted by responsible parties. This represents an increase of 16 remedial designs and 16 remedial action starts above the 1988 level. The Agency will oversee these, as well as other remedial and removal actions, to ensure that responsible parties complete the cleanup as agreed upon in the settlement.

The program will encourage settlements with responsible parties through the use of de minimis and mixed funding settlements. Where settlement is not achieved, the program will swiftly pursue litigation in referring cases to DOJ. In 1989, the Agency expects to refer 91 settlement and litigation cases to DOJ.

A key component of the Technical Enforcement program will be an aggressive cost recovery effort. The Agency will pursue an estimated 56 new cost recovery actions at sites where Fund-financed cleanup has occurred.

The Enforcement program will finalize guidance implementing the revised NCP based on a review of the effectiveness of interim SARA policies and other SARA requirements. Included will be revised guidance on the administrative record, RP enforcement and oversight, the settlement policy, special notice, and mixed funding and de minimis settlements. Major cost recovery improvements will include updating the current manual and developing arbitration procedures.

The Agency will provide support to States to assist them with enforcement actions at NPL sites and to ensure that subsequent site deletion is in accordance with the NCP. Technical assistance grants will allow communities to analyze recommended remedies. Maintenance of the administrative record will demonstrate that the NCP has been adhered to in the selection of the remedy.

Technical assistance will be provided to other Federal agencies that are addressing uncontrolled hazardous wastes at their own facilities. EPA, in accordance with CERCLA and SARA mandates, will concur with or select the site remedy and will negotiate an agreement with the agencies to implement the remedy. To the extent possible, EPA will seek reimbursement for expenses at these sites.

CERCLA enforcement authorities will also be used to ensure that owners and operators will conduct pre-remedial and planning activities at selected environmentally significant closed or closing hazardous waste storage and treatment facilities.

1988 Program

In 1988, the Agency is allocating a total of \$97,448,200 supported by 650.2 total workyears, all of which is from the Hazardous Substance Superfund appropriation, to secure and oversee responsible party cleanup action at NPL and other priority sites and to pursue cost recovery actions.

The program is using 1988 resources to select remedies at sites currently under study and to encourage responsible parties to take over the cleanup effort. Procedures for maintaining the administrative record are being developed to ensure that the remedy selected at these sites is consistent with the NCP. The program is selecting site remedies for the 57 RP-financed studies estimated for completion in 1988.

Once remedies have been selected, negotiations will occur. De minimis and mixed funding settlements are an integral piece of negotiations with RPs. In cases where a settlement is not reached, the Agency is pursuing litigation. An estimated 85 settlement and litigation cases are being referred to DOJ.

In addition to selecting site remedies and negotiating with RPs, the program is assuring that RPs comply with agreed upon cleanup activities at sites where a settlement has been reached and work is underway. In 1988, the program is planning to oversee 54 remedial designs and 19 remedial actions.

Where Fund-financed action has proceeded, the program is pursuing administrative or judicial cost recovery actions. The Enforcement program plans to refer approximately 51 Judicial actions to DOJ.

The first Federal Facility Docket is being finalized. The Agency is overseeing an estimated 25 studies to determine site remediation. EPA must concur on the other agencies selection of remedy. In addition, enforcement efforts are expanding in the Resource Conservation and Recovery Act (RCRA) and CERCLA interface area with emphasis on RCRA land ban regulations, closures, and other applicable regulations.

1987 Accomplishments

In 1987, the Agency obligated \$82,948,500 and used 529.7 total workyears, all of which was from the Hazardous Substance Superfund appropriation.

Major efforts were initiated to implement the provisions of SARA. The program reviewed and modified existing policies to improve oversight of and settlements with RPs. The Agency conducted oversight of 40 RP cleanup studies, 5 RP remedial designs and 6 RP remedial actions. In addition, the program assured that 33 negotiated removal actions conducted by RPs met Agency standards. The program also conducted negotiations and referred 11 cases to DOJ for settlement or litigation.

The Federal Facility Task Force was initiated to develop policy and implement procedures for Section 120 provisions of SARA. The Task Force also provided support to the Regions as they developed complex and precedent-setting interagency agreements.

The Agency expanded cost recovery efforts by referring 24 cases to DOJ. The total value of cost recovery activities reached \$51,000,000 by the end of 1987.

HAZARDOUS SUBSTANCE LEGAL ENFORCEMENT

1989 Program Request

The Agency requests a total of \$13,858,900 supported by 262.5 total workyears for this program, all of which will be for the Hazardous Substance Superfund appropriation. This represents an increase of \$379,900 and no change in total workyears from 1988. The increase supports additional operating costs.

Superfund legal enforcement work will continue to fall into two major categories: actions to secure privately-financed site cleanup and cost recovery actions to recoup Fund dollars actually expended in Fund-financed cleanup. Enforcement actions to secure privately-financed cleanup allow Fund resources to be focused on orphaned sites or sites with insolvent responsible parties where use of the Fund presents the only available response option. Recovery actions return monies to the Fund and permit the Agency to address a larger number of sites.

Headquarters staff will continue to serve in two capacities. The first is the development of policy and guidance materials. Implementation of the broader SARA enforcement provisions will continue to require development of policy and guidance for new issues. In addition, early policies which were, of necessity, general in nature, will need major revisions based on case-specific applications. Finally, revised guidance will often be necessary to incorporate lessons learned during management reviews of overall program performance.

The second Headquarters role is that of litigation support. Although the trend in CERCLA will be to decrease Headquarters participation in litigation management, this objective will be counter-balanced by the anticipated growth in the number of precedent-setting actions expected to be ready for prosecution in 1989. Two important criteria for Headquarters involvement will be the need for

special subject-matter expertise and the express request of the Regions. Headquarters staff will also provide a focal point for exchange of ideas and strategies useful for particularly complex cases or in cases where responsible parties are particularly recalcitrant. Headquarters will, in some cases, take the lead in enforcement actions, particularly in case development for Section 106 consent decrees and in such relatively new areas as de minimis settlements and administrative cost recovery.

The emphasis of SARA on negotiation with responsible parties and on mandatory schedules will continue to have significant impact on the involvement of the Regional legal enforcement in the response to new waste sites. In addition, SARA substantially broadened the mandate for public participation in the cleanup process and introduced several new enforcement remedies that required an expansion in Regional legal enforcement work in 1988. Areas of intense Regional legal effort required or emphasized by the SARA legislation continue to include the following:

- o Administrative Records must be able to withstand court scrutiny in determinations regarding responsibility to conduct remedial action and/or respond to cost recovery claims.
- o Nonbinding Preliminary Allocations of Responsibility require active legal enforcement support, particularly in the allocation phase, if they are to be useful in subsequent negotiations.
- o De Minimis Settlements require legal involvement to insure that they are appropriately handled with respect to subsequent negotiations.
- o Consent Decrees are now required to codify successful completion of negotiations with Responsible Parties to conduct remedial designs and remedial actions.
- o Use of Administrative or Civil Judicial Remedies for Reportable Quantity Violations will result in legal enforcement activity in an area where formerly only criminal remedies were available.
- o Federal facilities will demand substantial legal enforcement participation to ensure that agreements are properly negotiated and implemented.

Because of the preeminence of negotiation, legal enforcement will continue to be involved much earlier in the enforcement decision-making process than was true prior to the enactment of SARA. Substantial emphasis will also be placed on cost recovery actions.

1988 Program

In 1988, the Agency is allocating a total of \$13,479,000 supported by 262.5 total workyears for this program, all of which is from the Hazardous Substance Superfund appropriation.

Legal work is continuing on a number of landmark CERCLA cases in California, New York, Missouri, and Massachusetts. Early legal involvement in enforcement actions is important to achieve maximum environmental benefits. This involvement assists in the cost identification of intermediate steps in the enforcement process to achieve progress in cleanup actions. In 1988, a large proportion of Regional legal resources are being utilized in preliminary enforcement activity and in administrative enforcement. This shift of legal staff attention to earlier stages in the enforcement process should prove cost-effective by reducing the need for protracted judicial litigation. Civil judicial referrals are used primarily against responsible parties who are potentially liable for cleanup of very significant sites and for major cost recovery actions.

Headquarters support for judicial enforcement shows an upswing as the Agency establishes precedents with new types of enforcement activity such as de minimis settlements, consent decrees codifying negotiations with responsible parties to undertake site response activities, civil remedies for reportable quantity violations, and nonbinding preliminary allocations of responsibility. Headquarters continues to provide active support to major on-going litigation for both remedial action and cost recovery.

1987 Accomplishment

In 1987, the Agency obligated \$8,849,500 supported by 191.2 total workyears for this program, all of which was from the Hazardous Substance Superfund appropriation.

In 1987, Headquarters staff provided significant support to negotiations and trial preparation for cases such as Stringfellow, Love Canal, and the Missouri dioxin sites. The settlement of the dioxin case against the Charter Company involved recovery of \$5,000,000 in response costs, a major success.

During 1987, Headquarters developed guidance for new SARA provisions, including de minimis settlements, access to sites, and arbitration regulations. These guidances will improve the SARA implementation process and ensure consistency in Federal Superfund enforcement actions. In addition to on-site consultation, technical assistance efforts included development of an automated model for calculation of interest payable by defendants in cost recovery cases and the establishment of an automated, key word, full text library of model CERCLA consent decrees.

A task force begun in conjunction with DOJ with the goal of streamlining and smoothing the civil and judicial enforcement process made substantial progress on settlement procedures. Regional work continued on landmark CERCLA cases, such as the New Bedford Harbor and Environmental Conservation and Chemical cases. Significant legal support was devoted to preliminary enforcement activity and administrative enforcement. Civil judicial referrals and follow through continued to demand significant Regional legal support. Emphasis was placed on cost recovery actions.

HAZARDOUS SUBSTANCE CRIMINAL INVESTIGATIONS

1989 Program Request

The Agency requests a total of \$1,592,900 supported by 17.3 total workyears for this program, all of which will be for the Hazardous Substance Superfund appropriation. This represents no change in dollars or total workyears from 1988.

The reauthorization contains a number of significant provisions which will improve the effectiveness of the Agency's criminal enforcement program. For instance, existing criminal sanctions for the failure to report releases of hazardous substances, the destruction of records, and the submission of false information in a claim have been raised from the misdemeanor to felony level and are now punishable by a maximum of three years imprisonment. As a result, criminal enforcement activity under SARA is expected to continue at the increased levels experienced in 1988. Major increases in the number of sites on the NPL will also contribute to an increase in criminal caseload, particularly in the area of destruction of records and submitting false information. Criminal cases are also expected to be more complex.

1988 Program

In 1988, the Agency is allocating a total of \$1,592,900 supported by 17.3 total workyears for this program, all of which is from the Hazardous Substance Superfund appropriation.

In 1988, criminal investigative activity is responding to an increase in the volume and complexity of Superfund-related issues. With an aggressive use of the more severe SARA sanctions, the regulated community is expected to become more aware of the penalties associated with the destruction of records or the submission of false information. In 1988, the clear establishment of the Agency's deterrent message on these important concerns is made through an increase in referral activity.

1987 Accomplishments

In 1987, the Agency obligated a total of \$629,500 supported by 9.1 total workyears, all of which is from the Hazardous Substance Superfund appropriation.

Investigative resources were devoted to implementing the expanded enforcement authorities under SARA linked, as appropriate, to other statutory enforcement actions for maximum impact.

ENVIRONMENTAL PROTECTION AGENCY

1989 Budget Estimate

Table of Contents

<u>SUPERFUND</u>	<u>Page</u>
MANAGEMENT & SUPPORT	
Hazardous Substance Management and Support.....	SF-56
Hazardous Substance Financial Management - Headquarters.....	SF-63
Hazardous Substance Financial Management - Regions.....	SF-64
Hazardous Substance Administrative Management - Headquarters.....	SF-65
Hazardous Substance Administrative Management - Regions.....	SF-65
Hazardous Substance Support Services - Headquarters.....	SF-66
Hazardous Substance Support Services - Regions.....	SF-67
Hazardous Substance Computer Services.....	SF-67
Hazardous Substance Legal Services - Headquarters.....	SF-68
Hazardous Substance Legal Services - Regions.....	SF-68
Hazardous Substance-Office of the Inspector General.....	SF-69
Hazardous Substance-Office of Policy, Planning & Evaluation.....	SF-70
Hazardous Substance-Office of the Comptroller.....	SF-71
Hazardous Substance-Office of External Affairs.....	SF-72
Hazardous Substance-Office of Research and Development- Lab Support.....	SF-72

SUPERFUND

Management and Support

		ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988
(DOLLARS IN THOUSANDS)							
PROGRAM							
Hazardous Substance Financial Management - Headquarters							
	Hazardous Substance	\$9,518.3	\$15,555.0	\$15,555.0	\$15,615.0	\$8,934.3	-\$6,680.7
	TOTAL	\$9,518.3	\$15,555.0	\$15,555.0	\$15,615.0	\$8,934.3	-\$6,680.7
Hazardous Substance Financial Management Regions							
	Hazardous Substance	\$2,650.5	\$6,443.4	\$6,443.4	\$6,268.1	\$6,439.0	\$170.9
	TOTAL	\$2,650.5	\$6,443.4	\$6,443.4	\$6,268.1	\$6,439.0	\$170.9
Hazardous Substance Administrative Management - Headquarters							
	Hazardous Substance	\$8,927.2	\$15,905.0	\$15,905.0	\$14,697.1	\$12,764.7	-\$1,932.4
	TOTAL	\$8,927.2	\$15,905.0	\$15,905.0	\$14,697.1	\$12,764.7	-\$1,932.4
Hazardous Substance Administrative Management - Regions							
	Hazardous Substance	\$2,115.8	\$2,785.2	\$2,785.2	\$2,836.9	\$3,001.3	\$164.4
	TOTAL	\$2,115.8	\$2,785.2	\$2,785.2	\$2,836.9	\$3,001.3	\$164.4
Hazardous Substance Support Services - Headquarters							
	Hazardous Substance	\$17,633.8	\$25,428.8	\$25,428.8	\$26,268.8	\$30,121.1	\$3,852.3
	TOTAL	\$17,633.8	\$25,428.8	\$25,428.8	\$26,268.8	\$30,121.1	\$3,852.3

SUPERFUND
Management and Support

		ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988

(DOLLARS IN THOUSANDS)							
Hazardous Substance Support Services - Regions							
Hazardous Substance		\$13,696.9	\$9,925.0	\$9,925.0	\$11,425.0	\$13,909.0	\$2,484.0
TOTAL		\$13,696.9	\$9,925.0	\$9,925.0	\$11,425.0	\$13,909.0	\$2,484.0
Hazardous Substance Computer Services							
Hazardous Substance		\$3,417.2	\$4,700.0	\$4,700.0	\$4,700.0	\$7,247.7	\$2,547.7
TOTAL		\$3,417.2	\$4,700.0	\$4,700.0	\$4,700.0	\$7,247.7	\$2,547.7
Hazardous Substance Legal Services - Headquarters							
Hazardous Substance		\$541.8	\$666.0	\$666.0	\$666.0	\$666.0	
TOTAL		\$541.8	\$666.0	\$666.0	\$666.0	\$666.0	
Hazardous Substance Legal Services - Regions							
Hazardous Substance		\$858.0	\$1,309.4	\$1,309.4	\$1,159.0	\$1,159.0	
TOTAL		\$858.0	\$1,309.4	\$1,309.4	\$1,159.0	\$1,159.0	
Office of the Inspector General							
Hazardous Substance		\$4,581.2	\$6,896.1	\$6,896.1	\$6,896.1	\$6,896.1	
TOTAL		\$4,581.2	\$6,896.1	\$6,896.1	\$6,896.1	\$6,896.1	
Hazardous Substance Office of Policy, Planning And Evaluation							
Hazardous Substance		\$3,482.5	\$4,113.5	\$4,113.5	\$4,113.5	\$3,433.5	-\$680.0
TOTAL		\$3,482.5	\$4,113.5	\$4,113.5	\$4,113.5	\$3,433.5	-\$680.0

SUPERFUND
Management and Support

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988
----- (DOLLARS IN THOUSANDS) -----						
Hazardous Substance Office of the Comptroller						
Hazardous Substance	\$572.2	\$1,144.0	\$1,144.0	\$1,144.0	\$1,294.0	\$150.0
TOTAL	\$572.2	\$1,144.0	\$1,144.0	\$1,144.0	\$1,294.0	\$150.0
Hazardous Substance - Office of External Affairs						
Hazardous Substance	\$47.8			\$202.5	\$202.5	
TOTAL	\$47.8			\$202.5	\$202.5	
Hazardous Substance Office of Research and Development - Lab Support						
Hazardous Substance	\$216.9	\$250.0	\$250.0	\$250.0	\$250.0	
TOTAL	\$216.9	\$250.0	\$250.0	\$250.0	\$250.0	
TOTAL:						
Hazardous Substance	\$68,260.1	\$95,121.4	\$95,121.4	\$96,242.0	\$96,318.2	\$76.2
Management and Support TOTAL	\$68,260.1	\$95,121.4	\$95,121.4	\$96,242.0	\$96,318.2	\$76.2
 PERMANENT WORKYEARS -----						
Hazardous Substance Financial Management - Headquarters	37.7	57.0	57.0	53.0	53.0	
Hazardous Substance Financial Management Regions	50.7	96.0	96.0	89.8	96.0	6.2

SUPERFUND
Management and Support

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988
----- (DOLLARS IN THOUSANDS)						
Hazardous Substance Administrative Management - Headquarters	91.7	157.6	157.6	152.3	152.3	
Hazardous Substance Administrative Management - Regions	53.4	63.8	63.8	64.2	71.1	6.9
Hazardous Substance Legal Services - Headquarters	6.1	9.0	9.0	9.0	9.0	
Hazardous Substance Legal Services - Regions	19.4	25.9	25.9	24.8	25.9	1.1
Hazardous Substance Office of the Inspector General	45.1	52.8	52.8	52.8	52.8	
Hazardous Substance Office of Policy, Planning And Evaluation	6.0	12.8	12.8	10.0	12.8	2.8
Hazardous Substance Office of the Comptroller	8.7	9.9	9.9	11.9	11.9	
Hazardous Substance - Office of External Affairs	.5			3.0	3.0	
TOTAL PERMANENT WORKYEARS	319.3	484.8	484.8	470.8	487.8	17.0

SUPERFUND
Management and Support

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988
----- (DOLLARS IN THOUSANDS) -----						
TOTAL WORKYEARS -----						
Hazardous Substance Financial Management - Headquarters	39.3	57.0	57.0	53.0	53.0	
Hazardous Substance Financial Management - Regions	58.4	96.0	96.0	96.0	96.0	
Hazardous Substance Administrative Management - Headquarters	98.2	157.6	157.6	152.3	152.3	
Hazardous Substance Administrative Management - Regions	64.0	63.8	63.8	71.1	71.1	
Hazardous Substance Legal Services - Headquarters	6.5	9.0	9.0	9.0	9.0	
Hazardous Substance Legal Services - Regions	23.2	25.9	25.9	25.9	25.9	
Hazardous Substance Office of the Inspector General	45.7	52.8	52.8	52.8	52.8	
Hazardous Substance Office of Policy, Planning And Evaluation	8.0	12.8	12.8	12.8	12.8	

SUPERFUND
Management and Support

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988
<hr/>						
	(DOLLARS IN THOUSANDS)					
Hazardous Substance Office of the Comptroller	8.9	9.9	9.9	11.9	11.9	
Hazardous Substance - Office of External Affairs	.5			3.0	3.0	
TOTAL WORKYEARS	352.7	484.8	484.8	487.8	487.8	

SUPERFUND

Hazardous Substance Management and Support

Budget Request

The Agency requests a total of \$96,318,200 supported by 487.8 total workyears for 1989, an increase of \$76,200 and no change in total workyears from 1988. All of the request will be for the Hazardous Substance Superfund appropriation. These increases reflect the additional management and support required for the operation of an expanding Hazardous Substances Response program.

Program Description

This function provides the full array of financial, administrative, management analysis and support services necessary to manage and implement the Superfund program.

Hazardous Substance Financial Management - Headquarters and Regions -- This component contains two program elements which maintain financial records, track and report on the use of the Hazardous Substance Response Trust Fund, and provide site-specific cost documentation for cost recovery cases.

Hazardous Substance Administrative Management - Headquarters and Regions -- These program elements provide resources to fund the Superfund administrative services necessary to award and administer contracts, process personnel actions, provide central management and technical support for Superfund information systems, acquire and maintain Superfund office and laboratory services, provide technical assistance and training for the Superfund program staff to assure the safety of those employees, and manage Superfund property inventories.

Hazardous Substance Support Services - Headquarters and Regions -- This component contains two program elements which cover the costs of space, utilities, printing, equipment, and other nonpersonnel support needs that are allocable to the Hazardous Substance Superfund appropriation.

Hazardous Substance Computer Services -- This program element funds the data processing (timesharing) costs of operating and maintaining all Superfund information systems.

Hazardous Substance Legal Services - Headquarters and Regions -- These program elements fund the activities of the Office of the General Counsel (OGC) and the Office of the Regional Counsels under Superfund. These activities include statutory interpretations of the Superfund Amendments and Reauthorization Act (SARA), and the issuance of opinions and advice regarding the use of the Hazardous Substance Response Trust Fund and other financial, administrative, or legal issues. In addition, OGC acts as the Agency's chief counsel in defending regulatory and other Agency decisions regarding the implementation of SARA. The Offices of the Regional Counsels advise and assist the Regions and States in interpreting the Act and represent the Regions in defensive litigation activities.

Hazardous Substance - Office of the Inspector General -- The program element provides appropriate audits and investigations of the Hazardous Substance Response Trust Fund, as well as pre-award, interim, and final audits of contracts awarded under the Superfund program, and audits of Cooperative Agreements with the States.

Hazardous Substance - Office of Policy, Planning and Evaluation -- This program element provides policy analysis, program evaluation, management assessment, and technical support and analysis under the Superfund program.

Hazardous Substance - Office of the Comptroller -- The program element funds resource analysis and budgeting under Superfund. These activities include budget development and oversight, response to OMB and Congressional inquiries, analysis of program operating plans, issuance of allowances, and resource analyses on critical issues pertaining to the utilization of Superfund monies.

Hazardous Substance - Office of External Affairs -- External Affairs activities will focus on developing policies and guidance for Section 120 implementation for Federal Facility cleanup, providing technical assistance and advice to Federal Agencies on the development of CERCLA/SARA programs required by E.O. 12088 and assisting in addressing the new community and State involvement, community right-to-know and public participation requirements of SARA.

Hazardous Substance - Office of Research and Development - Lab Support -- This program element provides the essential laboratory support services required to operate and maintain the Office of Research and Development's Superfund research program in three remote laboratories across the country. These support services include facilities operation and maintenance, utilities and equipment operations, rental costs, and other nonpersonnel laboratory support needs that are allocable to the Hazardous Substance Superfund appropriation.

HAZARDOUS SUBSTANCE FINANCIAL MANAGEMENT - HEADQUARTERS

1989 Program Request

The Agency requests a total of \$8,934,300 supported by 53.0 total workyears for this program, all of which will be for the Hazardous Substance Superfund appropriation. This represents a decrease of \$6,680,700 and no change in total workyears from 1988. The decrease reflects the completion of equipment acquisition to support cost recovery and site specific documentation purchased in 1988. This program will provide for the implementation and maintenance of a nationwide document storage and retrieval system. The system will allow for the automated collection and retrieval of documents for the site-specific cost documentation files and the complete and timely documentation of costs incurred at Superfund sites.

The program will continue to provide the level of Headquarters financial management support necessary to ensure the integrity of Superfund site-specific cost accounting data. This encompasses the review and reconciliation of Headquarters site-specific documents as they are being processed to assure that the information is accurate as well as to assure that it is entered into the Financial Management System accurately. It also includes monitoring of Headquarters costs charged to site-specific accounts by EPA employees, other Federal agencies, State and local governments, and commercial entities to ensure that amounts are properly documented and within budget. The program will also calculate and apply indirect cost rates to assure that full Agency costs are charged to sites and claimed in cost recovery actions. In addition, the program will provide for basic financial services including payroll support, invoice and voucher processing, reports preparation, and funds control for Headquarters.

1988 Program

In 1988, the Agency is allocating a total of \$15,615,000 supported by 53.0 total workyears for this program, all of which is from the Hazardous Substance Superfund appropriation. These resources provide for the purchase of an automated document collection and retrieval system that is necessary to maintain pace with the increased requests for cost documentation. These resources also provide for the establishment of current cost documentation files in Headquarters so that costs claimed in cost recovery litigation can be supported immediately. This is particularly important in bankruptcy cases where time is of the essence. In the

past, an extensive manual file search has been necessary to gather documents that support costs being claimed. In addition, these resources provide for an enhanced level of review and reconciliation to insure the integrity of Headquarters charges posted against site-specific accounts in the Financial Management System as well as providing for basic financial services to an expanding Superfund program.

1987 Accomplishments

In 1987, the Agency obligated a total of \$9,518,300 supported by 39.3 total workyears for this program, all of which was from the Hazardous Substance Superfund appropriation. These resources provided for limited site-specific accounting support and allowed for preparation of cost recovery documentation after a case entered the negotiation or litigation phase. Experience has shown that complete documentation is often not available, and that advance case preparation is necessary. Also provided were basic financial services for the Superfund program such as payroll and invoice processing. Funds obligated also provided for a pilot study of an automated document storage and retrieval system.

HAZARDOUS SUBSTANCE FINANCIAL MANAGEMENT - REGIONS

1989 Program Request

The Agency requests a total of \$6,439,000 supported by 96.0 total workyears for this program, all of which will be for the Hazardous Substance Superfund appropriation. This represents an increase of \$170,900 and no change in total workyears from 1988. The increase reflects additional operating costs. This will provide for the collection and verification of Regional cost documentation and the reconciliation of these documents with the Financial Management System on a current basis. This will be done by establishing a cost documentation file in each Region as costs are incurred rather than gathering documentation at a later date. This will allow the Agency to respond immediately with documentation for bankruptcy cases where time is of the essence as well as assure that all documents needed for protracted negotiation or litigation are available when requested. Resources will also provide for the review of State accounting systems and for support to assure that State systems adequately document expenditures of Federal assistance so that they too can be recovered from responsible parties. Also included are resources necessary to provide basic financial services to the Regional Superfund program for payroll and voucher processing, funds control and reporting for management and program purposes.

1988 Program

In 1988, the Agency is allocating a total of \$6,268,100 supported by 96.0 total workyears for this program, all of which is from the Hazardous Substance Superfund appropriation. These resources support the enhanced Regional Superfund financial activities. These activities include payroll, voucher processing, funds control and reporting for management purposes. Resources will provide site-specific accounting support which will be used for cost-recovery litigation.

1987 Accomplishments

In 1987, the Agency obligated a total of \$2,650,500 supported by 58.4 total workyears for this program, all of which was from the Hazardous Substance Superfund appropriation. With these resources, the Regional financial management offices provided site-specific accounting support and gathered Regional cost documentation as requested by Regional counsel when cases entered the negotiation or litigation phases. Also provided were basic financial services for the Regional Superfund program such as payroll and invoice processing and reporting.

HAZARDOUS SUBSTANCE ADMINISTRATIVE MANAGEMENT - HEADQUARTERS

1989 Program Request

The Agency requests a total of \$12,764,700 supported by 152.3 total workyears for this program, all of which will be for the Hazardous Substance Superfund appropriation. This represents a decrease of \$1,932,400 and no workyear change from 1988. The decrease reflects completion of an equipment acquisition to support information management. We will continue to effectively award, administer, and manage rapidly increasing numbers of Superfund contracts, as well as assure quality control over contracts with increasingly high obligation amounts and provide support for continued development and implementation of automated information systems. These resources will also provide centralized administrative services for Superfund activities such as: awarding and managing contracts and assuring accountability for cooperative and interagency agreements; managing automated systems; developing health and safety training courses; implementing specialized medical monitoring programs; providing recruitment, staffing, training/development, management and organizational analysis, and classification activities; and providing sufficient facilities management to support the overall Superfund program.

1988 Program

In 1988, the Agency is allocating a total of \$14,697,100 supported by 152.3 total workyears for this program, all of which is from the Hazardous Substance Superfund appropriation. These resources enable the program to provide centralized administrative and management services to Superfund activities. In 1988, emphasis will be on awarding and managing increasing numbers of contracts, grants, cooperative and interagency agreements. Special emphasis will be placed on oversight of grants activities and developing guidance for more complex cooperative agreements and new program grants. Another priority is to recruit properly qualified personnel and to provide for the intense and specialized training needs of Superfund employees, and to provide management and organizational analysis to strengthen Superfund management processes. Significant investment is also being placed on revising or developing information systems including systems to track hazardous substance releases at Federal Facilities.

1987 Accomplishments

In 1987, the Agency obligated a total of \$8,927,200 supported by 98.2 total workyears for this program, all of which was from the Hazardous Substance Superfund appropriation. These resources enabled the Agency to award and administer the contracts and cooperative and interagency agreements required to carry out emergency and remedial response activities and provided central technical support for developing, operating, and maintaining all automated Superfund information systems. The Agency also refined health and safety standards and procedures, and maintained and supported the Agency personnel requirements of the Superfund program staff. The Agency developed delegations of authority so that Superfund activities could be carried out in an effective manner.

HAZARDOUS SUBSTANCE ADMINISTRATIVE MANAGEMENT - REGIONS

1989 Program Request

The Agency requests a total of \$3,001,300 supported by 71.1 total workyears for this program, all of which will be for the Hazardous Substance Superfund appropriation. This represents an increase of \$164,400 and no change in total workyears from 1988. The increase reflects additional operating costs. Regional administrative management activities will include: continuing recruitment of personnel to

work in the Superfund program, assuring a reliable health and safety program, providing adequate ADP technical assistance to support the site-specific record-keeping requirements of the Superfund program and improved information systems for EPA and State operations, and ensuring that small purchase and contract and procurement management maintains a level of accountability commensurate with program growth.

1988 Program

In 1988, the Agency is allocating a total of \$2,836,900 supported by 71.1 total workyears for this program, all of which is from the Hazardous Substance Superfund appropriation. These resources provide Regional Superfund administrative support services for contracting and procurement, personnel, health and safety, facilities, and information management activities. Workyear increases reflect the implementation of the Agency's decentralized Superfund contracting strategy. The program is placing special emphasis on efforts to recruit properly qualified personnel and to provide for the intense and specialized training needs of Superfund employees. Increased efforts are also underway in the area of information resources management to efficiently respond to increasing program demands for staff support.

1987 Accomplishments

In 1987, the Agency obligated a total of \$2,115,800 supported by 64.0 total workyears for this program, all of which was from the Hazardous Substance Superfund appropriation. These resources provided a full complement of administrative management services to the Regional Superfund program.

HAZARDOUS SUBSTANCE SUPPORT SERVICES - HEADQUARTERS

1989 Program Request

The Agency requests a total of \$30,121,100 for this program, all of which will be for the Hazardous Substance Superfund Appropriation. This represents an increase of \$3,852,300 from 1988. The increase reflects the additional management and support required for the operation of an expanding Hazardous Substance Superfund program. These resources will fund the Hazardous Substance Response program's share of Headquarters and Agencywide costs. These costs will include: facilities rental, Federal Telecommunications System (FTS), utilities, local telephone service, printing and copying, postage, other building and office services and health and safety training.

1988 Program

In 1988, the Agency is allocating a total of \$26,268,800 for this program, all of which is from the Hazardous Substance Superfund appropriation. These resources fund support costs in Headquarters which include facilities rental, FTS, utilities, local telephone and other related services.

1987 Accomplishments

In 1987, the Agency obligated a total of \$17,633,800 for this program, all of which was from the Hazardous Substance Superfund appropriation. These resources were the Superfund programs' share of the Agency management and support costs needed to operate the Headquarters operations.

HAZARDOUS SUBSTANCE SUPPORT SERVICES - REGIONS

1989 Program Request

The Agency requests a total of \$13,909,000 for this program, all of which will be for the Hazardous Substance Superfund appropriation. This represents an increase of \$2,484,000 from 1988. The increase reflects the additional management and support required for the operation of an expanding Hazardous Substance Response program and includes resources to purchase ESD laboratory equipment. These resources will cover utilities, local telephone service, printing and copying, minicomputer operations, equipment maintenance, and all other support services related to the Superfund program activities in the Regions.

1988 Program

In 1988, the Agency is allocating a total of \$11,425,000 for this program, all of which is from the Hazardous Substance Superfund appropriation. This program supports the costs for utilities, local telephone service, printing and copying, minicomputer operations, equipment maintenance and other support services related to Regional Superfund program activities.

1987 Accomplishments

In 1987, the Agency obligated a total of \$13,696,900 for this program, all of which was from the Hazardous Substance Superfund appropriation. This program funded the operation and maintenance costs in the Regions to operate the Superfund program activities.

HAZARDOUS SUBSTANCE COMPUTER SERVICES

1989 Program Request

The Agency requests a total of \$7,247,700 for this program, all of which will be for the Hazardous Substance Superfund appropriation. This represents an increase of \$2,547,700 from 1988. The increase reflects support for the additional ADP requirements for the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS), the Superfund Contract Laboratory Program Contract Compliance Screening Data Base and the Agency's integrated financial management system. These resources will provide centralized computing services to the Hazardous Substance Superfund Program by the Agency's National Computer Center in Research Triangle Park, North Carolina. These funds pay a portion of the Center's costs for equipment, telecommunications, software leases and maintenance and facility operations.

1988 Program

In 1988, the Agency is allocating \$4,700,000 for this program, all of which is from the Hazardous Substance Superfund appropriation. This amount reflects an increase in the size and use of Hazardous Substance Response program data bases.

1987 Accomplishments

In 1987, the Agency obligated a total of \$3,417,200 for this program, all of which was from the Hazardous Substance Superfund appropriation. The program provided computer services to the Hazardous Substance Superfund Program.

HAZARDOUS SUSTANCES LEGAL SERVICES - HEADQUARTERS

1989 Program Request

In 1989, the Agency requests a total of \$666,000 supported by 9.0 total workyears for this program, all of which will be for the Hazardous Substance Superfund appropriation. This represents no change from 1988.

The Office of General Counsel (OGC) will provide legal advice and consultation on matters related to the implementation of the Superfund program. The OGC will support the Agency's promulgation of rules, establishment of policy, and preparation of guidance documents for program implementation of the reauthorized Superfund program. This includes legal support to financial and administrative operation of Superfund, including Contract Law, Audits, Cooperative Agreements and Freedom of Information Act (FOIA). The OGC handles Superfund litigation in which the Agency is a defendant.

1988 Program

In 1988, the Agency is allocating a total of \$666,000 supported by 9.0 total workyears for this program, all of which is from the Hazardous Substance Superfund appropriation. The Office of General Counsel is providing advice and consultation on financial and administrative matters such as eligible uses of the Fund; legal guidance on program matters such as interpretation of the statute, development of regulations, and changes to the National Contingency Plan; and defense of the Agency in any litigation brought against it concerning CERCLA.

1987 Accomplishments

In 1987, the Agency obligated a total of \$541,800 supported by 6.5 total workyears for this program, all which was from the Hazardous Substance Superfund appropriation. The Office of General Counsel provided legal guidance in program matters such as statutory interpretation, development of response priorities, review of proposed regulatory actions, and defense of the Agency where litigation had been brought against it concerning CERCLA.

HAZARDOUS SUBSTANCES LEGAL SERVICES -REGIONS

1989 Program Request

In 1989, the Agency requests a total of \$1,159,000 supported by 25.9 total workyears for this program, all of which will be for the Hazardous Substance Superfund appropriation. This represents no change from 1988.

The Offices of Regional Counsel will provide legal advice and consultation on matters related to the implementation of the Superfund program to the Regional Administrators, Regional Superfund managers and State agencies. Principal activities will be the defense of the Agency in CERCLA litigation filed against it, participation in formal administrative proceedings, review of state cooperative agreements, activities relating to access by the public to EPA held information, development of the administrative record for selection of cleanup remedies, legal support to program response activities, and the provision of a wide variety of legal counsel and advice to Regional, state and local program officials.

1988 Program

In 1988, the Agency is allocating a total of \$1,159,000 supported by 25.9 total workyears for this program, all of which is from the Hazardous Substance

Superfund appropriation. The Office of Regional Counsel will continue to represent the Agency in Regional defensive litigation concerning Superfund. In addition, the Offices of Regional Counsel will provide legal assistance by reviewing state cooperative agreements for legal sufficiency; advising state agencies regarding the legal requirements of the Superfund program; determining eligible uses of the Fund; and advising on Federal procurement and treatment of confidential information.

1987 Accomplishments

In 1987, the Agency obligated a total of \$858,000 supported by 23.2 total workyears for this program, all of which was from the Hazardous Substance Superfund appropriation. The Offices of Regional Counsel provided EPA and state agencies with legal advice and consultation on matters related to the implementation of CERCLA. Principal activities of the Offices of Regional Counsel included the conduct of defensive litigation, legal review of cooperative agreements with states for site cleanup, and general legal support to the Superfund program in the Regions.

HAZARDOUS SUBSTANCE - OFFICE OF INSPECTOR GENERAL

1989 Program Request

The Agency requests a total of \$6,896,100 supported by 52.8 total workyears for this program, all of which will be for the Hazardous Substance Response Trust Fund appropriation. This represents no change from 1988. These resources will enable the Office of Inspector General to continue its efforts to comply with statutory requirements placed on it by Congress in the Superfund reauthorization. The OIG will continue its program of external audits performed by public accounting firms and other government audit agencies as well as continue operating a limited internal audit program to examine the economy, efficiency, and effectiveness of the Fund's management. The OIG will continue to investigate referrals of suspected criminal activity with high potential for criminal prosecution. Also, investigative resources will enable the Office of Inspector General to identify and eliminate situations which create the opportunity for fraud and abuse.

1988 Program

In 1988, the Agency is allocating a total of \$6,896,100 supported by 52.8 total workyears for this program, all of which is from the Hazardous Substance Response Trust Fund appropriation. These resources enable the Office of Inspector General to begin meeting the statutory requirements placed on it by Congress in the Superfund reauthorization. These annual requirements include (1) auditing payments, obligations, reimbursements or other uses of the funds; (2) examining a sample of agreements with States carrying out response actions; (3) examining remedial investigations and feasibility studies; (4) reviewing the Administrator's status report on all remedial and enforcement actions; and (5) reviewing the Administrator's estimate of the amount of resources necessary for EPA to complete the implementation of its Superfund responsibilities. The OIG will continue its program of external audits performed by public accounting firms and other government audit agencies as well as operate a limited internal audit program to examine the economy, efficiency, and effectiveness of the Fund's management. It will investigate referrals of suspected criminal activity with high potential for criminal prosecution.

1987 Accomplishments

In 1987, the Agency obligated a total of \$4,581,200 supported by 45.7 total workyears for this program, all of which was from the Hazardous Substance Response Trust Fund appropriation. During 1987, the Office of Inspector General issued 107

audit reports on the Fund. Internal audits focused on: progress, costs, and management of States' cleanup actions; Regional monitoring of cooperative agreements with States; and, planning, control, and accuracy of the Superfund management information system. Superfund audits questioned and set aside \$114 million of the approximately \$402 million audited. Investigative efforts resulted in the identification of several major schemes in connection with cleanup actions that are being pursued for both criminal and civil prosecution.

HAZARDOUS SUBSTANCE - OFFICE OF POLICY, PLANNING AND EVALUATION

1989 Program Request

The Agency requests a total of \$3,433,500 supported by 12.8 total workyears for this program, all of which will be for the Hazardous Substance Superfund appropriation. This represents a decrease of \$680,000 and no change in total workyears. The decrease reflects a shift in emphasis from Superfund regulation and analysis to program implementation.

The Office of Policy Analysis (OPA) will concentrate on policy development as the Superfund program works to implement the 1986 amendments and the revised National Contingency Plan (NCP). It will continue its involvement in the development, review, and analysis of policy proposals, including extensive workgroup participation; conduct a comprehensive analysis of Superfund risk data; assist the Regions in implementing risk assessment methodologies and decision-making processes; evaluate the impact of the amendments and the revised NCP on remedy decisions and analyze the role of states and citizens in the Superfund process as an adjunct to Office of Management Systems and Evaluation (OMSE) studies. The Office of Standards and Regulations (OSR) will conduct pilot studies at selected Superfund sites as followup to statistical sampling and data analysis guidance developed in 1987 and 1988. It will begin development of statistical strategies to address and resolve problems related to the Hazard Ranking System (HRS), targeting of preliminary assessments and site investigations and sampling strategies designed to accommodate quick turnaround chemical analysis. It also will adapt its enforcement targeting model for use in enforcement of Superfund site cleanup. Ongoing efforts to develop innovative approaches to implementation of Superfund emergency response programs will continue. OMSE will complete the work begun in 1987 on environmental indicators to measure the effectiveness of EPA's hazardous waste programs in the field, focusing on refining the experts systems and other computer techniques to determine health and environmental priorities. In addition, OMSE will conduct management reviews of several States and Regions to determine how best to oversee the hazardous waste programs. Program evaluation studies will include public involvement in selection of Superfund remedies and State roles in Superfund.

1988 Program

In 1988, the Agency is allocating a total of \$4,113,500 supported by 12.8 total workyears for this program, all of which is from the Hazardous Substance Superfund appropriation.

OPA is continuing to identify and analyze major Superfund implementation policy and regulatory issues. It is promoting a balanced review of all statutory criteria in selection of Superfund remedies toward getting prompt action at sites; greater use of multi-media risk assessment methods for setting priorities and making clean-up decisions; and risk communication and citizen participation. OSR continues to administer EPA's internal review and analysis process and ensures compliance with Executive Orders and legislated requirements. Its Paperwork Reduction Act (PRA) activities have increased in terms of both the amount of information involved and the number and complexity of information issues. Its statistical activities are focusing on Superfund enforcement and implementation of statistically valid Data Quality Objectives as well as development of sampling methods and guidance for deter-

mining when cleanup standards have been met at Superfund sites. Reform initiatives are shifting from identification and preliminary design to implementation or demonstrations. OMSE is developing a series of environmental indicators for the Superfund program based primarily on current data available from remedial and removal actions. Program evaluation activities include a review of EPA's process for adding waste sites to the National Priority List.

1987 Accomplishments

In 1987, the Agency obligated a total of \$3,482,500 supported by 8.0 total workyears for this program, all of which was from the Hazardous Substance Superfund appropriation.

OPA played a major role in: revising the HRS and NCP's; improving risk communication and local citizen acceptance of proposed remedies; and determining the Superfund role in cleanup of area-wide groundwater contamination. OSR ensured compliance of regulatory and policy documents with the Executive Orders and legislated requirements; participated in developing information collection components of Superfund rules; and assisted programs with survey design to assure cost-effective collection of appropriate and high quality data and PRA compliance. OSR developed statistical guidance for sampling and data analysis of Superfund sites and for addressing problems of pollution concentrations below detection levels in monitoring data analysis. It also initiated development of incentive-based approaches to Superfund. OMSE established a Superfund indicators working group of Headquarters, Regional and outside experts to assess the availability of data and develop appropriate indicators. It examined EPA Regional oversight of Potentially Responsible Parties as well as participation in Superfund remedial activities in response to a request from the Office of Solid Waste and Emergency Response.

HAZARDOUS SUBSTANCE - OFFICE OF THE COMPTROLLER

1989 Program Request

The Agency requests a total of \$1,294,000 supported by 11.9 total workyears for this program, all of which will be for the Hazardous Substance Superfund appropriation. This represents an increase of \$150,000 and no change in total workyears from 1988. The increase reflects increased support costs. The program will provide additional financial oversight and tracking of a higher level of program activities resulting from an expanded tax authority. These resources will support: the preparation of the Agency's budget submissions to the Office of Management and Budget (OMB) and Congress; response to Congressional inquiries; analysis and review of major issues concerning workload and pricing models; and analysis of ongoing resource issues related to the operation and management of the Trust Fund.

1988 Program

In 1988, the Agency is allocating a total of \$1,144,000 and 11.9 total workyears for this program, all of which is from the Hazardous Substance Superfund appropriation. These resources support the Agency's ongoing budget activities.

1987 Accomplishments

In 1987, the Agency obligated a total of \$572,200 and 8.9 total workyears for this program, all of which was from the Hazardous Substance Superfund appropriation. The Office of the Comptroller coordinated and prepared the OMB and Congressional budget submissions, responded to Congressional inquiries, and provided

fund oversight activities including ongoing resource reviews for the Superfund program. In addition, the program conducted in-house studies on site-specific charging.

HAZARDOUS SUBSTANCE - OFFICE OF EXTERNAL AFFAIRS

1989 Program Request

The Agency requests a total of \$202,500 supported by 3.0 total workyears for this Office, all of which will be for the Hazardous Substance Superfund appropriation. This represents no change in total dollars and no change in total workyears from 1988.

The Office of External Affairs (OEA) will continue to use existing and develop new communication vehicles to exchange information on acute hazardous, National Priority List (NPL) site activity, emergency planning, chemical release information, and enforcement activity. The Office will also continue to work closely with the Regions and newly established emergency response commissions and local emergency planning committees, and other citizen groups to avoid public misunderstanding and delays in site activity.

The Office of External Affairs (OEA) will assist Federal agencies in addressing and documenting over 3,000 sites in a newly established EPA Federal Agency Hazardous Waste Docket, as well as prepare guidance and technical assistance documents to assess sites in the Docket and, if listed on the NPL, to begin remediation efforts.

1988 Program

In 1988, the Agency is allocating \$202,500 and 3.0 total workyears for this Office, all of which is from the Hazardous Substance Superfund appropriation. In 1988, OEA is supporting the Regions and assisting States and localities with plans to respond to chemical emergencies. The Office is playing a crucial role in exchanging information with local health professionals, public safety officials, local government and State government officials.

The Office is assisting in the development of Section 120 implementation guidance and policies related to Federal sites and is playing an active role in assisting agencies in meeting SARA requirements.

1987 Accomplishments

In 1987, the Agency obligated a total of \$47,800 supported by 0.5 total workyears, all of which was from the Hazardous Substance Superfund appropriation.

The Office coordinated the identification of inactive sites with other Federal agencies; provided a wide variety of communication support, including the development of fact sheets and publications, and worked on information exchange with State and local governments.

HAZARDOUS SUBSTANCE - OFFICE OF RESEARCH AND DEVELOPMENT - LAB SUPPORT

1989 Program Request

The Agency requests a total of \$250,000 for this program, all of which will be for the Hazardous Substance Superfund appropriation. This represents no change in the funding level from 1988. These resources will provide essential support services for Office of Research and Development (ORD) remote laboratories which perform research in the hazardous substances area. These resources will fund such

items as facilities operation and maintenance, utilities and equipment operations, rental costs, and other nonpersonnel support costs that are essential for the operation and maintenance of ORD's remote laboratories.

1988 Program

In 1988, the Agency is allocating a total of \$250,000 for this program, all of which is from the Hazardous Substance Superfund appropriation. These resources provide for the essential services as described above, which are required to operate and maintain ORD's remote laboratories in support of Superfund research.

1987 Accomplishments

In 1987, the Agency obligated \$216,900 for this program, all of which was from the Hazardous Substance Superfund appropriation. This funding provided the essential ORD laboratory support services associated with the Superfund research program.

LUST

ENVIRONMENTAL PROTECTION AGENCY

1989 Budget Estimate

Table of Contents

	<u>Page</u>
<u>LEAKING UNDERGROUND STORAGE TANKS</u>	L-1
RESEARCH AND DEVELOPMENT	
LUST Technical Support.....	L-6
Environmental Engineering and Technology.....	L-7
ABATEMENT & CONTROL	
LUST Guidelines and Implementation.....	L-10
ENFORCEMENT	
LUST Enforcement-Office of Enforcement & Compliance Monitoring.....	L-14
MANAGEMENT & SUPPORT	
Management & Support.....	L-18
Policy & Analysis - Office of Policy, Planning	
and Evaluation.....	L-20
Administrative Management - Office of Administration	
and Resources Management.....	L-21
Legal Services - Office of General Counsel.....	L-21

LEAKING UNDERGROUND STORAGE TANK

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988
--	----------------	----------------------------	-----------------	-----------------------------	-----------------	--

(DOLLARS IN THOUSANDS)

APPROPRIATION

Leaking Underground Storage Tanks Trust	\$20,324.4		\$14,400.0	\$39,400.0	\$50,000.0	\$10,600.0
TOTAL, Leaking Underground Storage Tanks Trust	\$20,324.4		\$14,400.0	\$39,400.0	\$50,000.0	\$10,600.0

PERMANENT WORKYEARS	46.0	85.0	80.0	80.0	85.0	5.0
TOTAL WORKYEARS	27.0	85.0	85.0	85.0	90.0	5.0
OUTLAYS	\$1,330.0	\$17,500.0	\$23,330.2	\$23,330.0	\$31,820.0	\$8,490.0
AUTHORIZATION LEVELS						

The Superfund Amendments and Reauthorization Act (SARA) of 1986, established the Leaking Underground Storage Tanks Trust Fund and authorizes a total of \$500,000,000 to be appropriated to this fund from 1987 to 1991.

LEAKING UNDERGROUND STORAGE TANK (LUST) TRUST FUND

OVERVIEW AND STRATEGY

The goal of Subtitle I of the Solid Waste Disposal Act of 1965, as amended by the Superfund Amendments and Reauthorization Act of 1986, is to assure the timely and appropriate cleanup of leaking underground storage tanks containing petroleum. Owner/operators of facilities with underground storage tanks have primary responsibility for cleanup and, once regulations become effective, must maintain evidence of financial responsibility. The LUST Trust Fund provides supplemental cleanup capabilities for abandoned sites or for sites where the owner/operator is unwilling or unable to undertake the cleanup. The Trust Fund will then be used to enforce or perform necessary cleanups and to recover any costs incurred from the Fund.

The Agency's primary objective is to develop and implement the LUST response program through cooperative agreements with States. States have already identified thousands of sites as being eligible for cleanup. Using Trust Fund resources, States may either enforce responsible party cleanups or directly undertake corrective action. Therefore, increased emphasis in 1989 will be placed on: (1) building and implementing strong State programs; (2) strengthening enforcement; (3) developing and implementing guidelines, and providing scientific support for field response actions; and (4) providing continued management support.

Build and Implement Strong State Programs

The Agency is providing significant increases for State cooperative agreements. Through these agreements, the Agency will target resources to increase the number of cleanups in States with highly developed programs. The Agency will work with these States to expand their enforcement, oversight, and response capabilities. In the few States with new programs, the emphasis will remain on basic program development. The Agency will develop and distribute practical tools for States and local governments, including management systems to track corrective actions, cost recoveries, resource utilization, and compliance activities.

The Agency will implement a program appraisal process designed to assist States in executing their lead responsibilities under cooperative agreements. This appraisal process will identify performance levels among the State and local programs and will provide tools, methods, and training to achieve better State performance. Program appraisal will focus on key areas such as conducting and overseeing cleanups, identifying and pursuing responsible parties, and cost recovery, and will emphasize assisting States to improve in identified areas.

Strengthen Enforcement

In 1989, owner/operators will begin installing leak detection mechanisms on tanks in order to comply with Agency regulations and insurance requirements. The number of leaks reported is expected to increase substantially from the previous year. As a result, there will be an increased State workload in site response, site assessments, enforcement activities, and cleanups. States will provide oversight and technical assistance to owner/operators performing corrective actions at their own sites and will use enforcement actions to compel cleanup by recalcitrant owner/operators. States will use the Trust Fund to perform actual cleanups only as a last resort, and will seek to recover appropriate costs from responsible parties. The Agency will work with the States to develop and implement an effective enforcement program.

Generally, the Agency will respond directly to releases only in cases of substantial threat to human health and the environment and when the State will not and the owner/operator cannot take appropriate action.

Develop Guidance and Provide Technical Support

Because the States are implementing this program, the Agency must clearly define and communicate national priorities. Guidelines will be provided on financial responsibility, corrective action, enforcement, cost recovery, and Fund management systems. The Agency will also provide research and technical support for field response actions including guidance on cleanup technologies and improved rapid site assessment techniques which can be easily used by State and local personnel.

Provide Continued Management Support

As the program develops and the policies and procedures of the Trust Fund are established, the Agency will continue to provide full support in management and administrative services to program operations. Agency support will be provided in personnel, budgeting, financial management, contracts and grants, legal advice and program planning and evaluation to ensure effective and efficient program operations.

ENVIRONMENTAL PROTECTION AGENCY

1989 Budget Estimate

Table of Contents

	<u>Page</u>
<u>LEAKING UNDERGROUND STORAGE TANKS</u>	
RESEARCH AND DEVELOPMENT	
LUST Technical Support.....	L-6
Environmental Engineering and Technology.....	L-7

LEAKING UNDERGROUND STORAGE TANK TRUST FUND
LUST Technical Support

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988
----- (DOLLARS IN THOUSANDS) -----						
PROGRAM -----						
Environmental Engineering & Technology						
Leaking Underground Storage Tanks Trust	\$742.4			\$768.6	\$770.0	\$1.4
TOTAL	\$742.4			\$768.6	\$770.0	\$1.4
TOTAL:						
Leaking Underground Storage Tanks Trust	\$742.4			\$768.6	\$770.0	\$1.4
LUST Technical Support TOTAL	\$742.4			\$768.6	\$770.0	\$1.4
PERMANENT WORKYEARS -----						
Environmental Engineering & Technology	.3	2.0	2.0	2.0	2.0	
TOTAL PERMANENT WORKYEARS	.3	2.0	2.0	2.0	2.0	
TOTAL WORKYEARS -----						
Environmental Engineering & Technology	.3	2.0	2.0	2.0	2.0	
TOTAL WORKYEARS	.3	2.0	2.0	2.0	2.0	

LEAKING UNDERGROUND STORAGE TANK (LUST) TRUST FUND

LUST Technical Support

Budget Request

The Agency requests a total of \$770,000 supported by 2.0 total workyears for 1989, all of which is from the Leaking Underground Storage Tank Trust Fund. This is an increase of \$1,400 from 1988 and no change in total workyears. The increase reflects a general enhancement of inhouse support for this program.

Program Description

This program provides technical support to Leaking Underground Storage Tank (LUST) Trust Fund corrective actions at leaking facilities. This effort includes providing scientific expertise on low cost approaches for assessment of site contamination, monitoring systems for leaked petroleum products, transport and fate of petroleum products in soils and ground water, decision models to assist in making site-specific cleanup decisions, and evaluations of remedial technologies.

Objective 1: Leaking Underground Storage Tank Trust Fund Technical Support. This activity provides technical support to the Office of Underground Storage Tanks (OUST), Regions, States, and local agencies implementing the LUST Trust Fund program. This work contributes to ensuring the selection of the best available site assessment and cleanup procedures by responsible authorities.

ENVIRONMENTAL ENGINEERING AND TECHNOLOGY

1989 Program Request

The Agency requests a total of \$770,000 supported by 2.0 total workyears for this program, all of which will be for the Leaking Underground Storage Tanks Trust Fund. This represents an increase of \$1,400 and no change in total workyears. The increase reflects a general enhancement of inhouse support for this program.

Leaking Underground Storage Tank Trust Fund Technical Support. This program will obtain case study data of past and on-going corrective actions at LUST sites and perform engineering analyses on them. This data plays an important role in our overall ability to provide technical guidance for corrective actions at LUST sites. Field evaluations of selected techniques for cleaning up LUST sites will also continue.

1988 Program

In 1988, the Agency is allocating a total of \$768,600 supported by 2.0 total workyears for this program, all of which is from the LUST Trust Fund. The program is evaluating RCRA and CERCLA cleanup technologies developed for petroleum and hazardous chemical releases for their applicability to petroleum leaks from underground tanks. Demonstrations at LUST sites are also being conducted. Case studies of past and on going corrective actions are being performed and a guidance document on site specific procedures for cost-effective corrective action is being outlined.

1987 Accomplishments

In 1987, the Agency obligated a total of \$742,400 supported by 0.3 total work-years for this program, all of which was from the LUST Trust Fund. A full-scale

field evaluation of a vacuum extraction technology was initiated at a LUST site. Collection and analysis of an initial data set, including soil-gas, soil and ground-water samples, was completed. Results indicated significant reductions in soil contamination. A project was initiated to identify the mechanisms which control the migration, retention, transformation and remobilization of gasoline released from underground storage tanks.

ENVIRONMENTAL PROTECTION AGENCY

1989 Budget Estimate

Table of Contents

	<u>Page</u>
<u>LEAKING UNDERGROUND STORAGE TANKS</u>	
ABATEMENT & CONTROL	
LUST Guidelines and Implementation.....	L-10

**LEAKING UNDERGROUND STORAGE TANK TRUST FUND
LUST Guidelines & Implementation**

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988
----- (DOLLARS IN THOUSANDS) -----						
PROGRAM -----						
Guidelines & Implementation - LUST Leaking Underground Storage Tanks Trust	\$18,781.8		\$14,400.0	\$35,852.7	\$46,400.0	\$10,547.3
TOTAL	\$18,781.8		\$14,400.0	\$35,852.7	\$46,400.0	\$10,547.3
 TOTAL: Leaking Underground Storage Tanks Trust	\$18,781.8		\$14,400.0	\$35,852.7	\$46,400.0	\$10,547.3
LUST Guidelines & Implementation	TOTAL \$18,781.8		\$14,400.0	\$35,852.7	\$46,400.0	\$10,547.3
 PERMANENT WORKYEARS -----						
Guidelines & Implementation - LUST	17.7	56.0	56.0	55.5	61.0	5.5
TOTAL PERMANENT WORKYEARS	17.7	56.0	56.0	55.5	61.0	5.5
 TOTAL WORKYEARS						
Guidelines & Implementation - LUST	20.0	56.0	56.0	56.0	61.0	5.0
TOTAL WORKYEARS	20.0	56.0	56.0	56.0	61.0	5.0

LEAKING UNDERGROUND STORAGE TANK (LUST) TRUST FUND

LUST Guidelines and Implementation

Budget Request

The Agency requests a total of \$46,400,000 supported by 61.0 total workyears for 1989 for the Leaking Underground Storage Tank Trust Fund appropriation. This is an increase of \$10,547,300 and 5.0 total workyears from 1988.

Program Description

LUST Guidelines and Implementation -- The goal of this program is to ensure rapid and effective response to releases from underground petroleum tanks, as authorized by amendments to Subtitle I of the Solid Waste Disposal Act contained in the Superfund Amendments and Reauthorization Act of 1986. The Agency will develop policies and guidelines for Fund administration, develop cooperative agreements with States to implement the response program, provide technical assistance and oversight for State programs, and undertake a limited number of direct response and enforcement actions.

LUST GUIDELINES AND IMPLEMENTATION

1989 Program Request

The Agency requests a total of \$46,400,000 supported by 61.0 total workyears for this program, all of which will be for the Leaking Underground Storage Tank Trust Fund appropriation. This represents an increase of \$10,547,300 and 5.0 total workyears from 1988. The increases will provide additional support for and expanded funding of State cooperative agreements.

By 1989, the Agency's UST prevention regulations will be in place. Because this program will be implemented at the State and local level, the Agency's role will be to continue to develop and issue policies, guidance, and strategies to promote State response programs. Policies and procedures implementing and ensuring compliance with new Subtitle I regulatory requirements will be developed, including further information on financial responsibility and State cost-share requirements. The Agency will also develop guidelines for Fund administration and State program evaluation. Additional guidelines will address site priorities, enforcement, corrective action, and Federal oversight. The Agency will identify key implementation issues and develop needed technical assistance and training to address these issues. Pilots for implementing the Agency's cost recovery policy will be monitored and evaluated.

The regulation requiring leak detection mechanisms on new and existing tanks is expected to generate a substantially increased workload as owner/operators report suspected releases. This requirement is being phased in and is expected to affect at least 350,000 tanks in 1989. States must be prepared to respond to the report of a release, to assist and oversee the owner/operator in site assessment and corrective action, or to undertake corrective action themselves when required.

State-wide generic cooperative agreements will continue to be the vehicle for implementing the expanded response program. The Agency will allocate \$40,500,000 of the request for State cooperative agreements. The statutory provisions for a 10% cost-share on Trust Fund resources expended for corrective action will become effective in 1989. In addition to entering into cooperative agreements with States that already have response programs, a portion of the Fund will be targeted to the other States to assist them in initiating a response program.

Emphasis will be placed on addressing human health and environmental needs by targeting resources to States with the greatest readiness to proceed with a response program. States will oversee site assessments and cleanups by owner/operators and will use administrative orders to enforce cleanup by unwilling parties. Where necessary, States will use the Trust Fund to clean up releases of petroleum and seek recovery of costs. States must also be prepared to take emergency action in life-threatening cases. Regions will provide technical assistance, program review, and evaluation for State response programs.

1988 Program

In 1988, the Agency is allocating a total of \$35,852,700 supported by 56.0 total workyears, all of which is from the Leaking Underground Storage Tank Trust Fund appropriation.

The Agency is developing and issuing policies, guidance, and strategies for promoting State program development. Delegations of authority have been developed and issued to the Regions for signing cooperative agreements, issuing corrective action orders through Section 9003(h)(4) of Subtitle I of the Solid Waste Disposal Act as amended, gaining access and conducting inspections through Section 9005, and other administrative enforcement procedures. Policies, guidance and strategies are being developed to implement these delegated authorities, and other authorities necessary to administer and evaluate the program. Guidance on the assessment of State capabilities and authorities will be developed. The Agency is developing a policy statement and strategy for cost recovery under the LUST Trust Fund program. Policies and procedures for Federal responses in emergency cases will be made final.

The Agency is overseeing development and implementation of State response programs, providing technical assistance to States that need to develop cooperative agreements to enter the program, and preparing for States to undertake emergency responses to petroleum releases from underground storage tanks. Agency oversight of cleanup under cooperative agreements will examine State programs, procedures, and mechanisms for addressing releases, including appropriate program and fiscal systems.

1987 Accomplishments

In 1987, the Agency obligated a total of \$18,781,800 supported by 20 total workyears from the Leaking Underground Storage Tank Trust Fund appropriation.

The Agency established guidelines and procedures for negotiating cooperative agreements. Forty-five cooperative agreements, the vehicle for implementation of the leaking underground storage tank response program, have been signed and include 40 States, 3 territories, and 2 site-specific agreements. The generic agreements with 40 States and 3 territories provided for basic program development including a priority system for addressing sites, enforcement procedures, corrective action, cost recovery, Federal oversight, public participation, quality assurance, and State work plans. Two site specific agreements enabled actual corrective action work to begin immediately at sites that posed an imminent threat to human health.

ENVIRONMENTAL PROTECTION AGENCY

1989 Budget Estimate

Table of Contents

	<u>Page</u>
<u>LEAKING UNDERGROUND STORAGE TANKS</u>	
ENFORCEMENT	
LUST Enforcement-Office of Enforcement & Compliance Monitoring.....	L-14

LEAKING UNDERGROUND STORAGE TANK TRUST FUND
LUST Enforcement

		ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988
----- (DOLLARS IN THOUSANDS) -----							
PROGRAM -----							
LUST - Legal Enforcement							
Leaking Underground Storage Tanks Trust		\$77.4			\$264.8	\$278.0	\$13.2
	TOTAL	\$77.4			\$264.8	\$278.0	\$13.2
TOTAL:							
Leaking Underground Storage Tanks Trust		\$77.4			\$264.8	\$278.0	\$13.2
LUST Enforcement	TOTAL	\$77.4			\$264.8	\$278.0	\$13.2
PERMANENT WORKYEARS -----							
LUST - Legal Enforcement		1.5	6.0	6.0	4.5	5.6	1.1
TOTAL PERMANENT WORKYEARS		1.5	6.0	6.0	4.5	5.6	1.1
TOTAL WORKYEARS -----							
LUST - Legal Enforcement		1.5	6.0	6.0	5.6	5.6	
TOTAL WORKYEARS		1.5	6.0	6.0	5.6	5.6	

LEAKING UNDERGROUND STORAGE TANK (LUST) TRUST FUND

LUST Enforcement

Budget Request

The Agency requests a total of \$278,000 supported by 5.6 total workyears for 1989, an increase of \$13,200 and no change in total workyears from 1988. All of the request will be for the Leaking Underground Storage Tank Trust Fund (LUST) appropriation.

Program Description

This program provides for Regional legal enforcement actions taken to support implementation of the LUST Trust Fund established by the Superfund Amendment and Reauthorization Act (SARA) of 1986. The LUST Trust Fund may be used to enforce corrective action requirements by owner/operators of leaking underground storage tanks and also to conduct response activities.

ENFORCEMENT - OFFICE OF ENFORCEMENT AND COMPLIANCE MONITORING

1989 Program Request

The Agency requests a total of \$278,000 supported by 5.6 total workyears, all of which will be for the LUST Trust Fund appropriation. This represents an increase of \$13,200 from 1988 to support additional workyear costs.

The primary workload for Regional legal enforcement staff in 1989 will shift from intense involvement in State cooperative agreement negotiations to a greater emphasis, in those States with signed agreements, on review of State program accomplishments and on providing technical assistance for State enforcement activities. Emphasis will also be placed on working with State Attorney Generals to determine the adequacy of State statutory and regulatory authorities to implement LUST response programs. Coordination with States and Headquarters will be required to ensure uniform implementation, particularly regarding issues of financial viability of owner/operators, cost recovery, and use of enforcement actions.

1988 Program

In 1988 the Agency is allocating a total of \$264,800 supported by 5.6 total workyears for this program, all of which is from the LUST Trust Fund appropriation.

Legal efforts are concentrated primarily on developing and negotiating cooperative agreements with the States. Owner/operators generally provide the lead in response actions for releases from leaking tanks. States may also take response and enforcement actions, governed by the cooperative agreements negotiated with EPA. The Federal program role is limited to conducting responses in those few cases where the release constitutes a major public health emergency and no State authority or owner/operator is available to respond in a timely manner. Regional legal staff will pursue cost recovery where Regions have used the LUST Trust Fund for response because of the emergency nature of the public health threat.

1987 Accomplishments

In 1987, the Agency obligated a total of \$77,400 supported by 1.5 total workyears for this program. Initial efforts focused on assisting the States in understanding the new legislation and in developing and negotiating Trust Fund cooperative agreements.

ENVIRONMENTAL PROTECTION AGENCY

1989 Budget Estimate

Table of Contents

	<u>Page</u>
<u>LEAKING UNDERGROUND STORAGE TANKS</u>	
MANAGEMENT & SUPPORT	
Management & Support.....	L-18
Policy & Analysis - Office of Policy, Planning and Evaluation.....	L-20
Administrative Management - Office of Administration and Resources Management.....	L-21
Legal Services - Office of General Counsel.....	L-21

LEAKING UNDERGROUND STORAGE TANK TRUST FUND
LUST Management & Support

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988
----- (DOLLARS IN THOUSANDS) -----						
PROGRAM -----						
Policy & Analysis - Office of Policy, Planning & Evaluation Leaking Underground Storage Tanks Trust	\$262.7			\$309.3	\$310.0	\$.7
TOTAL	\$262.7			\$309.3	\$310.0	\$.7
Administrative Management - Office of Administration & Resources Management Leaking Underground Storage Tanks Trust	\$432.2			\$1,925.3	\$1,962.0	\$36.7
TOTAL	\$432.2			\$1,925.3	\$1,962.0	\$36.7
Legal Services - Office of General Counsel Leaking Underground Storage Tanks Trust	\$27.9			\$279.3	\$280.0	\$.7
TOTAL	\$27.9			\$279.3	\$280.0	\$.7
TOTAL: Leaking Underground Storage Tanks Trust	\$722.8			\$2,513.9	\$2,552.0	\$38.1
LUST Management & Support	TOTAL	\$722.8		\$2,513.9	\$2,552.0	\$38.1

LEAKING UNDERGROUND STORAGE TANK TRUST FUND
LUST Management & Support

	ACTUAL 1987	BUDGET ESTIMATE 1988	ENACTED 1988	CURRENT ESTIMATE 1988	REQUEST 1989	INCREASE + DECREASE - 1989 VS 1988
----- (DOLLARS IN THOUSANDS) -----						
PERMANENT WORKYEARS -----						
Policy & Analysis - Office of Policy, Planning & Evaluation	.2	1.0	1.0	1.0	1.0	
Administrative Management - Office of Administration & Resources Management	4.0	15.0	15.0	14.0	15.0	1.0
Legal Services - Office of General Counsel	.2	5.0	5.0	3.9	5.4	1.5
TOTAL PERMANENT WORKYEARS	4.4	21.0	21.0	18.9	21.4	2.5
TOTAL WORKYEARS -----						
Policy & Analysis - Office of Policy, Planning & Evaluation	.2	1.0	1.0	1.0	1.0	
Administrative Management - Office of Administration & Resources Management	4.9	15.0	15.0	15.0	15.0	
Legal Services - Office of General Counsel	.4	5.0	5.0	5.4	5.4	
TOTAL WORKYEARS	5.5	21.0	21.4	21.4	21.4	

LEAKING UNDERGROUND STORAGE TANK (LUST) TRUST FUND

LUST Management and Support

Budget Request

The Agency requests a total of \$2,552,000 supported by 21.4 total workyears for 1989, all of which will be for the Leaking Underground Storage Tank Trust Fund appropriation. This represents an increase of \$38,100 and no change in total workyears. This increase reflects additional operating costs.

Program Description

Policy and Analysis - Office of Policy, Planning and Evaluation -- This component provides the LUST program with guidance on strategic issues, including establishing priority cleanup sites, creating mechanisms to encourage State participation, establishing criteria for cleanup levels and technologies, and program evaluation.

Administrative Management - Office of Administration and Resource Management -- This component provides financial management procedures, support for developing cooperative agreements, and administrative and financial services to support the Leaking Underground Storage Tank (LUST) program. Support services such as rent, utilities and telecommunications are also provided.

Legal Services - Office of General Counsel -- This component provides legal support for the development of guidelines and policies for administration of the LUST program and defense of the Agency in legal actions taken against the program.

POLICY AND ANALYSIS - OFFICE OF POLICY, PLANNING AND EVALUATION

1989 Program Request

The Agency requests a total of \$310,000 supported by 1.0 total workyears for this program, all of which will be for the Leaking Underground Storage Tank Trust Fund appropriation. This represents an increase of \$700 and no change in total workyears. The increase will support increased operating costs.

The Office of Policy Analysis (OPA) will continue work started in 1988 on LUST program development. The focus will switch from the development of analytical tools to testing and validation in the field, with the goal of ultimate delivery to users. Also, the Office of Underground Storage Tanks will begin extensive analysis of control strategies for tanks deferred from the current technical standards and financial responsibility requirements. OPA will play an active role in the options development and regulatory impact analysis processes as well as conduct independent and joint studies, as necessary.

1988 Program

In 1988, the Agency is allocating a total of \$309,300 supported by 1.0 total workyear for this program, all of which is from the Leaking Underground Storage Tank Trust Fund appropriation.

OPA is continuing to identify and analyze major issues associated with the implementation of the LUST Trust Fund. With the overall policy framework established in 1987, the emphasis is shifting to program implementation in 1988.

1987 Accomplishments

In 1987, the Agency obligated a total of \$262,700 supported by .2 total workyears for this program, all of which was from the Leaking Underground Storage Tank Trust Fund appropriation.

OPA aided the Program Office in developing strategies for Trust Fund financed cleanups, what kinds of incentives could be created to encourage States to implement the program more effectively, what the criteria for State program approval should be, and the process for determining cleanup technologies and levels.

ADMINISTRATIVE MANAGEMENT - OFFICE OF ADMINISTRATION AND RESOURCES MANAGEMENT

1989 Program Request

The Agency requests a total of \$1,962,000 supported by 15.0 total workyears for this program, all of which will be for the Leaking Underground Storage Tank Trust Fund appropriation. This represents an increase of \$36,700 from 1988 for additional support costs with no change in workyears. These resources will be used to provide administrative services, such as contract support, personnel support, and fiscal analysis, as well as basic financial services such as processing payroll, vouchers and accurate financial reports. Support costs such as rent, utilities, security, mail operation and automated data processing (ADP) technical assistance and services for the LUST program will also be provided.

1988 Program

In 1988, the Agency is allocating a total of \$1,925,300 supported by 15.0 total workyears for this program, all of which is from the Leaking Underground Storage Tank Trust Fund appropriation. These resources are used to provide support services, financial services and administrative services to the LUST program. The Agency will emphasize the award and monitoring of cooperative agreements with the States in accordance with policies established in 1987.

1987 Accomplishments

In 1987, the Agency obligated a total of \$432,200 supported by 4.9 total workyears, all of which was from the Leaking Underground Storage Tank Trust Fund appropriation. These resources provided support services, financial services and administrative services to the LUST program. The Agency established financial and administrative structures to provide controls over the LUST Trust Fund and began developing policies and procedures for cost recovery actions against responsible parties.

LEGAL SERVICE - OFFICE OF GENERAL COUNSEL

1989 Program Request

The Agency requests a total of \$280,000 supported by 5.4 total workyears for this program, all of which will be for the Leaking Underground Storage Tank Trust Fund appropriation. This represents an increase of \$700 and no change in total workyears from 1988. The increase will provide for additional support costs.

The resources will provide legal support for the development of guidelines and policies for administration of the Fund, assisting the delegation of authority to the States, supporting cooperative agreements between EPA and States, providing advice and interpretations, and defense of the Agency in legal actions taken against it regarding the Trust Fund.

1988 Program

In 1988, the Agency is allocating a total of \$279,300 supported by 5.4 total workyears for this program, all of which is from the Leaking Underground Storage Tank Trust Fund appropriation.

The request will provide legal support for the development of guidelines and policies for administration of the fund; assist the delegation of authority to the States; support cooperative agreements between EPA and States; and provide advice, interpretations, and defense of the Agency in legal actions taken against it regarding the Trust Fund.

1987 Accomplishments

In 1987, the Agency obligated a total of \$27,900 supported by .4 total workyears all of which was from the Leaking Underground Storage Tank Trust Fund appropriation. Legal support was provided to the development of guidelines and policies through advice, counsel and interpretations.

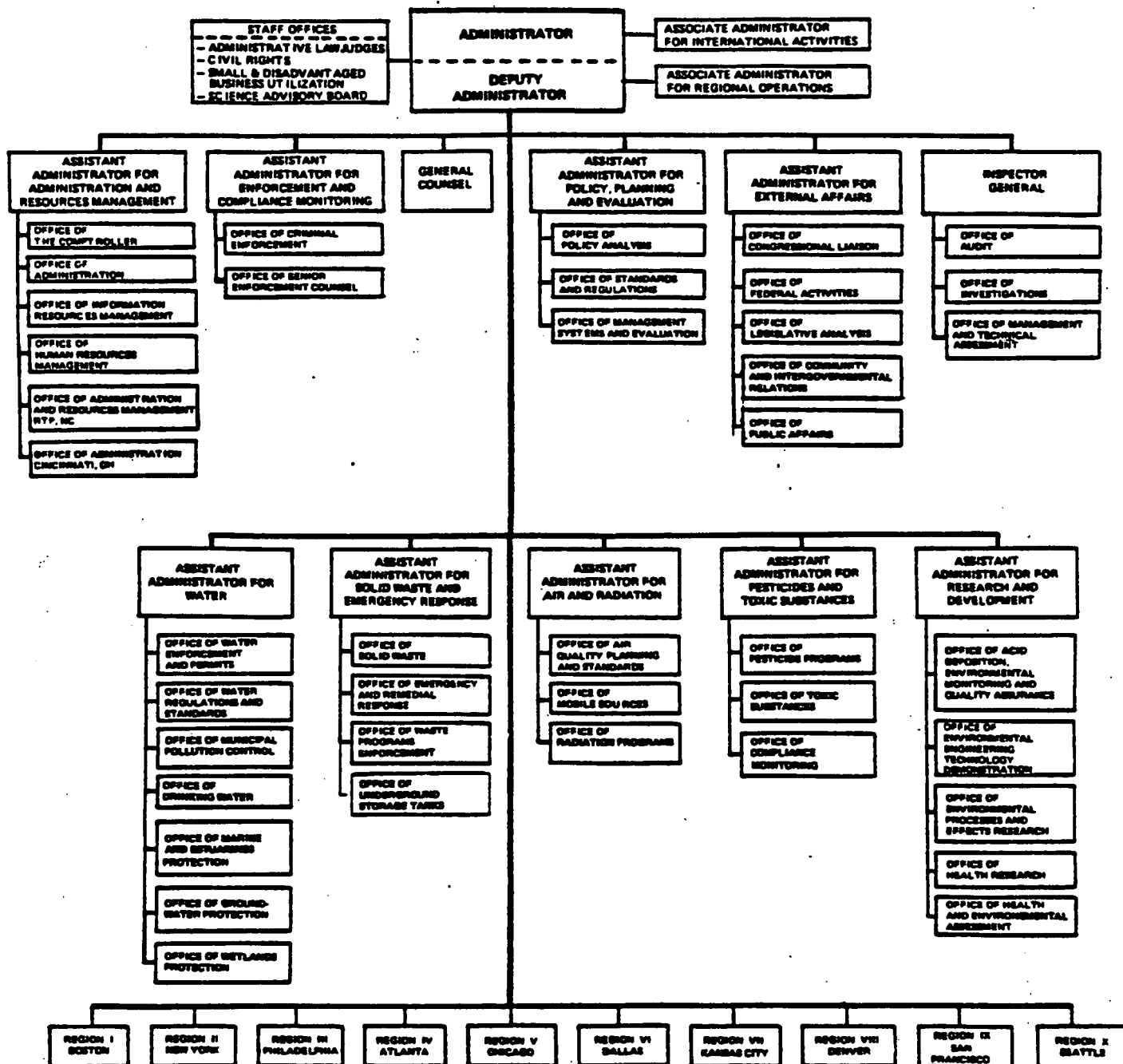
ENVIRONMENTAL PROTECTION AGENCY

SPECIAL ANALYSES

Table of Contents

	<u>Page</u>
EPA Organization Chart.....	SA-2
EPA Regional Offices - Locations.....	SA-3
Summary of Resources, By Appropriation.....	SA-4
Summary of Resources, By Media.....	SA-7
Object Classification - By Appropriation.....	SA-12
Summary of State Grant Resources.....	SA-15
History of State Grant Budget Authority (1971 - 1989).....	SA-16
Permanent Positions by Grade (Salaries and Expenses).....	SA-20
Permanent Positions by Grade (Superfund).....	SA-22
Permanent Positions by Grade (LUST Trust Fund).....	SA-24
Permanent Positions by Grade (Reimbursable).....	SA-25
Average Grade and Salary.....	SA-26

U.S. ENVIRONMENTAL PROTECTION AGENCY



ENVIRONMENTAL PROTECTION AGENCY

REGIONS
Locations and States

Region I Headquarters, Boston, Massachusetts
Connecticut, Maine, Massachusetts
New Hampshire, Rhode Island, Vermont

Region II Headquarters, New York, New York
New Jersey, New York, Puerto Rico,
Virgin Islands

Region III Headquarters, Philadelphia, Pennsylvania
Delaware, District of Columbia, Maryland,
Pennsylvania, Virginia, West Virginia

Region IV Headquarters, Atlanta, Georgia
Alabama, Florida, Georgia, Kentucky,
Mississippi, North Carolina, South
Carolina, Tennessee

Region V Headquarters, Chicago, Illinois
Illinois, Indiana, Michigan
Minnesota, Ohio, Wisconsin

Region VI Headquarters, Dallas, Texas
Arkansas, Louisiana, New Mexico
Oklahoma, Texas

Region VII Headquarters, Kansas City, Kansas
Iowa, Kansas, Missouri, Nebraska

Region VIII Headquarters, Denver, Colorado
Colorado, Montana, North Dakota,
South Dakota, Utah, Wyoming

Region IX Headquarters, San Francisco, California
Arizona, California, Hawaii, Nevada,
American Samoa, Guam, Trust Territories
of Pacific Islands, Northern Mariana
Islands

Region X Headquarters, Seattle, Washington
Alaska, Idaho, Oregon, Washington

ENVIRONMENTAL PROTECTION AGENCY

Summary of Resources

By Appropriation
(dollars in thousands)

	Actual 1987	Budget Estimate 1988	Enacted 1988	Current Estimate 1988	Request 1989	Increase/ decrease 1989 Req. vs Current 1988
Salaries and Expenses						
Budget Authority.....	\$ 727,107.0	\$ 772,955.0	\$ 765,000.0	\$ 765,000.0	\$ 800,000.0	\$ 35,000.0
Obligations.....	723,315.4	772,955.0	765,000.0	765,000.0	800,000.0	35,000.0
Outlays.....	674,379.0	754,434.0	748,859.0	748,859.0	791,500.0	42,641.0
Permanent Workyears.....	10,841.0	10,603.0	10,967.0	10,967.0	10,969.0	2.0
Total Workyears.....	11,176.0	11,459.7	11,664.0	11,664.0	11,668.0	4.0
Research and Development						
Budget Authority.....	\$ 197,500.0	\$ 187,600.0	\$ 186,350.0	\$ 186,350.0	\$ 197,000.0	\$ 10,650.0
Obligations.....	201,486.7	187,902.0	184,771.0	184,771.0	196,756.0	11,985.0
Outlays.....	206,239.1	197,981.0	195,328.0	195,328.0	170,506.0	(24,822.0)
Abatement, Control, and Compliance						
Budget Authority.....	\$ 609,685.0	\$ 515,085.3	\$ 606,192.3	\$ 606,192.3	\$ 624,000.0	\$ 17,807.7
Obligations.....	612,828.6	516,611.0	607,556.0	607,556.0	624,192.0	16,636.0
Outlays.....	576,419.5	582,592.0	593,927.3	593,927.3	631,631.0	37,703.7
Buildings and Facilities						
Budget Authority.....	\$ 7,500.0	\$ 6,000.0	\$ 23,500.0	\$ 23,500.0	\$ 8,000.0	\$ (15,500.0)
Obligations.....	13,261.7	5,880.0	26,218.0	26,218.0	8,364.0	(17,854.0)
Outlays.....	5,059.9	7,733.0	9,995.0	9,995.0	18,110.0	8,115.0
SUBTOTAL, OPERATING PROGRAMS						
Budget Authority.....	\$1,541,792.0	\$1,481,640.3	\$1,581,042.3	\$1,581,042.3	\$1,629,000.0	\$ 47,957.7
Obligations.....	1,550,892.4	1,483,348.0	1,583,545.0	1,583,545.0	1,629,312.0	45,767.0
Outlays.....	1,462,097.5	1,542,740.0	1,548,109.3	1,548,109.3	1,611,747.0	63,637.7
Permanent Workyears.....	10,841.0	10,603.0	10,967.0	10,967.0	10,969.0	2.0
Total Workyears.....	11,176.0	11,459.7	11,664.0	11,664.0	11,668.0	4.0

	Actual 1987	Budget Estimate 1988	Enacted 1988	Current Estimate 1988	Request 1989	Increase/ decrease 1989 Req. vs Current 1988
Hazardous Substance Superfund						
Budget Authority.....	\$1,411,300.0	\$1,198,422.0	\$1,128,000.0	\$1,499,499.8a	\$1,600,000.0	\$ 100,500.2
Obligations.....	1,050,748.9	1,578,600.0	1,499,500.0	1,499,500.0	1,700,000.0	200,500.0
Outlays.....	541,305.0	875,000.0	778,000.0	778,000.0	1,205,000.0	427,000.0
Permanent Workyears.....	2,078.0	2,716.0	2,156.0	2,156.0	2,219.0	63.0
Total Workyears.....	2,174.0	2,716.0	2,673.0	2,633.0	2,750.0	117.0
LUST Trust Fund						
Budget Authority.....	\$ 50,000.0b	\$ 0.0	\$ 14,400.0	\$ 39,400.0b	\$ 50,000.0	\$ 10,600.0
Obligations.....	20,324.4	25,000.0	44,076.0	44,076.0	50,000.0	5,924.0
Outlays.....	1,330.0	17,500.0	23,330.2	23,330.0	31,820.0	8,490.0
Permanent Workyears.....	46.0	85.0	80.0	80.0	85.0	5.0
Total Workyears.....	27.0	85.0	85.0	85.0	90.0	5.0
Construction Grants						
Budget Authority.....	\$2,361,000.0	\$2,000,000.0	\$2,304,000.0	\$2,304,000.0	\$1,500,000.0	\$ (804,000.0)
Obligations.....	2,168,797.0	1,999,999.0	2,604,000.0	2,604,000.0	2,100,000.0	(504,000.0)
Outlays.....	2,920,339.0	2,320,000.0	2,566,000.0	2,566,000.0	2,377,500.0	(188,500.0)
Scientific Activities Overseas						
Obligations.....	\$ 25.5	\$ 0.0	\$ 1,007.0	\$ 1,007.0	\$ 1,007.0	\$ 0.0
Outlays.....	163.0	275.0	275.0	275.0	275.0	0.0
Operations, Research and Facilities						
Obligations.....	\$ 948.0	\$ 500.0	\$ 151.0	\$ 151.0	\$ 0.0	\$ (151.0)
Outlays.....	89.0	500.0	1,050.0	1,050.0	250.0	(800.0)

	Actual 1987	Budget Estimate 1988	Enacted 1988	Current Estimate 1988	Request 1989	Increase/ decrease 1989 Req. vs Current 1988
Revolving Fund						
Obligations.....	\$ 997.0	\$ 1,000.0	\$ 1,000.0	\$ 1,000.0	\$ 1,000.0	\$ 0.0
Outlays.....	(422.0)	(500.0)	(500.0)	(500.0)	(500.0)	0.0
Misc. Contrib. Funds						
Obligations.....	\$ 4.0	\$ 10.0	\$ 45.0	\$ 45.0	\$ 30.0	\$ (15.0)
Outlays.....	23.0	50.0	50.0	50.0	10.0	(40.0)
Reimbursements - S&E						
Obligations.....	\$ 25,508.0	\$ 20,000.0	\$ 20,000.0	\$ 20,000.0	\$ 20,000.0	\$ 0.0
Permanent Workyears.....	60.0	56.0	62.0	62.0	58.0	(4.0)
Total Workyears.....	65.0	62.0	66.0	66.0	62.0	(4.0)
Reimbursements-Superfund						
Obligations.....	\$ 13,074.0	\$ 52,000.0	\$ 30,000.0	\$ 30,000.0	\$ 30,000.0	\$ 0.0
TOTAL, EPA						
Budget Authority.....	\$5,364,092.0	\$4,680,062.3	\$5,027,442.3	\$5,423,942.1	\$4,779,000.0	\$ (664,942.1)
Obligations.....	4,831,319.2	5,160,457.0	5,783,324.0	5,783,324.0	5,531,349.0	(251,975.0)
Outlays.....	4,924,924.5	4,755,565.0	4,916,314.5	4,916,314.3	5,226,102.0	309,787.7
Permanent Workyears.....	13,025.0	13,460.0	13,265.0	13,265.0	13,331.0	66.0
Total Workyears.....	13,442.0	14,322.7	14,488.0	14,448.0	14,570.0	122.0

a/ Includes planned prior year funds.

b/ Of the \$50,000,000 appropriated for FY 1987,
the Agency planned to obligate \$25,000,000 in 1987
and to carry over \$25,000,000 into FY 1988.

ENVIRONMENTAL PROTECTION AGENCY

Summary of Resources By Media (dollars in thousands)

	Actual 1987	Budget Estimate 1988	Enacted 1988	Current Estimate 1988	Request 1989	Increase/ decrease 1989 Req. vs Current 1988
Air						
Budget Authority.....	\$ 247,252.9	\$ 247,163.3	\$ 246,278.4	\$ 245,589.5	\$ 256,666.9	\$ 11,077.4
Obligations.....	246,521.6	246,958.8	244,081.8	243,399.0	255,319.0	11,920.0
Outlays.....	250,774.1	238,619.8	220,690.7	220,023.1	232,208.4	12,185.3
Permanent Workyears.....	1,676.2	1,633.9	1,637.4	1,663.7	1,643.2	(20.5)
Total Workyears.....	1,706.9	1,765.7	1,747.9	1,747.9	1,747.9	0.0
Water Quality						
Budget Authority.....	\$ 266,925.1	\$ 236,778.3	\$ 258,874.8	\$ 261,005.5	\$ 265,784.6	\$ 4,779.1
Obligations.....	270,955.7	235,563.5	256,453.3	258,563.0	263,301.0	4,738.0
Outlays.....	239,387.9	254,739.1	264,975.2	267,156.2	272,328.3	5,172.1
Permanent Workyears.....	1,987.4	1,965.8	2,121.0	2,098.5	2,101.7	3.2
Total Workyears.....	2,112.4	2,124.6	2,245.3	2,245.3	2,235.3	(10.0)
Drinking Water						
Budget Authority.....	\$ 102,660.3	\$ 114,850.1	\$ 108,103.3	\$ 107,583.3	\$ 103,480.5	\$ (4,102.8)
Obligations.....	102,531.5	113,661.6	106,984.6	106,470.0	102,525.0	(3,945.0)
Outlays.....	97,284.1	114,490.2	95,690.0	95,229.7	98,666.4	3,436.7)
Permanent Workyears.....	679.2	696.6	699.7	695.3	700.9	5.6
Total Workyears.....	691.6	752.7	746.1	746.1	746.1	0.0
Hazardous Waste						
Budget Authority.....	\$ 255,544.3	\$ 254,305.4	\$ 262,826.2	\$ 259,105.1	\$ 262,427.6	\$ 3,322.5
Obligations.....	256,401.0	254,838.6	262,293.5	258,580.0	261,559.0	2,979.0
Outlays.....	251,921.7	241,089.1	246,907.9	243,412.2	251,030.4	7,618.2
Permanent Workyears.....	1,360.9	1,374.1	1,415.8	1,386.2	1,402.9	16.7
Total Workyears.....	1,413.2	1,485.4	1,492.9	1,492.9	1,492.9	0.0

	Actual 1987	Budget Estimate 1988	Enacted 1988	Current Estimate 1988	Request 1989	Increase/ decrease 1989 Req. vs Current 1988
Pesticides						
Budget Authority.....	\$ 71,526.3	\$ 75,846.9	\$ 84,309.2	\$ 84,231.8	\$ 137,420.0	\$ 53,188.2
Obligations.....	71,278.0	75,592.3	84,026.2	83,949.0	136,531.0	52,582.0
Outlays.....	69,183.1	76,403.7	76,802.7	76,732.2	115,605.0	38,872.8
Permanent Workyears.....	789.0	757.1	777.6	805.5	782.1	(23.4)
Total Workyears.....	796.9	818.2	831.7	831.7	831.7	0.0
Radiation						
Budget Authority.....	\$ 15,561.3	\$ 14,046.7	\$ 18,148.9	\$ 20,438.1	\$ 20,799.9	\$ 361.8
Obligations.....	15,413.2	13,884.5	17,939.3	20,247.0	20,607.0	360.0
Outlays.....	18,200.5	17,511.4	15,591.6	17,558.2	18,960.8	1,402.6
Permanent Workyears.....	162.9	153.7	168.9	174.4	172.2	(2.2)
Total Workyears.....	177.3	166.7	183.2	183.2	183.2	0.0
Noise						
Budget Authority.....	\$ 0.0	\$ 0.0	\$ 0.0	\$ 0.0	\$ 0.0	\$ 0.0
Obligations.....	0.0	0.0	0.0	0.0	0.0	0.0
Outlays.....	50.1	223.7	227.7	227.7	148.6	(79.1)
Interdisciplinary						
Budget Authority.....	\$ 55,642.5	\$ 56,776.6	\$ 60,699.3	\$ 61,668.0	\$ 69,825.4	\$ 8,157.4
Obligations.....	56,187.5	56,482.9	60,385.3	61,349.0	69,476.0	8,127.0
Outlays.....	61,122.5	61,209.7	60,288.2	61,250.3	61,890.5	640.2
Permanent Workyears.....	553.7	556.7	573.6	587.8	585.7	(2.1)
Total Workyears.....	583.5	602.2	623.5	623.5	623.5	0.0
Toxic Substances						
Budget Authority.....	\$ 138,787.5	\$ 86,096.2	\$ 130,444.1	\$ 130,225.7	\$ 95,007.6	\$ (35,218.1)
Obligations.....	135,520.7	90,459.9	137,055.5	136,826.0	101,633.0	(35,193.0)
Outlays.....	127,369.5	119,591.9	151,367.1	151,113.7	131,748.8	(19,364.9)
Permanent Workyears.....	809.3	777.2	820.3	845.6	821.6	(24.0)
Total Workyears.....	815.8	839.6	873.6	873.6	873.6	0.0

	Actual 1987	Budget Estimate 1988	Enacted 1988	Current Estimate 1988	Request 1989	Increase/ decrease 1989 Req. vs Current 1988
Energy						
Budget Authority.....	\$ 58,157.3	\$ 55,718.8	\$ 55,783.1	\$ 55,620.3	\$ 55,457.5	\$ (162.8)
Obligations.....	62,636.1	55,967.9	56,032.5	55,869.0	55,867.0	(2.0)
Outlays.....	55,652.7	58,538.5	55,560.5	55,398.3	51,289.9	(4,108.4)
Permanent Workyears.....	78.0	76.3	79.0	79.0	74.6	(4.4)
Total Workyears.....	84.1	82.6	80.6	80.6	79.1	(1.5)
Management and Support						
Budget Authority.....	\$ 322,234.5	\$ 334,058.0	\$ 332,075.0	\$ 332,075.0	\$ 354,130.0	\$ 22,055.0
Obligations.....	320,185.4	334,058.0	332,075.0	332,075.0	354,130.0	22,055.0
Outlays.....	286,091.4	352,589.9	350,012.7	350,012.7	359,759.9	9,747.2
Permanent Workyears.....	2,744.4	2,611.6	2,673.7	2,631.0	2,684.1	53.1
Total Workyears.....	2,794.3	2,822.0	2,839.2	2,839.2	2,854.7	15.5
Buildings and Facilities						
Budget Authority.....	\$ 7,500.0	\$ 6,000.0	\$ 23,500.0	\$ 23,500.0	\$ 8,000.0	\$(15,500.0)
Obligations.....	13,261.7	5,880.0	26,218.0	26,218.0	8,364.0	(17,854.0)
Outlays.....	5,059.9	7,733.0	9,995.0	9,995.0	18,110.0	8,115.0
SUBTOTAL, OPERATING PROGRAMS						
Budget Authority.....	\$1,541,792.0	\$1,481,640.3	\$1,581,042.3	\$1,581,042.3	\$1,629,000.0	\$ 47,957.7
Obligations.....	1,550,892.4	1,483,348.0	1,583,545.0	1,583,545.0	1,629,312.0	45,767.0
Outlays.....	1,462,097.5	1,542,740.0	1,548,109.3	1,548,109.3	1,611,747.0	63,637.7
Permanent Workyears.....	10,841.0	10,603.0	10,967.0	10,967.0	10,969.0	2.0
Total Workyears.....	11,176.0	11,459.7	11,664.0	11,664.0	11,668.0	4.0
Hazardous Substance Superfund						
Budget Authority.....	\$1,411,300.0	\$1,198,422.0	\$1,128,000.0	\$1,499,499.8 ^a	\$1,600,000.0 ^a	\$100,500.2
Obligations.....	1,050,748.9	1,578,600.0	1,499,500.0	1,499,500.0	1,700,000.0	200,500.0
Outlays.....	541,305.0	875,000.0	778,000.0	778,000.0	1,205,000.0	427,000.0
Permanent Workyears.....	2,078.0	2,716.0	2,156.0	2,156.0	2,219.0	63.0
Total Workyears.....	2,174.0	2,716.0	2,673.0	2,633.0	2,750.0	117.0

	Actual 1987	Budget Estimate 1988	Enacted 1988	Current Estimate 1988	Request 1989	Increase/ decrease 1989 Req. vs Current 1988
LUST Trust Fund						
Budget Authority.....	\$ 50,000.0 ^b	\$ 0.0	\$ 14,400.0	\$ 39,400.0 ^b	\$ 50,000.0	\$ 10,600.0
Obligations.....	20,324.4	25,000.0	44,076.0	44,076.0	50,000.0	5,924.0
Outlays.....	1,330.0	17,500.0	23,330.2	23,330.0	31,820.0	8,490.0
Permanent Workyears.....	46.0	85.0	80.0	80.0	85.0	5.0
Total Workyears.....	27.0	85.0	85.0	85.0	90.0	5.0
Construction Grants						
Budget Authority.....	\$2,361,000.0	\$2,000,000.0	\$2,304,000.0	\$2,304,000.0	\$1,500,000.0	\$ (804,000.0)
Obligations.....	2,168,797.0	1,999,999.0	2,604,000.0	2,604,000.0	2,100,000.0	(504,000.0)
Outlays.....	2,920,339.0	2,320,000.0	2,566,800.0	2,566,000.0	2,377,500.0	(188,500.0)
Scientific Activities Overseas						
Obligations.....	\$ 25.5	\$ 0.0	\$ 1,007.0	\$ 1,007.0	\$ 1,007.0	\$ 0.0
Outlays.....	163.0	275.0	275.0	275.0	275.0	0.0
Operations, Research and Facilities						
Obligations.....	\$ 948.0	\$ 500.0	\$ 151.0	\$ 151.0	\$ 0.0	\$ (151.0)
Outlays.....	89.0	500.0	1,050.0	1,050.0	250.0	(800.0)
Revolving Fund						
Obligations.....	\$ 997.0	\$ 1,000.0	\$ 1,000.0	\$ 1,000.0	\$ 1,000.0	\$ 0.0
Outlays.....	(422.0)	(500.0)	(500.0)	(500.0)	(500.0)	0.0
Misc. Contrib. Funds						
Obligations.....	\$ 4.0	\$ 10.0	\$ 45.0	\$ 45.0	\$ 30.0	\$ (15.0)
Outlays.....	23.0	50.0	50.0	50.0	10.0	(40.0)

	Actual 1987	Budget Estimate 1988	Enacted 1988	Current Estimate 1988	Request 1989	Increase/ decrease 1989 Req. vs Current 1988
<u>Reimbursements - S&E</u>						
Obligations.....	\$ 25,508.0	\$ 20,000.0	\$ 20,000.0	\$ 20,000.0	\$ 20,000.0	\$ 0.0
Permanent Workyears.....	60.0	56.0	62.0	62.0	58.0	(4.0)
Total Workyears.....	65.0	62.0	66.0	66.0	62.0	(4.0)
<u>Reimbursements-Superfund</u>						
Obligations.....	\$ 13,074.0	\$ 52,000.0	\$ 30,000.0	\$ 30,000.0	\$ 30,000.0	\$ 0.0
<u>TOTAL, EPA</u>						
Budget Authority.....	\$5,364,092.0	\$4,680,062.3	\$5,027,442.3	\$5,423,942.1	\$4,779,000.0	\$(664,942.1)
Obligations.....	4,831,319.2	5,160,457.0	5,783,324.0	5,783,324.0	5,531,349.0	(251,975.0)
Outlays.....	4,924,924.5	4,755,565.0	4,916,314.5	4,916,314.3	5,226,102.0	309,787.7)
Permanent Workyears.....	13,025.0	13,460.0	13,265.0	13,265.0	13,331.0	66.0
Total Workyears.....	13,442.0	14,322.7	14,488.0	14,448.0	14,570.0	122.0
	=====	=====	=====	=====	=====	=====

a/ Includes planned prior year funds.

b/ Of the \$50,000,000 appropriated in FY 1987,
the Agency planned to obligate \$25,000,000 in FY 1987
and to carry over \$25,000,000 into FY 1988.

ENVIRONMENTAL PROTECTION AGENCY

Object Classification
Direct Obligations
By Appropriation
(dollars in thousands)

	Actual 1987	Budget Estimate 1988	Enacted 1988	Current Estimate 1988	Request 1989	Increase/ decrease 1989 Req. vs Current 1988
Salaries and Expenses						
Personnel Services.....	\$ 468,325.0	\$ 513,647.0	\$ 484,175.0	\$ 476,175.0	\$ 485,678.0	\$ 9,503.0
Other objects:						
21.0 Travel and trans- portation of persons.....	19,059.0	21,252.0	21,691.0	21,691.0	23,218.0	1,527.0
22.0 Transportation of things.	2,093.0	2,114.0	2,098.0	2,098.0	2,069.0	(29.0)
23.1 Rental payments to GSA...	36,159.0	44,545.0	43,413.0	43,413.0	46,930.0	3,517.0
23.2 Rental payments to others	6,455.0	8,218.0	7,389.0	7,389.0	7,988.0	599.0
23.3 Communications, utilities, and misc. charges.....	34,593.0	38,106.0	41,566.0	41,566.0	44,932.0	3,366.0
24.0 Printing and reproduction	5,078.0	5,798.0	6,011.0	6,011.0	6,129.0	118.0
25.0 Other services.....	78,772.0	108,892.0	105,918.0	105,918.0	126,747.0	20,829.0
26.0 Supplies and materials...	14,848.0	11,793.0	16,933.0	16,933.0	18,204.0	1,271.0
31.0 Equipment.....	53,889.0	17,005.0	33,764.0	41,764.0	35,450.0	(6,314.0)
32.0 Land and structures.....	221.0	0.0	0.0	0.0	0.0	0.0
41.0 Grants, subsidies, and contributions.....	3,749.0	1,585.0	2,042.0	2,042.0	2,655.0	613.0
42.0 Insurance, claims, and indemnities.....	74.0	0.0	0.0	0.0	0.0	0.0
subtotal, other objects...	254,990.0	259,308.0	280,825.0	288,825.0	314,322.0	25,497.0
Total obligations.....	723,315.0	772,955.0	765,000.0	765,000.0	800,000.0	35,000.0
Research and Development						
25.0 Other services.....	\$ 130,681.0	\$ 107,660.0	\$ 109,060.0	\$ 109,060.0	\$ 115,133.0	\$ 6,073.0
31.0 Equipment.....	0.0	0.0	1,960.0	1,960.0	0.0	(1,960.0)
41.0 Grants, subsidies, and contributions.....	70,806.0	80,242.0	73,751.0	73,751.0	81,623.0	7,872.0
Total obligations.....	201,487.0	187,902.0	184,771.0	184,771.0	196,756.0	11,985.0

	Actual 1987	Budget Estimate 1988	Enacted 1988	Current Estimate 1988	Request 1989	Increase/ decrease 1989 Req. vs Current 1988
Abatement, Control, and Compliance						
21.0 Travel and transportation of persons.....	\$ 306.0	\$ 266.0	\$ 260.0	\$ 260.0	\$ 258.0	\$ (2.0)
22.0 Transportation of things.	9.0	0.0	0.0	0.0	0.0	0.0
23.3 Communications, utilities, and misc. charges.....	23.0	0.0	0.0	0.0	0.0	0.0
24.0 Printing and reproduction	136.0	0.0	0.0	0.0	0.0	0.0
25.0 Other services.....	232,874.0	218,147.0	247,727.0	247,727.0	318,665.0	70,938.0
26.0 Supplies and materials...	27.0	0.0	0.0	0.0	0.0	0.0
31.0 Equipment.....	132.0	0.0	1,960.0	1,960.0	0.0	(1,960.0)
33.0 Investments and loans....	28,325.0	0.0	16,950.0	16,950.0	0.0	(16,950.0)
41.0 Grants, subsidies, and contributions.....	350,997.0	298,198.0	340,659.0	340,659.0	305,269.0	(35,390.0)
Total obligations.....	612,829.0	516,611.0	607,556.0	607,556.0	624,192.0	16,636.0
Buildings and Facilities						
21.0 Travel and transportation of persons.....	\$ 49.0	\$ 98.0	\$ 98.0	\$ 98.0	\$ 100.0	\$ 2.0
25.0 Other services.....	3,878.0	5,390.0	5,390.0	5,390.0	7,438.0	2,048.0
26.0 Supplies and materials...	7.0	0.0	0.0	0.0	0.0	0.0
31.0 Equipment.....	19.0	0.0	0.0	0.0	0.0	0.0
32.0 Land and structures.....	9,309.0	392.0	20,730.0	20,730.0	826.0	(19,904.0)
Total obligations.....	13,262.0	5,880.0	26,218.0	26,218.0	8,364.0	(17,854.0)
Hazardous Substance Superfund						
Personnel Services.....	\$ 92,293.0	\$ 113,238.0	\$ 109,893.0	\$ 109,893.0	\$ 109,999.0	\$ 106.0
Other objects:						
21.0 Travel and transportation of persons.....	8,497.0	9,278.0	9,182.0	9,182.0	10,000.0	818.0
22.0 Transportation of things.	594.0	633.0	713.0	713.0	845.0	132.0
23.1 Rental payments to GSA...	7,484.0	7,695.0	9,792.0	9,792.0	14,432.0	4,640.0
23.2 Rental payments to others	1,411.0	3,106.0	1,847.0	1,847.0	2,732.0	885.0
23.3 Communications, utilities, and misc. charges.....	5,616.0	3,640.0	7,128.0	7,128.0	10,254.0	3,126.0

	Actual 1987	Budget Estimate 1988	Enacted 1988	Current Estimate 1988	Request 1989	Increase/ decrease 1989 Req. vs Current 1988
24.0 Printing and reproduction	842.0	1,029.0	1,271.0	1,271.0	1,566.0	295.0
25.0 Other services.....	733,948.0	1,118,471.0	1,144,875.0	1,144,875.0	1,307,395.0	162,520.0
26.0 Supplies and materials...	2,753.0	4,488.0	3,502.0	3,502.0	4,276.0	774.0
31.0 Equipment.....	21,180.0	11,104.0	17,498.0	17,498.0	19,323.0	1,825.0
32.0 Land and structures.....	2.0	14.0	0.0	0.0	0.0	0.0
41.0 Grants, subsidies, and contributions.....	176,120.0	305,904.0	193,796.0	193,796.0	219,178.0	25,382.0
42.0 Insurance, claims, and indemnities.....	9.0	0.0	3.0	3.0	0.0	(3.0)
subtotal, other objects...	958,456.0	1,465,362.0	1,389,607.0	1,389,607.0	1,590,001.0	200,394.0
Total obligations.....	1,050,749.0	1,578,600.0	1,499,500.0	1,499,500.0	1,700,000.0	200,500.0

LUST Trust Fund

Personnel Services.....	\$ 1,096.0	\$ 3,331.0	\$ 3,557.0	\$ 3,557.0	\$ 3,500.0	\$ (57.0)
Other objects:						
21.0 Travel and trans- portation of persons.....	108.0	183.0	183.0	183.0	197.0	14.0
22.0 Transportation of things.	18.0	0.0	17.0	17.0	14.0	(3.0)
23.1 Rental payments to GSA...	1.0	392.0	273.0	273.0	356.0	83.0
23.2 Rental payments to others	0.0	92.0	64.0	64.0	83.0	19.0
23.3 Communications, utilities, and misc. charges.....	7.0	323.0	225.0	225.0	293.0	68.0
24.0 Printing and reproduction	4.0	40.0	23.0	23.0	18.0	(5.0)
25.0 Other services.....	3,128.0	4,530.0	4,831.0	4,831.0	4,732.0	(99.0)
26.0 Supplies and materials...	25.0	70.0	61.0	61.0	55.0	(6.0)
31.0 Equipment.....	214.0	104.0	266.0	266.0	252.0	(14.0)
41.0 Grants, subsidies, and contributions.....	15,723.0	15,935.0	34,576.0	34,576.0	40,500.0	5,924.0
subtotal, other objects...	19,228.0	21,669.0	40,519.0	40,519.0	46,500.0	5,981.0
Total obligations.....	20,324.0	25,000.0	44,076.0	44,076.0	50,000.0	5,924.0

ENVIRONMENTAL PROTECTION AGENCY

Summary of State Grant Resources
(in thousands of dollars)

	<u>ACTUAL 1987</u>	<u>CURRENT ESTIMATE 1988</u>	<u>ESTIMATE 1989</u>	<u>INCREASE+ DECREASE- 1989 vs 1988</u>
<u>AIR</u>				
Section 105.....	<u>\$94,570.1</u>	<u>\$92,603.4</u>	<u>\$95,000.0</u>	<u>+\$2,396.6</u>
<u>WATER QUALITY</u>	<u>75,865.5</u>	<u>60,850.0</u>	<u>62,100.0</u>	<u>+1,250.0</u>
Section 106.....	<u>71,100.1</u>	<u>60,850.0</u>	<u>62,100.0</u>	<u>+1,250.0</u>
Clean Lakes.....	<u>4,765.4</u>	<u>---</u>	<u>---</u>	<u>---</u>
<u>DRINKING WATER</u>	<u>45,747.6</u>	<u>47,950.0</u>	<u>42,950.0</u>	<u>-5,000.0</u>
Public Water Systems				
Program Grants.....	<u>33,391.0</u>	<u>33,450.0</u>	<u>33,450.0</u>	<u>---</u>
Underground Injection				
Control Program.....	<u>9,756.6</u>	<u>11,500.0</u>	<u>9,500.0</u>	<u>-2,000.0</u>
Special Studies & Demos.....	<u>2,600.0</u>	<u>3,000.0</u>	<u>---</u>	<u>-3,000.0</u>
<u>HAZARDOUS WASTE</u>	<u>71,031.3</u>	<u>71,391.0</u>	<u>75,000.0</u>	<u>+3,609.0</u>
Hazardous Waste Management.....	<u>62,919.5</u>	<u>64,812.0</u>	<u>66,000.0</u>	<u>+1,188.0</u>
Hazardous Waste Initiative.....	<u>1,208.7</u>	<u>---</u>	<u>---</u>	<u>---</u>
Underground Storage Tanks.....	<u>6,903.1</u>	<u>6,579.0</u>	<u>9,000.0</u>	<u>+2,421.0</u>
<u>PESTICIDES</u>	<u>11,107.1</u>	<u>12,703.4</u>	<u>12,703.4</u>	<u>---</u>
Pesticides Enf. Grants.....	<u>8,624.2</u>	<u>8,703.4</u>	<u>8,703.4</u>	<u>---</u>
Pesticides Cert. & Training.....	<u>2,482.9</u>	<u>4,000.0</u>	<u>4,000.0</u>	<u>---</u>
<u>TOXIC SUBSTANCES</u>				
Toxics Enf. Grants.....	<u>2,241.7</u>	<u>2,200.0</u>	<u>2,200.0</u>	<u>---</u>
SUBTOTAL.....	<u>\$300,563.3</u>	<u>\$287,697.8</u>	<u>\$289,953.4</u>	<u>+2,255.6</u>
<u>CONSTRUCTION GRANTS</u>	<u>2,168,796.5</u>	<u>2,304,000.0</u>	<u>1,500,000.0</u>	<u>-804,000.0</u>
TOTAL.....	<u>\$2,469,359.8</u>	<u>\$2,591,697.8</u>	<u>\$1,789,953.4</u>	<u>-\$801,744.4</u>

ENVIRONMENTAL PROTECTION AGENCY

History of State Grant Budget Authority

Part I: 1971 - 1975

(in thousands of dollars)

	<u>1971</u>	<u>1972</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>
<u>AIR</u>	<u>\$30,200</u>	<u>\$42,900</u>	<u>\$50,000</u>	<u>\$50,000</u>	<u>\$55,268</u>
Section 105.....	30,200	42,900	50,000	50,000	55,268
Section 175.....	...	...	...	...	...
<u>WATER QUALITY</u>	<u>10,000</u>	<u>15,000</u>	<u>70,000</u>	<u>150,000</u>	<u>199,625</u>
Section 106.....	10,000	15,000	20,000	50,000	45,625
Section 208.....	...	...	50,000 <u>1/</u>	100,000 <u>1/</u>	150,000 <u>1/</u>
Clean Lakes.....	...	...	...	...	4,000
<u>DRINKING WATER</u>	<u>...</u>	<u>...</u>	<u>...</u>	<u>...</u>	<u>...</u>
Public Water Systems.....	...	...	...	...	...
Underground Injection.....	...	...	...	...	...
Special Studies & Demos.....	...	...	...	...	...
<u>HAZARDOUS WASTE</u>	<u>1,629</u>	<u>2,545</u>	<u>3,250</u>	<u>...</u>	<u>...</u>
Hazardous Waste Management..	...	...	...	...	...
Solid Waste Management.....	1,629	2,545	3,250	...	...
Resource Recovery.....	...	...	...	...	...
Hazardous Waste Initiative..	...	...	...	...	...
Hazardous Waste Compliance..	...	...	...	...	...
Underground Storage Tanks...	...	...	...	...	...
<u>PESTICIDES</u>	<u>...</u>	<u>...</u>	<u>...</u>	<u>...</u>	<u>...</u>
Pesticides Enf. Grants.....	...	...	...	...	...
Pesticides Cert. & Training.	...	...	...	*	*
<u>TOXIC SUBSTANCES</u>	<u>...</u>	<u>...</u>	<u>...</u>	<u>...</u>	<u>...</u>
Toxic Enf. Grants.....	...	...	...	...	...
TOTAL.....	<u>\$41,829</u>	<u>\$60,445</u>	<u>\$123,250</u>	<u>\$200,000</u>	<u>\$254,893</u>

SA-16

1/ CONTRACT AUTHORITY

*Pesticides certification and training data for these years is unavailable.

ENVIRONMENTAL PROTECTION AGENCY

History of State Grant Budget Authority

Part II: 1976 - 1980

(in thousands of dollars)

	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>
<u>AIR</u>	<u>\$51,518</u>	<u>\$55,550</u>	<u>\$66,135</u>	<u>\$130,025</u>	<u>\$82,800</u>
Section 105.....	51,518	55,550	66,135	80,025	82,800
Section 175.....	...	...	...	50,000	...
<u>WATER QUALITY</u>	<u>112,375</u>	<u>80,000</u>	<u>128,110</u>	<u>108,003</u>	<u>101,230</u>
Section 106.....	44,375	50,000	52,400	52,400	48,730
Section 208.....	53,000	15,000	59,509	41,028	37,500
Clean Lakes.....	15,000	15,000	16,201	14,575	15,000
<u>DRINKING WATER</u>	<u>10,000</u>	<u>20,000</u>	<u>27,110</u>	<u>36,270</u>	<u>34,745</u>
Public Water Systems.....	7,500	15,000	20,500	26,400	29,450
Underground Injection.....	2,500	5,000	6,000	7,600	4,395
Special Studies & Demos.....	...	...	610	2,270	900
<u>HAZARDOUS WASTE</u>	<u>1,800</u>	<u>2,925</u>	<u>14,304</u>	<u>44,886</u>	<u>38,600</u>
Haz. Waste Management.....	...	...	...	15,018	18,600
Solid Waste Management.....	1,800	2,925	14,304	15,150	10,000
Resource Recovery.....	...	...	...	14,718	10,000
Hazardous Waste Initiative...	...	...	...	...	...
Hazardous Waste Compliance...	...	...	...	...	...
Underground Storage Tanks....	...	...	...	...	...
<u>PESTICIDES</u>	<u>...</u>	<u>1,000</u>	<u>7,280</u>	<u>13,052</u>	<u>12,393</u>
Pesticides Enf. Grants.....	...	1,000	5,000	9,538	8,750
Pesticides Cert. & Training..	*	*	2,280	3,514	3,643
<u>TOXIC SUBSTANCES</u>	<u>...</u>	<u>...</u>	<u>...</u>	<u>...</u>	<u>...</u>
Toxic Enf. Grants.....	...	...	...	...	...
 TOTAL.....	 <u>\$175,693</u>	 <u>\$159,475</u>	 <u>\$242,939</u>	 <u>\$332,236</u>	 <u>\$269,768</u>

SA-17

1977-1978

ENVIRONMENTAL PROTECTION AGENCY

ENVIRONMENTAL PROTECTION AGENCY

History of State Grant Budget Authority

Part III: 1981 - 1985

(in thousands of dollars)

	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>
<u>AIR.....</u>	<u>\$87,673</u>	<u>\$87,735</u>	<u>\$85,050</u>	<u>\$87,684</u>	<u>\$90,937</u>
Section 105.....	87,673	87,735	\$85,050	87,684	90,937
Section 175.....	...	...	...	...	...
<u>WATER QUALITY</u>	<u>95,696</u>	<u>60,200</u>	<u>57,200</u>	<u>59,259</u>	<u>66,299</u>
Section 106.....	51,223	51,200	54,200	54,259	61,299
Section 208.....	33,473	...	...	...	...
Clean Lakes.....	11,000	9,000	3,000	5,000	5,000
<u>DRINKING WATER.....</u>	<u>37,598</u>	<u>37,848</u>	<u>36,425</u>	<u>36,850</u>	<u>39,050</u>
Public Water Systems.....	29,450	29,450	27,450	27,450	28,450
Underground Injection.....	6,648	6,575	7,075	7,500	8,500
Special Studies & Demos....	1,500	1,823	1,900	1,900	2,100
<u>HAZARDOUS WASTE.....</u>	<u>38,570</u>	<u>41,700</u>	<u>44,068</u>	<u>46,850</u>	<u>57,145</u>
Hazardous Waste Management.	26,487	41,700	44,068	46,850	46,970
Solid Waste Management.....	8,083	...	...	...	...
Resource Recovery.....	4,000	...	...	...	...
Hazardous Waste Initiative.	...	...	...	...	5,175
Hazardous Waste Compliance.	...	...	...	...	5,000
Underground Storage Tanks..	...	...	...	...	...
<u>PESTICIDES.....</u>	<u>10,972</u>	<u>11,202</u>	<u>10,718</u>	<u>10,860</u>	<u>12,321</u>
Pesticides Enf. Grants.....	8,020	8,632	8,718	8,703	9,717
Pesticides Cert. & Training	2,952	2,570	2,000	2,157	2,604
<u>TOXIC SUBSTANCES.....</u>	<u>1,000</u>	<u>500</u>	<u>...</u>	<u>500</u>	<u>1,500</u>
Toxic Enf. Grants.....	1,000	500	...	500	1,500
<u>TOTAL.....</u>	<u>\$271,509</u>	<u>\$239,185</u>	<u>\$233,461</u>	<u>\$242,003</u>	<u>\$267,252</u>

SA-18

ENVIRONMENTAL PROTECTION AGENCY

History of State Grant Budget Authority Part IV: 1986 - 1989 (in thousands of dollars)

	<u>1986</u>	<u>1987</u>	<u>1988 Current Estimate</u>	<u>1989 Estimate</u>
AIR	\$95,657	\$94,570	\$92,603	\$95,000
Section 105.....	95,657	94,570	92,603	95,000
Section 175.....	...	...	...	...
WATER QUALITY.....	66,889	75,865	60,850	62,100
Section 106.....	62,104	71,100	60,850	62,100
Section 208.....	...	...	...	...
Clean Lakes.....	4,785	4,765	...	...
DRINKING WATER.....	39,169	45,748	47,950	42,950
Public Water Systems.....	28,219	33,391	33,450	33,450
Underground Injection.....	8,701	9,757	11,500	9,500
Special Studies & Demos.....	2,249	2,600	3,000	...
HAZARDOUS WASTE.....	66,751	71,031	71,391	75,000
Haz. Waste Management.....	55,506	62,919	64,812	66,000
Solid Waste Management.....	...	...	...	...
Resource Recovery.....	...	...	...	...
Hazardous Waste Initiative...	4,546	1,209	...	...
Hazardous Waste Compliance...	...	...	...	...
Underground Storage Tanks....	6,699	6,903	6,579	9,000
PESTICIDES.....	11,806	11,107	12,703	12,703
Pesticides Enf. Grants.....	9,304	8,624	8,703	8,703
Pesticides Cert. & Training..	2,502	2,483	4,000	4,000
TOXIC SUBSTANCES.....	2,261	2,242	2,200	2,200
Toxic Enf. Grants.....	2,261	2,242	2,200	2,200
TOTAL.....	\$282,533	\$300,563	\$287,697	\$289,953

SA-19

U.S. GOVERNMENT PRINTING OFFICE
1986 O - 311-301
GSA GEN. REG. NO. 27
5010-108
5010-109
5010-110
5010-111
5010-112
5010-113
5010-114
5010-115
5010-116
5010-117
5010-118
5010-119
5010-120
5010-121
5010-122
5010-123
5010-124
5010-125
5010-126
5010-127
5010-128
5010-129
5010-130
5010-131
5010-132
5010-133
5010-134
5010-135
5010-136
5010-137
5010-138
5010-139
5010-140
5010-141
5010-142
5010-143
5010-144
5010-145
5010-146
5010-147
5010-148
5010-149
5010-150
5010-151
5010-152
5010-153
5010-154
5010-155
5010-156
5010-157
5010-158
5010-159
5010-160
5010-161
5010-162
5010-163
5010-164
5010-165
5010-166
5010-167
5010-168
5010-169
5010-170
5010-171
5010-172
5010-173
5010-174
5010-175
5010-176
5010-177
5010-178
5010-179
5010-180
5010-181
5010-182
5010-183
5010-184
5010-185
5010-186
5010-187
5010-188
5010-189
5010-190
5010-191
5010-192
5010-193
5010-194
5010-195
5010-196
5010-197
5010-198
5010-199
5010-200

ENVIRONMENTAL PROTECTION AGENCY

Permanent Positions By Grade

SALARIES AND EXPENSES

<u>Grades</u>	<u>Actual 1987</u>	<u>Current Estimate 1988</u>	<u>Estimate 1989</u>
Executive Level II.....	1	1	1
Executive Level III.....	1	1	1
Executive Level IV.....	9	10	10
Executive Level V.....	1	1	1
Subtotal.....	12	13	13
ES-6.....	3	4	4
ES-5.....	33	36	36
ES-4.....	84	92	92
ES-3.....	69	76	76
ES-2.....	13	14	14
ES-1.....	9	10	10
Subtotal.....	211	232	232
GS-17.....	...	1	2
GS-16.....	11	11	11
GS/GM-15.....	598	618	618
GS/GM-14.....	1,298	1,333	1,331
GS/GM-13.....	1,910	1,974	1,977
GS-12.....	1,938	2,007	2,003
GS-11.....	1,051	1,088	1,087
GS-10.....	70	72	72
GS-9.....	814	843	840
GS-8.....	187	194	191
GS-7.....	904	936	934
GS-6.....	506	524	523
GS-5.....	677	701	701
GS-4.....	298	309	309
GS-3.....	73	76	76
GS-2.....	9	9	9
GS-1.....	...	...	...
Subtotal.....	10,344	10,696	10,684

<u>Grades</u>	<u>Actual 1987</u>	<u>Current Estimate 1988</u>	<u>Estimate 1989</u>
Positions established by act of July 1, 1974 (42 U.S.C 207):			
Director grade 06, \$31,907 to \$55,120.....	61	62	62
Senior grade 05, \$25,517 to \$44,971.....	101	102	102
Full grade 04, \$21,510 to \$37,606.....	41	45	45
Assistant grade 03, \$19,991 to \$32,531.....	7	8	8
Subtotal.....	210	217	217
Positions established by act of November 16, 1977 (42 U.S.C. 201) compensation for which is not to exceed the maximum rate payable for a GS-18.....	9	9	9
<u>Ungraded</u>	56	58	58
TOTAL PERMANENT POSITIONS.....	10,841	11,225	11,213

ENVIRONMENTAL PROTECTION AGENCY

Permanent Positions By Grade

HAZARDOUS SUBSTANCE RESPONSE TRUST FUND

<u>Grades</u>	<u>Actual 1987</u>	<u>Current Estimate 1988</u>	<u>Estimate 1989</u>
ES-5.....	2	2	2
ES-4.....	4	5	5
ES-3.....	5	5	5
ES-2.....	2	5	5
ES-1.....	...	3	3
Subtotal.....	13	20	20
GS/GM-15.....	57	69	72
GS/GM-14.....	157	188	194
GS/GM-13.....	339	416	427
GS-12.....	501	615	631
GS-11.....	300	368	378
GS-10.....	1	1	1
GS-9.....	185	227	233
GS-8.....	9	11	11
GS-7.....	167	205	210
GS-6.....	65	80	82
GS-5.....	139	171	175
GS-4.....	92	113	116
GS-3.....	26	32	33
GS-2.....	7	9	9
Subtotal.....	2,045	2,505	2,572

Grades

Positions established by act of July 1, 1974 (42 U.S.C. 207):

Director grade 06, \$31,907 to \$55,120.....

Senior grade 05, \$25,517 to \$44,971.....

Full grade 04, \$21,510 to \$37,606.....

Senior assistant grade 03, \$19,991 to \$32,531.....

Subtotal.....

TOTAL PERMANENT POSITIONS.....

Actual 1987	Current Estimate 1988	Estimate 1989
7	7	7
7	8	8
3	5	6
3	4	5
20	24	26
2,078	2,549	2,618

ENVIRONMENTAL PROTECTION AGENCY

Permanent Positions By Grade

LEAKING UNDERGROUND STORAGE TANK (LUST) TRUST FUND

<u>Grades</u>	<u>Actual 1987</u>	<u>Current Estimate 1988</u>	<u>Estimate 1989</u>
ES-5.....	...	...	...
ES-4.....	...	1	1
ES-3.....	1	1	1
ES-2.....	...	...	...
ES-1.....	...	...	...
Subtotal.....	1	2	2
GS/GM-15.....	1	2	2
GS/GM-14.....	6	8	9
GS/GM-13.....	4	8	9
GS-12.....	13	22	21
GS-11.....	5	9	11
GS-9.....	3	6	7
GS-7.....	5	9	10
GS-6.....	1	2	2
GS-5.....	4	7	7
GS-4.....	3	6	6
GS-3.....	...	...	...
GS-2.....	...	...	...
Subtotal.....	45	79	84
TOTAL PERMANENT POSITIONS.....	46	81	86

ENVIRONMENTAL PROTECTION AGENCY

Permanent Positions By Grade

REIMBURSABLES

(SALARIES AND EXPENSES)

Grades	Actual 1987	Current Estimate 1988	Estimate 1989
GS/GM-15.....	3	3	3
GS/GM-14.....	...	1	1
GS/GM-13.....	7	7	7
GS-12.....	11	11	11
GS-11.....	6	6	6
GS-10.....	3	3	3
GS-9.....	8	8	8
GS-8.....	5	5	5
GS-7.....	3	3	3
GS-6.....	2	2	2
GS-5.....	...	1	1
Subtotal.....	48	50	50
Positions established by act of July 1, 1974 (42 U.S.C 207):			
Director grade 06, \$31,907 to \$55,120.....	7	7	7
Senior grade 05, \$25,517 to \$44,971.....	3	3	3
Full grade 04, \$21,510 to \$37,606.....	1	1	1
Subtotal.....	11	11	11
Ungraded.....	1	1	1
TOTAL PERMANENT POSITIONS.....	60	62	62

ENVIRONMENTAL PROTECTION AGENCY

Average Grade and Salary

Appropriation/Pay Plan	1987 Actuals	1988 Current Estimate	1989 President's Budget
Salaries and Expenses			
Average ES Salary.....	\$70,383	\$71,439	\$72,510
Average GS/GM Grade.....	10.7	10.7	10.7
Average GS/GM Salary.....	\$32,086	\$32,567	\$33,056
Average Salary of Ungraded Positions.....	\$12,178	\$12,361	\$12,546
Superfund			
Average ES Salary.....	\$69,532	\$70,575	\$71,634
Average GS/GM Grade.....	10.4	10.4	10.4
Average GS/GM Salary.....	\$29,569	\$30,003	\$30,453
Leaking Underground Storage Tank			
Average ES Salary.....	\$71,130	\$72,197	\$73,280
Average GS/GM Grade.....	10.3	10.3	10.3
Average GS/GM Salary.....	\$30,443	\$30,900	\$31,363
Reimbursables			
Average GS/GM Grade.....	10.6	10.6	10.6
Average GS/GM Salary.....	\$30,124	\$30,576	\$31,035
Average Salary of Ungraded Positions.....	\$11,535	\$11,708	\$11,884
TOTAL AGENCY AVERAGE			
Average ES Salary.....	\$70,337	\$71,382	\$72,463
Average GS/GM Grade.....	10.7	10.7	10.7
Average GS/GM Salary.....	\$31,659	\$32,132	\$32,518
Average Salary of Ungraded Positions.....	\$12,166	\$12,348	\$12,534

(CONTINUED ON REVERSE)

ENVIRONMENTAL PROTECTION AGENCY

WASHINGTON, D.C. 20460

U.S. GOVERNMENT PRINTING OFFICE