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December 17, 1996

Via Telefax and First Class Mail
Patrick McManus (3HW21)
Remedial Project Manager
U.S. Environmental Protection Agency -
Region III
841 Chestnut Building
Philadelphia, Pennsylvania 19107-4431

Re: Dublin NPL Site
June 1996 Remedial Investigation/Feasibility Study
Administrative Order on Consent
Docket No. III-91-70-DC
Response to EPA November 27, 1996 Disapproval Notice
- Request for Approval of Contractor

Dear Mr. McManus:

On behalf of Sequa Corporation, this is in response to the United States Environmental Protection Agency's ("EPA") disapproval of and comments to the June 1996 Remedial Investigation/Feasibility Study ("RI/FS"). In addition, pursuant to Section VIII.B of the referenced Order, this letter is a request for EPA's approval of Sequa's contractor, Environmental Resources Management, Inc. ("ERM") to act as the lead consultant for the completion of the RI/FS.

In general, Sequa is surprised by the nature and extent of the comments, and more importantly, is concerned with the overall tone and adversarial nature of the comments. As you know, Sequa attempted to meet with EPA since August 1996 to discuss the RI/FS and the issues presented therein to avoid such a disapproval, but was refused such a meeting. We frankly can not understand why EPA's management of the Dublin Site continues to have an "us versus them" mentality as opposed to working with the PRP's as a team to achieve an expeditious resolution.

Since the time Sequa submitted the June 1996 RI/FS prepared by Geraghty & Miller, Inc., the two principal writers, Barbara Dolce, Principal/Project Manager and Daniel A. Nachman, Vice President/Project Officer, terminated their employment at Geraghty & Miller. Sequa has selected ERM and Gary L. Walters

Patrick McManus (3HW21)
December 17, 1996
Page 2

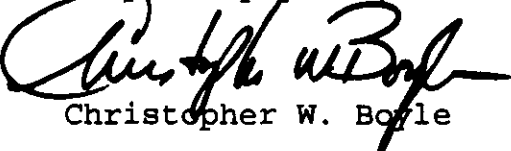
from ERM's Annapolis office (tel. 410.266.0006) to act as project manager. Based on ERM's past experience with both EPA and the Pennsylvania Department of Environmental Protection, Sequa is confident that ERM has the ability, experience and expertise to provide a thorough response to EPA's comments and to complete the RI/FS in a manner which is acceptable to all parties. Attached for your reference is ERM's Statement of Qualifications. Further, Sequa has arranged to have Barbara Dolce available to both Sequa and ERM as an independent contractor to assist in the transition process.

So as not to delay this Project, Sequa has already authorized ERM to initiate work. Nevertheless, as you know, the EPA comments are extensive. In light of the volume and nature of the comments, the intervening holiday season and the change in consultants for completion of the RI/FS, Sequa is requesting that the time period for providing its response be extended. This extension will allow ERM the opportunity to complete its review, to evaluate EPA's comments and to provide an appropriate response. Most importantly, we propose to use this extension to again attempt to schedule a meeting between EPA, PADEP and Sequa to discuss the RI/FS and EPA's comments prior to the submission of a revised RI/FS.

We propose that this joint meeting take place at EPA's Region III offices in Philadelphia after the holidays and sometime during the first two weeks of January 1997. We request that EPA provide us with several acceptable meeting dates and times, so that we can coordinate our schedule and confirm a meeting date.

We look forward to hearing from you.

Very truly yours,



Christopher W. Boyle

CWB/nb
Enc.

cc: Brent Murray, Sequa Corporation
Andrew Duchovnay, Esquire (3HW22) USEPA

10 December 1996

Mr. Christopher Boyle
Drinker Biddle & Reath
Philadelphia National Bank Building
1345 Chestnut Street
Philadelphia, Pennsylvania 19107-3496



Re: Environmental Resources Management, Inc.'s. (ERM's)
Qualifications

Dear Chris:

Per your request, Environmental Resources Management, Inc. (ERM) is pleased to present our qualifications for assisting Sequa Corporation at the Dublin NPL Site.

ERM Qualifications

ERM is an international organization of environmental experts with over 70 offices throughout the United States and over 100 office worldwide. ERM was established in 1977 and in less than twenty years has grown to be one of the largest and most respected consulting organizations in the world. ERM provides full service environmental engineering and management services to a wide range of private and public sector clients. According to *Engineering News Record*, ERM is presently the third largest hazardous waste management firm and fourth largest environmental science and engineering firm in the U.S.

We have successfully completed over 1,000 site remediation projects nationwide, including 190 National Priorities List (NPL) Sites. We have considerable experience working with the US EPA Region III and the Pennsylvania Department of Environmental Protection (PADEP). ERM has worked on 46 NPL sites in Region III, including 31 sites in the Commonwealth of Pennsylvania. A complete listing of ERM's NPL experience by EPA Region and State is provided at Attachment A.

Key Personnel

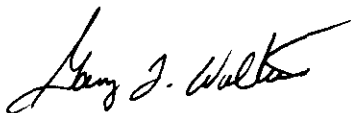
To assist Sequa on the Dublin NPL Site, ERM has assembled a team of senior scientists and engineers that have an average of over 18 years of experience in the site remediation business. Most of the proposed team members have a proven track record of high quality technical support and responsiveness with Sequa. Gary Walters will coordinate the effort, provide engineering expertise, and serve as the primary point-of-contact for Sequa. Other key members of the proposed team and their areas of specialization include:

| | |
|---------------------|------------------------------|
| Marilyn Hewitt | Geology/Hydrogeology |
| Robert Keating | Geology/Hydrogeology |
| Bruce Molholt, Ph.D | Human Health Risk Assessment |
| Robert Dwyer, Ph.D | Ecological Risk Assessment |

Detailed professional profiles for each of the above key members of the project team are included as Attachment B.

As always, if you have questions or require any additional information, please do not hesitate to contact me at (410) 266-0006.

Sincerely,



Gary L. Walters
Associate

GLW:pm
enclosures
cc: Brent Murray, Sequa

AR300769

Attachment A
ERM's Superfund (NPL)
Experience

AR300770

THE ERM GROUP QUALIFICATIONS AND EXPERIENCE NATIONAL PRIORITY LIST EXPERIENCE

REGION I - 14 Sites

Connecticut (2 Sites)

Laurel Park, Inc. - Naugatuck
New London Submarine Base - Groton

Massachusetts (6 Sites)

Cannon Engineering Corp. - Bridgewater
New Bedford Site - New Bedford
Norwood PCBs - Norwood
Re-Solve, Inc. - Dartmouth
Rose Disposal Pit - Lanesborough
Shpack Landfill - Norton

Maine (1 Site)

Brunswick Naval Air Station - Brunswick

New Hampshire (2 Sites)

Fletcher's Paint Works & Storage - Milford
South Municipal Water Supply Well - Peterborough

Rhode Island (1 Site)

Newport Naval Education & Training Center - Middletown

Vermont (2 Sites)

Pine Street Canal - Burlington
Transitor Electronics - Bennington

REGION II - 34 Sites

New Jersey (19 Sites)

American Cyanamid Co. - Bound Brook
Bridgeport Rental & Oil Services (BROS) - Bridgeport
Chemical Leaman Tank Lines, Inc. - Logan Township
Combe Fill South Landfill - Chester Township
Evor Phillips Leasing - Old Bridge
Fort Dix Landfill - Wrightstown
Hercules, Inc. (Gibbstown Plant) - Gibbstown
JIS Landfill - South Brunswick
Kin-Buc Landfill - Edison
King of Prussia - Winslow Township
Matack Truck Terminal Site - Woolwich Township
Maywood Chemical Co. - Rochelle Park
Myers Property - Franklin Township
Naval Air Engineering Center - Lakehurst
Naval Weapons Station Earle (Site A) - Colts Neck
Roebing Steel Co. - Florence
SCP (Scientific Chemical Processing) - Carlstadt
Syncon Resins - Kearny
Williams Property - Cape May

New York (12 Sites)

Chenango Industries - Binghamton
Facet Enterprises, Inc. - Elmira
Fulton Terminals - Fulton
General Motors Central Foundry - Massena
Goldisc Recordings Inc. - Holbrook
Li Tungsten - Glen Cove
Malta Rocket Fuel Area - Malta
Old Bethpage Landfill - Oyster Bay
Pasley Solvents & Chemicals - Garden City
Sidney Landfill - Sidney
Suffern Village Well Field - Suffern
Syosset Landfill - Oyster Bay

Puerto Rico (3 Sites)

Barceloneta Landfill - Florida Afuera
Upjohn Facility - Barceloneta
Vega Alta Public Supply Wells - Vega Alta

REGION III - 46 Sites

Delaware (6 Sites)

Coker's Sanitation Service Landfills - Cheswold
Delaware City PVC Plant - Delaware City
Harvey Knott Drum Disposal - Kirkwood
New Castle Spill Site - New Castle
Tybouts Corner Landfill - Wilmington
Tyler's Refrigeration Pit - Smyrna

Maryland (5 Sites)

Aberdeen Proving Ground/Michaelsville Landfill - Aberdeen
Aberdeen Proving Ground/Edgewood Area - Aberdeen
Mid-Atlantic Wood Preservers, Inc. - Harmans
Sand, Gravel & Stone - Elkton
Woodlawn County Landfill - Woodlawn

Pennsylvania (31 Sites)

Ambler Asbestos Piles - Ambler
Bally Groundwater Contamination - Bally
Bell Landfill - Wyalusing/Terry Township
Bendix Flight Systems Division - South Montrose
Blosenski Landfill - Coatesville
Boarhead Farms - Bridgeton
Brodhead Creek - Stroudsburg
C&D Recycling - Freeland
Dorney Road Landfill - Mertztown
Eastern Diversified Metals - Hometown
Heleva Landfill - North Whitehall
Henderson Road Site - Upper Merion
Hranica Landfill - Sarver
Jack's Creek/Sitkin Smelting - Maitland
Kimberton Site - Borough of Kimberton
Lackawanna Refuse - Old Forge
Letterkenny Army Depot (Disposal Area) - Chambersburg
Mill Creek Dump - Erie
Moyers Landfill - Collegeville
MW Manufacturing - Eagleville
North Penn Area 2 - Hatfield
North Penn Area 7 - Lansdale
Raymark Site - Hatboro
Strasburg Landfill - Newlin Township
Textron Lycoming - Williamsport
Tobyhanna Army Depot - Tobyhanna
Tonolli Corp. - Nesquehoning
Transicoil, Inc. - Worcester
Tyson's Site - Upper Merion Township
Whitmoyer Laboratories - Myerstown
William Dick Lagoons - West Cain Township

Virginia (3 Sites)

Avtex Fibers, Inc. - Front Royal
Disston/Sandvik - Danville, VA
Suffolk City Landfill - Suffolk

West Virginia (1 Site)

Fike Chemical - Nitro

**THE ERM GROUP QUALIFICATIONS AND EXPERIENCE
NATIONAL PRIORITY LIST EXPERIENCE**

REGION IV - 24 Sites

Alabama (1 Site)

Olin Corp. - McIntosh

Florida (12 Sites)

62nd Street Landfill - Tampa
Alpha Chemical Corp. - Lakeland
City Industries - Orlando
Kassauf-Kimerling Battery Disposal - Tampa
Northwest 58th Street Landfill - Miami
Peak Oil Co./Bay Drum Co. - Tampa
Pickettville Road Landfill - Jacksonville
Pioneer Sand - Pensacola
Sherwood Medical Industries - Deland
Sydney Mine Sludge Ponds - Brandon
Taylor Road Landfill - Tampa
Wilson Concepts of Florida, Inc. - Pompano Beach

Georgia (2 Sites)

Hercules 009 Landfill - Brunswick
Powersville Landfill - Peach County

North Carolina (4 Sites)

Aberdeen Pesticide Dumps - Aberdeen
Bypass 601 Groundwater Contamination - Concord
Geigy Chemical - Aberdeen
JFD Electronics/Channel Master - Oxford

South Carolina (2 Sites)

SCRDI Bluff Road - Columbia
Savannah River Site (USDOE) - Aiken

Tennessee (3 Sites)

North Hollywood Dump - Memphis
Milan Army Ammunition Plant - Milan
Oak Ridge Reservation (USDOE) - Oak Ridge

REGION V - 24 Sites

Illinois (5 Sites)

Acme Solvent Reclaiming, Inc. - Morristown
Cross Brothers Pail Recycling - Pembroke Township
Joliet Army Ammunition Plant (Assembly Area) - Joliet
Refinery Products - Schiller Park
Woodstock Municipal Landfill - Woodstock

Indiana (10 Sites)

Douglas Road Landfill - Mishawaka
EnviroChem Corporation - Zionsville
Marion (Bragg) Dump - Marion
MIDCO I - Gary
MIDCO II - Gary
Ninth Avenue Dump Site - Gary
Northside Sanitary Landfill - Zionsville
Prestolite Battery Division - Vincennes
Seymour Recycling - Indianapolis
Waste, Inc. Landfill - Michigan City

Michigan (1 Site)

Thermo-Chem, Inc. - Muskegon

Ohio (8 Sites)

Alsco Anaconda - Gnadenhutten
Chem-Dyne - Hamilton
Feed Materials Production Center (USDOE) - Fernald
Fields Brook - Ashtabula
Industrial Excess Landfill - Uniontown
Nease Chemical - Salem
Unico Alloys Inc. - Columbus
Van Dale Junkyard - Marietta

REGION VI - 28 Sites

Arkansas (2 Sites)

Arkwood, Inc. - Omaha
Vertac, Inc. - Jacksonville

Louisiana (5 Sites)

Bayou Sorrel Site - Bayou Sorrel
Combustion, Inc. - Denham Springs
Gulf Coast Vacuum Services Site - Vermillion Parish
PAB Oil & Chemical Service - Abbeville
Petro-Processors of Louisiana, Inc. - Baton Rouge

New Mexico (2 Sites)

Prewitt Abandoned Refinery - Prewitt
South Valley Site - Albuquerque

Oklahoma (3 Sites)

Compass Industries (Avery Drive) - Tulsa
Hardage/Criner - Criner
Sand Springs Petrochemical Complex - Sand Springs

Texas (16 Sites)

Bailey Waste Disposal - Bridge City
Bio-Ecology Systems - Grand Prairie
Brio Refining Co., Inc. - Friendswood
Confidential PCB Site - Houston
Crystal Chemical Co. - Houston
Dixie Oil Processors, Inc. - Friendswood
French Ltd. - Crosby
Geneva Industries/Fuhrmann Energy - Houston
Highlands Acid Pit - Highlands
Odessa Chromium #1 - Odessa
Odessa Chromium #2 - Odessa
Petro-Chemical Systems, Inc. - Liberty
Pig Road Pits - San Jacinto, TX
Sheridan Disposal Services - Hempstead
Tex Tin Corporation - Texas City
United Creosoting Company - Conroe

REGION VII - 3 Sites

Iowa (1 Site)

Aidex Corp. - Council Bluffs

Missouri (2 Sites)

Conservation Chemical Co. - Kansas City
Oronogo-Duenweg Mining Belt - Jasper County

**THE ERM GROUP QUALIFICATIONS AND EXPERIENCE
NATIONAL PRIORITY LIST EXPERIENCE**

REGION VIII - 9 Sites

Colorado (6 Sites)

Denver Radium Site - Denver
Idarado Mining & Milling Complex - Telluride
Lowry Landfill - Aurora
Rocky Flats Plant (USDOE) - Golden
Rocky Mountain Arsenal - Commerce County
Sand Creek Industrial - Commerce City

Utah (3 Sites)

Hill Air Force Base - Ogden
Micronutrients - Edra Siding
Sharon Steel Corp. - Midvale

REGION IX - 6 Sites

California (5 Sites)

Aerojet General Corp. - Rancho Cordova
Levin Metals - Richmond
Purity Oil Sales, Inc. - Malaga
Rhône-Poulenc/Zoecon Corporation - East Palo Alto
Watkins-Johnson Company - Scotts Valley

Nevada (1 Site)

Nevada Test Site (USDOE)

REGION X - 2 Sites

Idaho (1 Site)

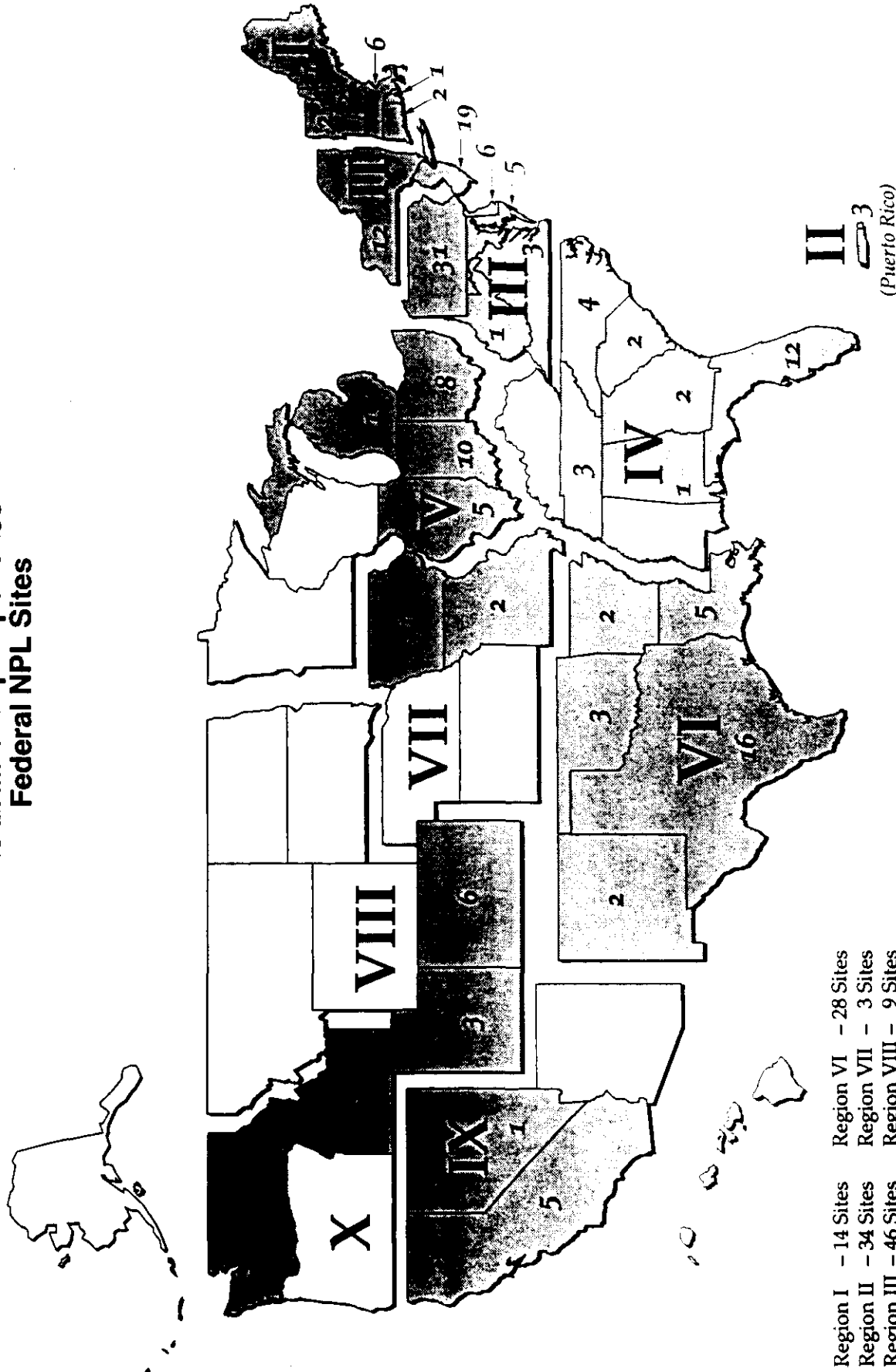
Idaho National Engineering Laboratory (USDOE) - Scoville

Washington (1 Site)

Kaiser Aluminum Mead Works - Mead

NATIONAL TOTAL - 190 NPL Sites

The ERM Group Experience – Federal NPL Sites



| | | | |
|--------------------------|------------|-------------|------------|
| Region I | - 14 Sites | Region VI | - 28 Sites |
| Region II | - 34 Sites | Region VII | - 3 Sites |
| Region III | - 46 Sites | Region VIII | - 9 Sites |
| Region IV | - 24 Sites | Region IX | - 6 Sites |
| Region V | - 24 Sites | Region X | - 2 Sites |
| Total – 190 Sites | | | |

Attachment B
Professional Profiles for Key
ERM Team Members

AR300775

Gary L. Walters, CHMM

Fields of Competence

Site remediation
 Superfund and NCP
 RCRA corrective action
 Hazardous waste management
 Water and wastewater treatment
 Industrial pretreatment
 DOD and DOE environmental restoration

Experience Summary

Sixteen years of experience in environmental engineering, with an emphasis in hazardous waste management and remediation. Engineering group manager within ERM's Annapolis, Maryland office since 1991, with responsibility for overseeing work of ten multi-disciplined engineers, career development, and maintaining quality control on all engineering projects. Intimate familiarity with the DOD and DOE environmental restoration programs. Manager within the Army's IRP for over six years, with oversight responsibility for environmental restoration activities at 30 Army installations, many of which were on or proposed for inclusion on the NPL. Integrally involved in the development of industrial pretreatment programs for major POTWs in Baltimore-Washington metropolitan area. Diverse engineering experience related to site remediation feasibility studies, remedial design/remedial action implementation, water supply, and water and wastewater treatment.

Credentials

B.A., *Cum Laude* Biology/Chemistry, Western Maryland College, 1977
 M.S., Civil Engineering (Environmental Engineering option), University of Maryland, 1982
 Courses in Environmental Laws & Regulations (Government Institutes, 1989), and Ground Water Pollution & Hydrology (Princeton Associates, 1985)
 OSHA 1910.120 Certified

Professional Registrations/Affiliation

Certified Hazardous Materials Manager (CHMM) (Master Level)
 American Society of Civil Engineering
 Water Environment Federation

Key Projects

Managed expanded site inspection (ESI) and removal action for PCB-contaminated media at a large naval station in Montgomery County, Maryland. Project involved extensive sampling and analyses at 10 waste sites and preparation of an engineering evaluation and cost analysis (EE/CA) for removal action. Also assisted in the organization of the facility's Technical Review Committee (TRC) and routinely serve as technical leader for TRC meetings.

Managed RI/FS activities at two State of Maryland Superfund sites, both involving VOC contamination in soils and ground water. Also assisted in the design, installation and operation of an interim remedial measure (IRM) consisting of a dual vacuum extraction system designed to treat source area contamination at both sites.

Managed all RD/RA activities at a former wood-preserving facility on the NPL within EPA Region III. Final remedy consisted primarily of capping in place the surface soils which had been contaminated by chromated copper arsenate (CCA). All remedial actions were completed in summer of 1993 and project is now in long-term monitoring to support EPA's 5-year review and possible delisting.

Managed the U.S. Army's Superfund program (IRP) at numerous Army properties, with studies ranging from preliminary assessments/site inspections (PA/SI), through remedial investigations/feasibility studies (RI/FS) and remedial actions.

(continued over)



**Professional Registrations/Affiliation
(continued)**

Member of Remediation Technologies
Committee for the Baltimore City
Brownfields Redevelopment Council

Publications

Papers and presentations on topics including:
"Superfund Remedy Selection - Still Evolving,
Still Improving" (Shepard's Expert and Scientific
Quarterly, Summer 1994); "Enhancing Public
Relations in the DOD Superfund Process"
(ADPA Annual Conference); and "Managing
Industrial Pretreatment Sludges in the Solid
Waste Management System" (Mid-Atlantic
Industrial Waste Conference).

Co-authored numerous technical reports related
to site remediation water quality evaluations.

Key Projects (continued)

Branch manager supervising a group of 10
multidisciplinary scientists/engineers in the
execution of an Army Superfund program.

Served as agency spokesperson at DOD and DA
level briefings, public meetings, and interagency
agreement negotiations (IAGs).

Responsible for the technical aspects of
environmental service contracts totaling over \$5
million/year.

Served as technical liaison between Government
Contracting Office and environmental services
contractors (COR authority).

Served as primary technical agent during
procurement of Army's Total Environmental
Program Support (TEPS) contract, a 5-year
contract with an anticipated value of more than
\$200 million.

Prepared technical scopes of work, cost
estimates, sampling and analysis plans, and
technical reports.

Maintained familiarity with environmental
regulations and interfaced with regulatory
agencies.

Managed the environmental review phase
(Phase II) of a licensing procedure before the
Maryland Public Service Commission for a
proposed 230 MW Non-Utility Generator
Cogeneration Facility. Also provided lead
engineering support to client for two of the more
contentious aspects of the case 1) use of treated
wastewater for cooling water; and 2) design and
safety issues associated with the facility's
natural gas pipeline. Provided expert testimony
to support engineering findings.

Project manager and/or lead engineer for the
development of industrial pretreatment
programs for major POTWs in the Baltimore-
Washington metropolitan area, including the
Washington Suburban Sanitary Commission
(WSSC), the District of Columbia, the City of
Baltimore, and Baltimore County.

AR300777

Marilyn A. Hewitt, P.G.

Registration

Certified Professional Geologist, State of Indiana

Fields of Competence

Contaminant hydrogeology in coastal plain, glacial, bedrock environments
 Ground water monitoring
 Site investigations, risk assessments, feasibility studies, and remediation under Superfund, RCRA, ECRA, etc.
 Technical applications for ground water recovery/treatment
 DNAPL assessments
 Soil remediation
 Siting studies for waste disposal/management facilities
 Regulatory negotiation and compliance
 Litigation support and expert testimony

Experience Summary

More than 20 years of experience in contaminant hydrogeology, and investigation and remediation of contaminated sites.

Pennsylvania DER, 1972-1981: Conducted investigations of ground water contamination from a wide variety of sources; determined remediation requirements. Determined ground water monitoring requirements for landfills, surface impoundments, tanks, land treatment facilities. Evaluated permit applications for public water supply wells. Expert testimony.

ERM, 1981 - present: Developed ERM's Total Cost Management strategy for site remediation projects. Designed, implemented and managed numerous hydrogeologic and soil investigations at industrial facilities, sanitary landfills, hazardous waste disposal areas. Designed and managed Superfund RI/FS for PRPs at five NPL sites; RD at three sites. Worked with numerous PRP groups on HRS, RI/FS, Work Plan, ROD, RD/RA strategies, oversight and litigation. Conducted technical negotiations with: USEPA Regions I, II, III and the NY, NJ, PA, OH, DE agencies for work plans, remedial actions, consent orders, permits. Developed and negotiated soil cleanup levels based on human health risk assessment, and ground water protection. Developed and implemented soil remediation for VOCs, SVOCs, pesticides, PCBs, metals.

Key Projects

Designed and directed Superfund RI/FS and RD activities for former hazardous waste treatment facility in New Jersey where sludges, metals and volatile organics migrated from lagoons into soils, ground water, and surface water.

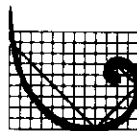
Conducted ECRA investigation, remedial design, remedial action for an industrial site with high-level solvent/DNAPL contamination in New Jersey. Implemented ground water recovery system in fractured bedrock aquifer.

Directed major remediation of a New Jersey site where soils/ground water were contaminated with pesticides and solvents. Negotiated surface soil cleanup levels based on human health risk assessment, and deep soil cleanup levels based on ground water protection. Directed ground water recovery system on-site, to contain both on-site and off-site contamination. Approved by NJDEP.

Designed and conducted RI/EA/FS at NPL site at which coal tar DNAPL was present in ground water adjacent to a trout stream. Evaluated extent of mobile vs. residual coal tar. Directed human health and ecological risk assessments, accepted by USEPA, which concluded no significant risks. Conducted feasibility study recommending only limited action and monitoring.

Designed and directed removal action/interim remedy evaluation at Superfund site in Maryland, where solvents and DNAPLs are present in overburden, bedrock, stream and stream sediments. Proposed remedy of stream-lining, due to technical infeasibility of DNAPL removal. Approved by USEPA.

(continued over)



ERM

Experience Summary (continued)

Designed and implemented ground water monitoring programs at RCRA and non-RCRA facilities. Designed and implemented RCRA ground water assessment, corrective action, facility closure. Designed and implemented ground water recovery systems in fractured bedrock and unconsolidated aquifers. Performed hazardous waste facility siting studies for states and private industrial clients. Conducted assessments of environmental conditions for property sales/acquisitions. Conducted on-site soil remediation programs. Prepared expert reports and affidavits, presented expert testimony in court for Superfund matters, toxic torts, private party lawsuits.

Credentials

B.S., Geology, University of Wisconsin, 1968
Graduate studies in Geology, SUNY/Buffalo, 1970-1972

Professional Affiliation

Member, Association of Ground Water Scientists and Engineers

Key Projects (continued)

Designed and directed Superfund RI/EA/FS and RD at the site of a former metal reclamation operation, where wire insulation containing lead, PCBs was disposed on-site. Directed risk assessment, and feasibility study on remedial action alternatives for waste pile, soils, ground water, surface water.

Conducted RCRA ground water assessment, designed and implemented ground water corrective action, soil remediation, and closure at industrial wastewater impoundments in New York.

Designed and conducted state Superfund investigations, risk assessments, and feasibility studies at two abandoned PCB/oil/solvent disposal sites in New York state.

Key Projects (continued)

Designed and conducted a hydrogeologic investigation and feasibility study for remediation of solvent contamination at a manufacturing facility in Pennsylvania. Completed RI/FS, risk assessment, RD. Proposed remedial actions, including ground water recovery/treatment from shallow trench with existing production wells, and cost-effective, on-site soil remediation. Approved in USEPA ROD.

Developed statewide hydrogeology siting criteria and site evaluation standards for hazardous waste facilities in the state of Delaware.

Designed and conducted hydrogeologic investigation for an abandoned unlined municipal landfill and an adjacent operating landfill in Pennsylvania. Developed and implemented remedial action plans.

Conducted post-ROD review of costly soil incineration remedy at Superfund site in PA where wastes were disposed in unlined impoundments. Represented PRPs sued by USEPA for past and future costs. Testified in Federal Court as to serious flaws in RI/FS, remedy. Led risk assessment, feasibility study to support containment remedy. Result: USEPA agreed to settlement terms proposed by PRPs.

Directed oversight of EPA RD at a municipal landfill NPL site, prompting USEPA to redesign cap for cost savings of several million dollars. Prepared affidavits and made presentation to court for defense of PRPs against summary judgment motion for cost recovery. Result: Agency and PRPs settled.

Prepared expert report and presented expert testimony at trial for defense against third party cost recovery action under CERCLA. Jury verdict: no award to plaintiff.

AR300779

Robert W. Keating, P.G.

Registration

Certified Professional Geologist in Virginia

Fields of Competence

Geology

Hydrogeology

Project management as applied to the design and implementation of remedial investigations of organic, inorganic, and petroleum product ground water contamination

Design and implementation of remedial actions

Evaluation of hydrogeologic conditions underlying proposed and existing power plant sites, combustion by-product disposal sites, and coal storage piles

Experience Summary

More than eleven years of hydrogeology experience with environmental consulting firms. Performed and directed hydrogeologic investigations to assess the environmental effects of hazardous waste sites, proposed or existing power plant combustion by-product disposal sites, and coal storage and coal refuse piles. As a program manager for large state regulatory client, responsible for providing management for evaluating engineering and environmental issues associated with electric power generation in Maryland.

Credentials

B.S., Geology, Lehigh University, 1982

M.S., Geology, Lehigh University, 1983

Professional Affiliation

Association of Ground Water Scientists and Engineers - NWWA

Publications

Co-authored paper for presentation at the International Symposium on Management of Hazardous Chemical Waste Sites, October 1985.

Authored and co-author of two chapters for the 1988 Maryland Power Plant Cumulative Environmental Impact Report, an NTIS publication.

Key Projects

Conducted a ground water investigation to determine the horizontal and vertical extent of organic solvent contaminant migration through a fractured shale bedrock aquifer.

Conducted pump test of two high yield municipal production wells and evaluated impact of interesting cones of depression on the migration of organic contaminants through a valley train aquifer system.

Conducted preliminary field investigations of Superfund NPL and non-NPL sites under the direction of the U.S. EPA. Defined the extent of ground water, surface water, and soil contamination.

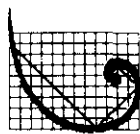
Evaluated the regional effects of high yield production well withdrawals on two Coastal Plain aquifers.

Conducted a performance evaluation of a site utilizing combustion by-products as structural fill. Evaluated water quality data to determine the effect of this site on local ground water and surface waters, and compared site performance with other conventionally designed combustion by-product disposal sites.

Conducted an assessment to define the extent of copper contamination in production wells tapping a confined aquifer in Baltimore.

Determined the inorganic attenuative capacity of shallow soils at a proposed power plant site to assess their ability to mitigate potential contaminants leached from on-site coal storage piles and combustion by-product landfills.

(continued over)



ERM

Key Projects (continued)

Assessed the impact of No. 2 fuel oil on New Jersey Coastal Plain sediments.

Managed and conducted hydrogeologic investigation and risk assessment of coal refuse pile in western Pennsylvania for property transfer.

Designed and supervised remedial investigation to delineate the extent of organic soil and ground water contamination for an industrial facility in Baltimore.

AR300781

Bruce Molholt, Ph.D.

Fields of Competence

Toxicology
 Risk assessment
 Carcinogenesis
 Bioremediation
 Biotechnology
 Expert testimony
 Tutelage/public presentation

Experience Summary

Principal and Director of ERM Risk Assessment and Toxicology Programs since 1988. Superfund toxicologist for EPA Region III for 4 years. Taught risk assessment to federal and state employees. Advised EPA headquarters concerning chemical carcinogenesis. Developed innovative programs in biotechnology and indoor air pollution by termiticides for EPA Region III. Over past 15 years, appeared as expert witness in over 50 court cases. Extensive experience in university research and teaching both in U.S. and abroad.

Credentials

B.A., Mathematics, Hendrix College, 1962
 M.S., Microbiology, University of Arkansas School of Medicine, 1964
 Ph.D., Microbiology, Indiana University, 1967
 Postdoctoral studies in Molecular Genetics, Karolinska Institute, Stockholm, 1967-69; University of Ghent, 1972-73; University of Heidelberg, 1974-75

Professional Affiliation

Society of Risk Analysis (Philadelphia Chapter President)
 University of Pennsylvania (Adjunct Professor)
 American College of Toxicology (Full member)
 Society of Toxicology (Full member)
 Environmental Mutagen Society (Full member)
 American Chemical Society (Full member)

Publications

Peer-reviewed papers in toxicology and molecular genetics
 Fifty abstracts and symposia presentations
 Numerous articles on carcinogenesis and environmental health
 Book chapters on risk assessment and toxicology

Key Projects

Crafted a mathematical model for the Maryland Power Plant Research Program to calculate synergistic interactions of initiating and promoting carcinogens (received the American Society of Toxicology 1990 award for innovative risk assessment for this work).

Oversight of all ERM risk assessments and teaching risk assessment methodology.

Contributed position papers for various sites with unique toxicologic problems.

Coordinated the writing of over 80 toxicologic profiles for the Hardage site in Oklahoma.

Awarded a contract by Kelco, a division of Merck in San Diego, CA, to establish the most fitting pharmacokinetic model from which to extrapolate propylene oxide metabolism in experimental animals for risk assessment in humans.

Performed national risk assessment for homes treated with chlordane and heptachlor.

Developed several ambient air quality guidelines for City of Philadelphia Right-to-Know Act (received American Society of Public Administration Public Service Award for this work in 1983).

Wrote risk assessments for several large and innovative projects: Maryland Power Plant Research, TMI Public Research Fund, Mouse Liver Tumor Assay Project of Risk Assessment Forum, etc.

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Honors and Awards

Blue Key National Honor Fraternity, Hendrix College
Engineering Scholarship, Columbia University
Sigma Xi Outstanding Research Award, University of Arkansas School of Medicine
Predoctoral Fellow of US Public Health Service
Postdoctoral Fellow of US Public Health Service
Short-term Fellow of European Molecular Biology Organization, University of Leiden, The Netherlands
Postdoctoral Fellow of NATO and Belgian-American Foundation, University of Ghent, Belgium
Exchange Scientist of National Academy of Sciences
Award for Excellence in Public Administration, American Society for Public Administration
Special Achievement Award, US Environmental Protection Agency
Award for Innovative Risk Assessment, Society of Toxicology

Key Projects (continued)

Expert witness for plaintiff in EPA vs. Orkin, the largest case successfully litigated under FIFRA as of 1987. Toxin = sulfuryl fluoride (Vikane™).
Expert witness for plaintiff in EPA vs. SEPTA, Amtrak and Conrail concerning PCB contamination at the Paoli Rail Yards, Paoli, PA.
Expert witness for plaintiff in EPA vs. Frank Tyson concerning contamination of Tyson's Lagoons by 1,2,3-trichloropropane.
Expert witness for plaintiff in DOJ vs. PRPs in Tybouts Corners case. Many toxic chemicals were assessed for potential human health and environmental endangerment.
Expert witness for plaintiff in DOJ vs. PRPs in Cecil County Landfill case. Primary toxic chemicals were halogenated solvents and metals.
Expert witness for defendant in Kreamer Municipal Well Litigation, a class action concerning alleged risks from benzene in the municipal water supply.
Expert witness for defendant in Atlas Metal vs. Air Products & Chemicals, Denver, CO. Main contaminants of concern = background levels of PAHs.

Key Projects (continued)

Expert witness for defendant in Tri-County Business Campus case, Third District Court, Philadelphia. Main contaminants were phthalates and styrene.
Expert witness for defendant in Kocher vs. Lincoln and Hobart, Reading, PA. Plaintiff alleged parkinsonian condition induced by workplace manganese.
Expert witness for plaintiffs in TMI personal injury lawsuits alleging toxic sequelae as a result of radionuclide releases during the 1979 accident.
Expert witness for defendant in Wildewood, SC, cases alleging property damage and personal injury from exposure to TCE.
Expert witness for defendants in US Radium case involving attempted cost recovery for multiple losses from insurance carriers.
Expert witness for defendants in Tecumseh case involving attempted cost recovery for PCB contamination of the Sheboygan River.
Expert witness for toxicities resulting from exposure to the following radionuclides: tritium; cobalt-60; krypton-85; iodine-131; radon-222; radium-226; and americium-241.
Expert witness in several personal injury lawsuits, including toxicities resulting from exposures to the following substances: benzene; benzo(a)pyrene; carbon monoxide; chlordane; formaldehyde; heptachlor; hydrogen sulfide; manganese; 4-methyl-*m*-phenylenediamine; sulfuryl fluoride; 2,3,7,8-tetrachlorodibenzo(*p*)dioxin; and trichloroethylene.
Expert witness in several worker's compensation cases, for health effects from exposure to the following toxic substances: benzene; bis(2-chloromethyl)ether; cadmium; chlordane; formaldehyde; heptachlor; hexavalent chromium; trichloroethylene; and 2,4,5-trichlorophenoxyacetic acid.
Expert witness for human diseases resulting from exposure to and infection by the following micro-organisms: *legionella pneumoniae*; *salmonella typhimurium*; and *cryptosporidium*.

AR300783

Robert L. Dwyer, Ph.D.

Fields of Competence

Water resources analysis of freshwater and marine systems
 Exposure/risk assessments involving public health and natural resources
 Transport and fate modeling of toxic and conventional pollutants
 Statistical sampling design and data analysis
 Site assessment and permitting of major facilities

Experience Summary

More than twenty years' experience with private industry and government, technical experience in quantitative environmental assessments for releases of conventional pollutants, toxicants and genetically-engineered microorganisms, major facilities siting and impact (fossil-fuel and hydroelectric power plants, and offshore and coastal petroleum facilities), discharges of mine tailings, sewage, and industrial effluents; and public health and ecological risks of hazardous materials.

Credentials

S.B., S.M., Biology, Massachusetts Institute of Technology, 1973
 Ph.D., Oceanography, Graduate School of Oceanography,
 University of Rhode Island, 1980

Professional Affiliation

International Society of Ecological Modeling
 Society of Environmental Toxicology and Chemistry
 Estuarine Research Federation
 American Society of Limnology and Oceanography

Key Projects

Managed PRP review of agency's RI/FS for a lake in SC/GA contaminated by PCBs. Tasks included critical reviews of the agency Work Plan, Public Health Assessment; a comprehensive critique of the RI, Risk Assessment, and FS reports, with focused reanalysis of ecological risks; resampling of fish and sediments with analysis of PCB congeners.

Risk Assessment Manager for an RI/FS for a landfill contaminated by mixed hazardous/radioactive wastes. In addition to considering human health issues, the risk assessment examined the migration of contaminants into a wetland, and subsequent risks to aquatic biota.

Risk Assessment Manager for a soil, ground water, and surface water remediation project at an aerospace plant in Annapolis, MD. Calculated soil cleanup levels from applicable requirements (ARARs) and risk-based acceptable concentrations for potential off-site exposures.

Developed standardized methods for measuring and comparing the degrees of validation, and levels of prediction uncertainty of all EPA exposure model packages (for the Exposure Assessment Group of EPA's Office of Research & Development).

Managed various tasks from the Exposure Assessment Branch of the EPA Office of Toxic Substances, including the modeling of discharges of a genetically-engineering micro-organism (GEM) into a river serving as a municipal water supply, and a review of the applicability of various models for simulating the release of dioxin compounds from landfills.

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Key Projects (continued)

Managed an integrated risk assessment for the Maryland DNR, PPER Division. Completed a preliminary definition of exposure pathways due to plant emissions, and developed a worst case characterization for a hypothetical maximally exposed individual near the site as part of a year-long risk assessment associated with planned development at PEPCO's Dickerson Generating Station.

Implemented an Endangerment Assessment performed as part of an RI/FS for a confidential client in east central Pennsylvania. For the ecological risk assessment, negotiated with NOAA on the design and interpretation of chronic bioassays using leachate and water from a nearby stream.

Contributed to the design of stream sampling for a Remedial Investigation at Union Carbide Corp.'s Possumtown Road Dumpsite in Bound Brook, NJ. Performed statistical power analyses to define the minimum number of water samples needed to detect a reduction in leaching from the dump into an adjacent stream.

Developed simulation models of water flow and water quality in the Susquehanna River downstream of the Conowingo Hydroelectric Plant.

Managed a study of base flow hydrology in two tributaries of the Gwynns Falls (Baltimore County, MD) as part of an urban nonpoint-source discharge abatement program.

Managed an environmental data base management group; initially supervised a subcontractor in the selection of a DBM system; later, supervised the data base manager and programmers loading and retrieving 2,000 files for clients.

Managed a waste load allocation modeling study of the combined effects of domestic sewage and power plant blowdown discharges on a shallow tributary of the Chesapeake Bay.

Prepared and presented written and oral expert testimony on water resources issues, including stormwater management and wetlands.

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Patrick McManus (3HW21)
Remedial Project Manager
US EPA - Region III
841 Chestnut Building
Philadelphia, PA 19107-4431

A handwritten signature in black ink, appearing to be 'M' or 'N'.

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