United States
Environmental Protection
Agency

Office of
Solid Waste and
Emergency Response
Washington, DC 20460

Office of Research
and Development
Washington, DC 20460

Superfund

EPA/540/F-92/006

EPA

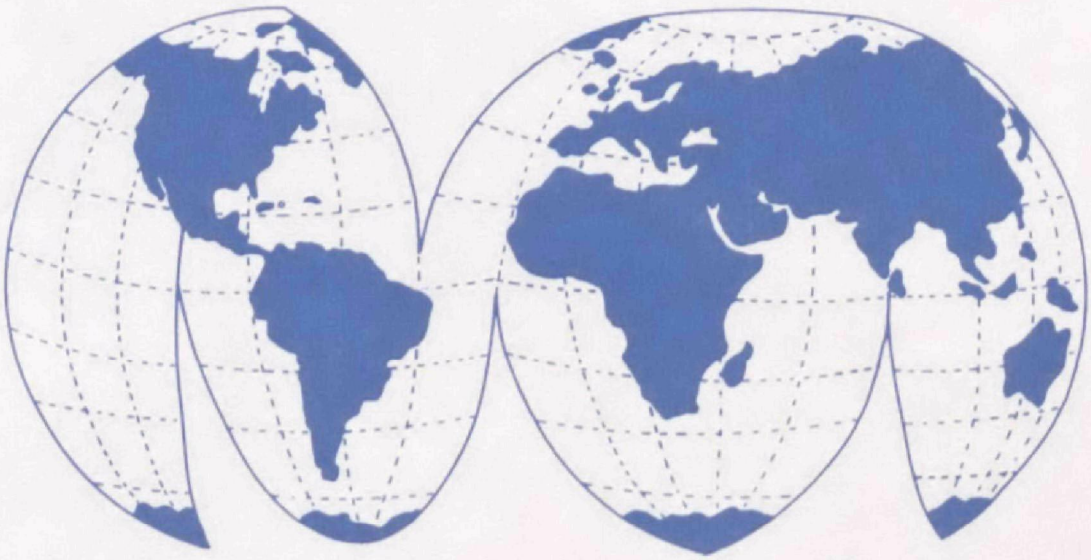
Fourth Forum on Innovative Hazardous Waste Treatment Technologies: Domestic and International

CAL/EPA

San Francisco, California

The Westin - St. Francis

November 17 - 19, 1992



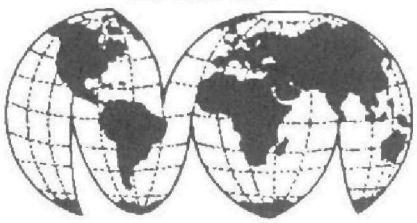
Conference Goals

The purpose of the conference is to help introduce promising innovative domestic and international hazardous waste treatment technologies through technical paper and poster displays, to showcase results of the U.S. EPA Superfund Innovative Technology Evaluation SITE Program and the CAL/EPA Demonstration Program, and to present selected case histories of DOE and USACE innovative technology applications. The overall aim is to increase awareness in the user community of technologies ready for application.

The conference consists of presentations of technical papers and posters by international and domestic vendors of technologies for the treatment of hazardous wastes, including sludges, groundwater, and soils. Selected case studies will also be presented, providing results of application of innovative technologies in real-life situations.

Jointly conducting this conference are:

- U.S. Environmental Protection Agency (EPA)
  - Technology Innovation Office
  - Risk Reduction Engineering Laboratory
  - Region IX
- California Environmental Protection Agency (CAL/EPA)
- U.S. Department of Energy (DOE)
- U.S. Army Corps of Engineers (USACE)



Printed on Recycled Paper

Registration Information

There is no fee to attend the conference. However, registration will be limited and filled on a first-come, first-served basis. Please fill out the registration form included in this brochure and return to SAIC by Friday, October 23, 1992. Confirmation notices will be sent to each attendee with additional travel details.

Field Trip

A field trip to McClellan Air Force Base and the Sacramento Army Depot is being offered on Wednesday, November 18. The bus will leave the hotel at 8:00 AM and arrive at McClellan AFB at approximately at 10:00 AM. The tour will begin with visits to the Base's Bio-Slurry Reactor and Land Treatment pilot facilities and end with a visit to the Soil Vapor Extraction Facility where installation/construction will be in progress. Luncheon (cash basis) will be served in the Base's Officer's Club where the Commanding General at McClellan will deliver his welcoming remarks. The tour of Sacramento Army Depot will begin with the Base's Ultra-Violet Oxidation Ground Water Treatment Plant and end with a visit to the Tank-2 Soil Vapor Extraction System. The bus will return to the hotel at approximately 5:00 PM.

Participation is limited; reservations will be accepted on a first-come, first-served basis. Individuals must pre-register for this trip by filling out the Field Trip Reservation Form provided in this brochure and returning it to SAIC by October 9, 1992. Your reservation will be confirmed by mail.

The cost of the trip is $8/person and must be included with your reservation form. This fee does not include lunch, which will be on a cash basis.

Who Should Attend

The target audience for the conference includes EPA Regional and State Agency staff, Federal, state, and private clean-up contractors, potentially responsible parties, facility owners/operators, vendors of hazardous waste control technologies, DOE and DOD representatives, and others who may be interested in commercial interaction with domestic and international companies.

Poster Sessions

Posters from EPA's Superfund Innovative Technology Evaluation SITE Programs will be on display at the two evening Poster Sessions/ Receptions. Posters from international vendors will also be on display, providing attendees with an opportunity to interact with the vendors of these innovative technologies.

In addition, EPA and other Federal and state agencies will be showcasing current publications and data bases related to remediation of uncontrolled hazardous waste sites. Video presentations of SITE demonstrations will be ongoing throughout the conference.

Proceedings

EPA will publish an Abstract Proceedings following the conference. This will consist of abstracts of the paper and poster presentations. Each attendee will be mailed a copy.

Hotel Information

Arrangements have been made with the Westin-St. Francis Hotel in San Francisco to reserve a block of rooms for conference attendees at the following special rates:

Conference Rate	**$135 (Single)**	**$150 (Double)**
Government Rate*	**$92 (Single)**	**$121 (Double)**

*** These rates do not include the 11% city hotel tax. Government employees will be exempt from the 11% tax by providing government ID, by paying with a government-issued credit card or purchase order, and by filling out a form provided by the hotel on site.**

The rooms will be assured up to Friday, October 23, 1992; after that, rooms will be assigned by the hotel on a space-available basis only.

Room reservations are to be made directly with the hotel:

The Westin-St. Francis Hotel
335 Powell Street
San Francisco, CA 94102
Telephone: (415) 397-7000
Fax: (415) 774-0124 Telex: 278584

Be sure to mention that you are attending the EPA Forum on Innovative Technologies so that you will qualify for the special room rate.

U.S. EPA Project Officer:
Dr. Thomas R. De Kay — (703) 308-8798
U.S. EPA, Technology Innovation Office

Registration Form

EPA Fourth Forum on Innovative Hazardous Waste Treatment Technologies: Domestic & International

Please print clearly or attach business card

Name _____

Affiliation _____

Address _____

City _____

State _____ Zip _____

Country _____

Telephone _____

Fax _____

DUE DATE: OCTOBER 23, 1992
(You will be sent a letter confirming your registration)

Please mail to:

SAIC
Technology Transfer Dept.
501 Office Center Drive, Suite 420
Fort Washington, PA 19034
Telephone: (800) 783-3870 or (215) 628-9317
Fax: (215) 628-8916

FIELD TRIP RESERVATION FORM • (Due Date October 9, 1992)

Wednesday, November 18, 1992 • 8:00 AM - 5:00 PM

Name _____

Company _____

Address _____

City _____ *State* _____ *Zip* _____

Country _____ *Passport #* _____

non-U.S. residents only

(Space is limited, reservations will be filled on a 1st-come, 1st-served basis. You will be sent a letter confirming your reservation.)

COST $8.00 Please make check payable to SAIC and include with reservation form

Proposed Conference Agenda

Tuesday, November 17

Plenary Session

8:30 AM Welcome Remarks

Dr. Walter W. Kovalick, Jr., Director, Technology Innovation Office, Office of Solid Waste and Emergency Response

Robert A. Olexsey, Director, Superfund Technology Demonstration Division, Risk Reduction Engineering Laboratory

Plenary Speakers

John Wise, Deputy Regional Administrator, Region IX

Brian A. Runkel, Deputy Secretary, Regulatory Improvement, California Environmental Protection Agency

Don Clay, Assistant Administrator, Office of Solid Waste and Emergency Response

Erich Bretthauer, Assistant Administrator, Office of Research and Development

Dr. Donald Alexander, Office of Environmental Restoration and Waste Management, Department of Energy

Biological Treatment

Moderator: Fran Kremer, U.S. EPA, Center for Environmental Research Information

ABR-CIS' Bioremediation: An Effective System for In-Situ Sludge Volume Reduction and Pollutant Biodegradation in Harbours and Waterways
B. Malherbe, Harbour Engineering Consultants, Belgium

In-Situ Bioventing of a Diesel Fuel Spill
T.L. Bulman, Campbell Environmental, Australia

Membrane Separation and Bioremediation SITE
J. Muller, SBP Technologies, Inc., USA

Biological Treatment, cont'd

Bioslurry Reactor SITE
William Mahaffey, ECOVA Corporation, USA

The Design Criteria and Economics of Operating a Full-Scale Above Ground Bioremediation Facility for the Treatment of Biphenyl/ Diphenyl Oxide Contaminated Soil (CAL/EPA),
Robert Mall, KJC Operating Co. USA

MODERATOR: DEBORAH GRISWOLD, U.S. EPA, REGION VI

Biopur, An Innovative Bioreactor for the Simultaneous Treatment of Groundwater and Soil Vapour Contaminated with Xenobiotic Compounds
J.M.H. Vijgen, TAUW Infra Consult bv, The Netherlands

Optimizing Bioventing in Shallow Vadose Zones and Cold Climates: Eielson AFB Bioremediation of a JP-4 Spill
Gregory D. Sayles, U.S. EPA, Risk Reduction Engineering Laboratory

Bioremediation Technology SITE
Paul Groves, Bio-Rem, Inc., USA

Bioremediation of Soils at a Waste Oil Facility
Gary Guerra and John Matthews, Robert S. Kerr Environmental Research Laboratory, U.S. EPA, USA

5:00 PM **POSTER SESSION/COCKTAIL RECEPTION (CASH BASIS)**

Wednesday, November 18

Thermal Treatment

MODERATOR: DON SANNING, U.S. EPA, RISK REDUCTION ENGINEERING LABORATORY

8:30 AM Low Temperature Thermal Treatment (LT3R) SITE
Mike Cosmos, Weston Services, Inc. USA

Plasma Arc Vitrification SITE
Richard C. Eschenbach, Retech, Inc., USA

Anaerobic Thermal Processor SITE
Martin Vorum, SoilTech, Inc., USA

Cyclone Furnace SITE
Lawrence King, Babcock & Wilcox, Inc., USA

Thermal Gas-Phase Reduction of Organic Hazardous Wastes in Aqueous Matrices
Douglas Hallett and Kelvin Campbell, Eco Logic, Canada

Physical/Chemical Treatment

MODERATOR: JIM ALLEN CAL/EPA, DEPARTMENT OF TOXIC SUBSTANCES CONTROL

BioGenesis Soil Cleaning Process SITE
Charles Wilde, BioGenesis Enterprise, Inc., USA

Steam Injection and Vacuum Extraction (SITE and CAL/EPA)
John Dablow, Hughes Environmental Services, Inc., USA

Soil Venting to Remove DBCP from Subsurface Soil: A Case History (CAL/EPA)
M.B. Bennedean, Woodward-Clyde Consultants ,USA

Soil Washing Technology SITE
Rick Traver, Bergmann USA, USA

MODERATOR: MARGARET KELLY, U.S. EPA, TECHNOLOGY INNOVATION OFFICE

5 Years Operational Experience with the Harbauer Soil Washing Plants
Winfried Groschel, Harbauer GmbH & Co. KG and Hans Balthaus, Phillipp Holzmann AG, Germany

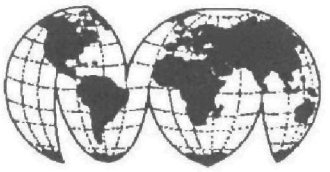
Effective Cleanup of Subsurface Contamination Using Vacuum Extraction
J.J. Malot, Terra Vac, USA/Germany

Physical/Chemical Treatment, cont'd

Field Demonstration of Soil Washing at the King of Prussia Superfund Site
Michael Mann, Geraghty & Miller, Inc., USA/The Netherlands

Soil Washing with Water Under High Energy Input Commercial Experience with the Lurgi Deconterra Process
Ted J. Pollaert, Lurgi Corporation, Germany

5:00 PM **Poster Session/Cocktail Reception (cash basis)**



Thursday, November 19

Case Studies - Sessions A & B - Concurrent Sessions

SESSION A

Moderator: Vance Fong, U.S. EPA, Region IX

8:30 AM Radiolytic Remediation of a TCE Ground Spill Using an Electron Accelerator
Stephen M. Matthews, Lawrence Livermore National Laboratory, USA

Rethinking the Hydraulic Cage Concept for Hazardous Waste Disposal Facilities and the Mitigation of Contaminated Sites
Charles Voss, Golder Associates, Inc., USA/Sweden

Melt Refining: The Best Practicable Technology for RSM Recycling
Sam Chatterjee, Advanced Polllution Technology, Inc.,USA/Sweden

Concurrent On-Site Testing of UV/Oxidation Systems at a Superfund Site
Ted H. Streckfuss, U.S. Army Corps of Engineers, USA

Remediation of Groundwater Contaminated with Volatile Organic Compounds in the Saturated Zone at a California Superfund Site in Mountain View, California (CAL/EPA)
R.F. Battey, Aqua Resources, Inc. , USA

SESSION A CONT'D

MODERATOR: GREG WILLIAMS, CAL/EPA, DEPARTMENT OF TOXIC SUBSTANCES CONTROL

Soil Washing as a Remedial Option at a Former Gun Club Site in Folsom, Sacramento County, CA
Chris Parent, California Department of Toxic Substances Control CAL/EPA, USA

Treatment of Petroleum Refinery Wastewater Containing Seawater by Bio-Oxidation Tower/Treatment of Coke Plant Wastewater by Bio-Oxidation Tower
Zhou Hiti, Dalian University of Technology, China

Results of Prototype Studies for In Situ Containment Using a Bentonite - Paraffin Sealant
Charles Voss, Golder Associates, Inc., USA/Germany

Potential Application of the Ukrainian Grouting Technology in the Environmental Restoration Area
Tilak R. Verma, Morrison Knudsen Corporation, USA/Ukraine

Evaluation of Ukranian Grouting Technology: DOE Perspective
Art Ducharme, Sandia National Laboratories, USA/Ukraine

SESSION B

MODERATOR: PAUL HADLEY, CAL/ EPA, DEPARTMENT OF TOXIC SUBSTANCES CONTROL

8:30 AM Case Study: Membrane Microfiltration SITE
Ernest Mayer, E.I. DuPont de Nemours and Company, USA

Composting of Explosives-Contaminated Soils at the U.S. Army Depot Activity, Umatilla
Captain Kevin R. Keehan, U.S. Army Toxic & Hazardous Materials Agency, USA

Advance, High-Pressure Water Jet Technologies Using Tele-Robotics for the Treatment and Demilitarization of Ordnance at Hazardous Sites on Active and Former Military Installations
James R. Watford, Talon Ordnance Technologies, Inc., USA

SESSION B CONT'D

The Bilateral Agreement Between the U.S. EPA and the German BMFT
G. Bererich, Arbeitsgemeinschaft focon - PROBIOTEC, Federal Republic of Germany

Groundwater Remediation: Extraction and Removal of TCE and Cr^{6+} at an NPL Site
Subijoy Dutta, U.S. EPA, Office of Solid Waste, USA

MODERATOR: DONNA KURODA, U.S. ARMY CORPS OF ENGINEERS

Jet Fuel Contaminated Groundwater Remediation Using Horizontal and Vertical Well Recovery Systems and Air Stripping Treatment at Williams Air Force Base, Arizona
William B. Lopp, U.S. EPA, Region IX, USA
Daniel B. Oakley, HAZWRAP, USA

Evaluation of Thermal Extraction Technologies for Treatment of Soils Contaminated with Coal Tars and Wood Preservatives at the Pacific Place Site, Vancouver B.C.
John Kinsella, SCS Engineers, USA/Canada

Case Study: Solvent Extraction SITE
Chris Shallice and William McGovern, CF Systems Corporation, USA

Commercialization of Innovative Technologies Bench-to-Pilot-to-Full Scale
Frederic A. Eidsness, Jr., Canonie Environmental Services Corp., USA

Bioremediation of Chromium (VI) Contaminated Solid Residues Using Sulfate Reducing Bacteria
Louis J. DeFilippi, Allied-Signal Research and Technology, USA