

SUMMARY
FEDERAL REMEDIATION TECHNOLOGIES ROUNDTABLE

System Planning Corporation Building
Rosslyn, Virginia
June 3, 1993

Introduction

Roundtable Chairman Dr. Walter W. Kovalick, Jr., Acting Deputy Assistant Administrator of EPA's Office of Solid Waste and Emergency Response (OSWER), opened the meeting and welcomed all participants.

Roundtable agencies represented by meeting participants included:

U.S. Dept. of Defense (DoD)
U.S. Department of Energy (DOE);
U.S. Department of Interior (DOI), Bureau of Mines;
U.S. Department of Interior (DOI), U.S. Geological Survey (USGS);
U.S. Air Force (USAF);
U.S. Navy (USN);
U.S. Army Corps of Engineers (USACE);
U.S. Army Environmental Center (USAEC); and
U.S. Environmental Protection Agency (EPA).

A complete list of participants and other attendees is included as an attachment to this summary.

Dr. Kovalick indicated that the U.S. Coast Guard has expressed interest in joining the Roundtable. He said the Coast Guard is looking at innovative technologies for application at its sites and is considering its own technology development effort. A representative of the Coast Guard was present as an observer at the meeting.

Dr. Kovalick reminded participants that, at the Fall 1992 meeting, he agreed to follow-up on an assistance request received from the State of California relative to the California Base Closure Initiative with the U.S. Department of Defense (DoD). The California technical committee and EPA's Region IX already have provided much of the assistance requested by the State. However, they still would like help in the form of peer review of their recently created remedy matrix. Dr. Kovalick asked members of the Roundtable who would be willing to serve on review panels to contact Dan Powell of EPA's Technology Innovation Office (TIO). He said formal requests for review and comment would be sent to members within the next few weeks. TIO learned subsequently that the request for review probably would be more appropriate within the next month due to the State's schedule for completing the next draft of the matrix.

Dr. Kovalick called attention to a brochure, included in each discussion package, advertising a series of seminars on technologies for remediating sites contaminated with explosive and radioactive wastes. Four sessions are scheduled in July and August, 1993, in Sacramento, California; Dallas, Texas; Newark, New Jersey; and New Carrollton, Maryland. The seminars are cosponsored by the U.S. Army Environ-

mental Center (USAEC) and the EPA Office of Research and Development (ORD). ORD has funding for additional seminars. Dr. Kovalick asked participants interested in additional seminars at other locations to contact Ed Barth at the ORD Center for Environmental Research Information (CERI) at 513/569-7669.

Updating participants on EPA's Public-Private Partnership Project to facilitate full-scale demonstration and evaluation of innovative technologies at Federal facilities, Dr. Kovalick indicated that the partnership project is moving forward at McClellan Air Force Base in California. The partners participated in a ribbon-cutting to formally announce the partnership involving EPA (Region IX, the Office of Federal Facilities Enforcement, ORD, and TIO), California EPA, the U.S. Air Force, Clean Sites, Inc. (the facilitator for the project), and seven private sector companies. EPA is working on developing partnerships at additional sites. Clean Sites and EPA are considering DOE's Pinellas Plant in Florida; a Navy site in Calverton, New York; an Army site at Winfield Locks, West Virginia; and an Air National Guard site at Otis ANG Base on Cape Cod, Massachusetts. Dr. Kovalick indicated that anyone interested in more information should contact Dan Powell of TIO.

Col. Michael Fellows, U.S. Army Corps of Engineers, said the Corps has a partnership agreement with the American Consulting Engineers Council (ACEC) and is developing another with the Hazardous Waste Action Coalition (HWAC) that are aimed at expediting the cleanup process at sites for which the Corps is responsible. He said incorporating the use of innovative technologies is one of the objectives of the agreements, and HWAC has agreed to provide cost and performance data on innovative technologies. The Corps considers this a major step forward in helping to provide the information necessary to encourage more use of innovative technologies. In addition, he said the Corps, ACEC, and HWAC are exploring better ways to speed agency decision-making relative to cleanup and better methods of risk sharing.

Interagency/EPA Policy Initiatives

Melanie Barger, EPA Office of Federal Facilities Enforcement (OFFE), briefly reviewed the overall mission of OFFE and updated participants on the status of several OFFE initiatives. She said OFFE has an important role in promoting the use of innovative technologies for site cleanup but is faced with balancing that with its traditional role of enforcing compliance and cleanup agreements. OFFE has received support for its technology development program from the new Administration and from Congress, most recently as a way to assist in base closure efforts.

OFFE has begun development of an EPA policy statement on incorporating innovative technologies into cleanup and compliance agreements. The intent of the policy is to foster the use of innovative technologies by providing enforcement flexibility. Ms. Barger indicated EPA Regions have commented favorably on an initial draft. Col. Fellows suggested that the statement should cover not only new agreements but also how to deal with innovative technologies relative to existing, long-term agreements already in place. He also suggested that other Federal agencies should have an opportunity to review the document before it is finalized. Col. Jim Owendoff, USAF, supported the suggestion. Ms. Barger explained that OFFE has not made decisions about the scope of other Federal agencies' involvement in generation of the statement. She said that they expect to complete a second draft of the policy statement and to send it out for review in two to three weeks. She does not expect OFFE to include other Federal agencies among reviewers of the second draft. She explained that EPA enforcement officials would not normally circulate proposals of this nature to other Federal agencies but said she would relay the comments and concerns voiced by the Roundtable members to OFFE management.

Ms. Barger briefly outlined the major components of the proposed policy statement. First, the document contains a general policy statement addressing what EPA can do—such as provide flexibility in cleanup schedules—to support and encourage use of innovative technologies, discussing EPA's responsibility for support (*e.g.*, EPA would not punish or blame Federal agencies if an innovative technology doesn't work), and communicating EPA's expectations.

Second, the proposed statement addresses the responsibility of the other Federal agencies. This includes acknowledging that the cleanup must meet statutory (CERCLA) requirements, maintaining full and open communication about the project, and being accountable to EPA and the public. Finally, the proposed statement provides guidance on incorporating the use of innovative technologies into compliance and cleanup agreements, based on actual experience.

Ms. Barger indicated that OFFE's goal is to finalize the policy statement by the end of July. She said they could consider the possibility of issuing it as an “interim final” document, instead of circulating a third draft of the statement for review and comment. Under this scenario, other Federal agencies, as well as the public, would have an opportunity to review and respond to the interim final document during a public comment period.

Bob Bartell, USAEC, asked specifically what measures of accountability would be used. Ms. Barger said they would use the same legal thresholds as currently apply. She said EPA would expect Federal agencies to make “best efforts” to achieve remediation goals using innovative technologies.

Fred Lindsey, EPA/ORD, asked if OFFE expects the proposed policy statement to be controversial with Congress or public interest groups. Ms. Barger explained that OFFE provided the initial draft informally to selected individuals on Capitol Hill and received no negative comments. OFFE also held limited discussions with some public interest groups and received no negative comments.

Col. Owendoff offered additional options that EPA enforcement officials could consider for encouraging the use of innovative technologies. He suggested creating a fund, from fines and penalties imposed on Federal agencies, that could be used to underwrite broader demonstration and use of innovative technologies. Or, OFFE could allow the use of innovative technologies as a tradeoff for a portion of such fines and penalties.

Tom Anderson, DOE/Office of Technology Development, said DOE, which is actively developing technologies, sees Records of Decision (RODs) as obstacles to innovation. RODs generally are not flexible enough to allow better, cheaper, more efficient technologies to be tried if they become available after the ROD has been signed. Mr. Anderson suggested that this is the kind of flexibility that EPA should be aiming for in looking at its policy on innovative technologies.

Ms. Barger said the public's lack of trust impacts EPA's ability to be flexible. The public does not believe Federal agencies are committed to cleaning up their sites and expects EPA to “hold their feet to the fire.” As a result, some cleanup agreements may be overly restrictive in relation to innovative technologies.

Ms. Barger reiterated that she would relay all the comments on the proposed policy statement to OFFE management. She indicated that the materials available at this meeting include a list of OFFE contacts.

She then moved on to briefly update participants on the status of the Western Governors' Association (WGA) technology development project. The project is a joint Federal-state effort—involving DoD, DOE, DOI, EPA, and WGA, which represents 20 western states and territories—to develop technical solutions to environmental restoration and waste management problems shared by states, commercial interests, and the Federal government. Its primary objectives are to expedite cleanup of Federal sites in the West and to establish a model for state-Federal-industry-community partnership on cleanup decisions that will be transferable to other areas of the country.

Project participants created a Federal Advisory Committee to Develop On-Site Innovative Technologies for Environmental Restoration (known as the DOIT Committee) late last year. The Committee has formed four workgroups, which include stakeholder participants. These groups will develop recommendations on specific activities to undertake to accomplish the objectives of the project. The next WGA Meeting (June 22) will include a review of the status of the project, and EPA Administrator Carol Browner is expected to attend. Further information about the project is available from Diane Lynne, EPA/OFFE.

Dr. Kovalick pointed out that the Western Governors' Association project is unique because, fundamentally, WGA is interested in using this project to stimulate economic development in the West around Federal facilities.

Innovative Technology Policy Forum

Jack Bickley, on detail from the Corps of Engineers to EPA/OFFE, said the Forum, currently in the planning stage, will bring together key Federal decision makers (EPA, DoD, DOE, DOI, U.S. Department of Agriculture (USDA), National Aeronautics and Space Administration (NASA), and U.S. Department of Commerce) and public and private technology developers and users to obtain consensus on key elements of a cohesive Federal strategy for promoting and facilitating the use of innovative environmental technologies at Federal facilities. In preparation for the Forum, planned for Fall 1993, OFFE is forming focus groups to address three broad areas: pollution prevention, pollution control, and remediation. The focus groups will meet in July to sort through a variety of issues related to innovative technologies and determine alternatives for addressing these issues within the context of an overall Federal strategy.

Mr. Bickley asked Roundtable members and associates to provide OFFE with names of people from their respective agencies who should be invited to participate in the focus group sessions. In addition, he asked that they review and comment on the issues to be covered in the focus group sessions. A copy of an issues matrix and an announcement of the Innovative Technology Policy Forum are included as attachments to this summary.

OFFE Efforts To Assist Civilian Federal Agencies

Rich Satterfield, EPA/OFFE, described EPA's Civilian Federal Agency Environmental Program Improvement Strategy, which OFFE developed to provide technical assistance and guidance to civilian agencies responsible for site cleanup and restoration. Mr. Satterfield explained that civilian agencies are responsible for about half of all Federal sites and will spend more than \$2 billion by 1995 for waste management and site cleanup and restoration. However, many smaller civilian agencies do not have enough experienced personnel, resources, or management-level support to address these problems appropriately.

A Task Force, comprised of 31 representatives from 21 civilian agencies, has been active since October, 1992, and is helping to define the direction and scope of the strategy. The Task Force has identified six critical areas of need: training for agency personnel, information resources, compliance tracking and monitoring at Federal agencies, EPA assistance on specific compliance issues, technical and contracting services/support, and strategies for improving communications between EPA and other agencies.

The Task Force is forming workgroups to focus on each area of need, develop short- and long-term recommendations to address them, and identify Federal and non-Federal resources required. As the overall strategy takes shape, the Task Force will serve as the core for a team approach to accomplishing the specific objectives established. Mr. Satterfield indicated that anyone interested in obtaining more information about the program should contact him at 202/260-9759.

The Private Investment Partnership

Mike Mastracci, EPA/ORD, briefed participants on a joint EPA-DOE program to design a model—a comprehensive process—to stimulate and facilitate private sector investment in the development of technology needed to clean up and restore DOE sites. DOE has funding the model development project and EPA has provided program direction. The National Environmental Technology Applications Corporation (NETAC) and its subcontractor, the Research Institute for the Management of Technology (RIMTech), developed the model. A copy of the visuals from Mr. Mastracci's presentation is included as an attachment to this summary.

While this project focuses primarily on private capital investment in environmental technology to address DOE needs, Mr. Mastracci said EPA was eager to cooperate in the project because the process defined in the model has broader application and addresses issues—system, management, and market aspects—that were being overlooked in other efforts to mobilize private sector investment in environmental technology. In addition, Federal facilities offer a controlled environment for technology maturation and testing, which may be more attractive to potential investors.

"Side" benefits to this project could include expanding the U.S. export market in environmental technology, enhancing the Nation's ability to compete in world markets, creating new jobs, and strengthening the domestic economy. These potential benefits are all the more important when viewed in the context of the current state of the environmental technology industry in this country, Mr. Mastracci said. In general, venture capitalists do not rate hazardous waste cleanup technology highly as a potential investment; their rating does not reflect the size of the market. Analyses indicate that growth in the environmental industry to be slowing. The industry is not recession-proof: competition is increasing; technology firms are struggling; and margins and profitability are down. In addition, the move toward more risk-based decision-making may reduce the size of the market.

As part of the model development process, the project team surveyed the major players in the process—investors, technology developers and remediation contractors, and government regulators—to get their perspectives on environmental technology development in general and the DOE market specifically. The team presented that first draft of the model to about 30 potential investors and representatives of technology development firms in an Investors' Roundtable Session held last month (May). They used discussions from that meeting to refine the model, which will be discussed at a second Roundtable Session scheduled for late June. Mr. Mastracci said that the final model and project report is due in July.

In summary, Mr. Mastracci said that the investment community appears to be wary but willing to cooperate in environmental technology development. In fact, two corporations have expressed interest in working on DOE-related technology as an outgrowth of this project. He said the model developed under this project is under consideration for use in the Western Governors' Association project as well.

The White House Technology Reinvestment Project

John Ablard, DoD/Advanced Research Planning Agency (ARPA), briefed participants on the status of the Technology Reinvestment Project (TRP), a collaborative effort of DoD, DOE, the National Institute of Standards and Technology (NIST), the National Science Foundation (NSF), and NASA. The project is part of the Nation's defense conversion and aims to improve U.S. competitiveness by aiding in the transition of defense-based technology development and manufacturing capabilities to non-defense use, creating long-term, quality jobs in the U.S. economy. The project is funded at \$471.6 million for FY 1993.

The project will provide financial assistance for activities in three areas:

Technology Development (including environmental technology development)—activities to “spin off” or re-use existing defense-related technology in non-defense areas, to “spin on” or apply commercial technologies for defense-related use, and to develop “dual use” technologies applicable to both sectors;

Technology Deployment—outreach and technical assistance for small- and medium-size manufacturing firms; and

Manufacturing Education and Training—experience-based skills and management training to help the Nation regain its prominence as a producer of quality products.

Mr. Ablard said a solicitation for proposals in each of these activity areas went out in May. All technology development proposals—24-month projects with an option for an additional 24 months—must involve at least two industrial partners and provide for at least a one-to-one match for all funds invested by industry in cash or in-kind services. He stressed that the awards under this project will not be contracts or grants. They will provide much greater flexibility (*i.e.*, the regular rules for grants and contracts will not apply). In addition, he said they do not expect intellectual property rights, a stumbling block in many public-private partnerships, to be a problem in this project because the Federal government is not interested in property rights if getting them impedes commercialization of technologies.

The deadline for submission of proposals is July 23, 1993. ARPA expects as many as 10,000 proposals, from which they will make 300 to 400 awards. A separate Small Business Innovative Research (SBIR) program is being conducted, for which no cost sharing is required, and an additional 3,000 proposals are expected. Awards are expected to be announced beginning in the last quarter of FY 1993.

ARPA is looking for about 400 experts in all activity areas to participate in the review of the proposals. He asked that Roundtable members interested in participating, or who would like to nominate others in their respective agencies to participate, to contact him.

In answer to a question, Mr. Ablard said DoD has included the project in next year's budget and, therefore, may continue it. Dr. Kovalick commented on the speed with which this project has been mounted; the first meeting of the sponsoring agencies was in December. Mr. Ablard indicated that the flexibility built into the enabling legislation has made it possible to move very quickly.

Current Status of SERDP

Dr. Tom Hart, USACE, said that DoD's Strategic Environmental Research and Development Program (SERDP) is funded at \$180 million for FY 1993, but the program has not yet been approved by the SERDP Council. Of that amount, DoD has earmarked the largest portion (35 percent) for R&D related to remote sensing technologies; about 17 percent will go to R&D, including demonstrations, related to remediation technologies. He said DoD used the Tri-Service Environmental Quality Strategy R&D plan as the basis for preparing the program. If the Council approves the program, DoD expects to dispense funds in September.

Dr. Hart said SERDP, which was authorized by Congress in 1990, has not enjoyed support within the Administration until recently. One reason is that funds appropriated involved no "new money" but were taken from existing DoD programs. For FY 1994, however, DoD has requested \$100 million in "new money."

Col. Owendoff suggested that attention should be paid to developing measures of success—how to demonstrate the benefit of SERDP—because, sooner or later, Congress is going to require information to justify continued funding. Mr. Anderson agreed, saying that, currently, there is no follow-up on funded proposals to determine if the funds have been used well or if any technology transfer has been accomplished. Dr. Kovalick added that the program needs to include a method for agencies to collaborate on addressing "national" problems so progress can be achieved more readily in a short (2-year) timeframe.

DoD Tri-Service Environmental Quality Strategic R&D Plan

Dr. Hart explained that DoD developed the Tri-Service Environmental Quality Strategic R&D Plan to better focus its R&D efforts to meet specific user requirements (needs) identified by the three services, maximize productivity, and improve technology transfer. As part of the development process, each of the services identified requirements in four major categories—restoration, compliance, pollution prevention, and stewardship—and quantified them in terms of cost, operational impact, and liability issues. Program descriptions in 86 "thrust areas" within the four major categories were synthesized from the submissions and a follow-up meeting was held with users to refine the plan. The result is a document, often called the "Green Book" or the "Road Map."

Since the services submitted requirements to DoD without an indication of priority and without consideration of funding, the resulting document describes an unconstrained program, Dr. Hart said, but it has provided a basis for moving forward in each thrust area. He said the plan is still in draft; it has not been fully approved within DoD.

Col. Owendoff added that DoD's struggle to define its role in technology development has impacted, and will continue to impact, this strategic planning effort. He said DoD requires program managers in each of the services to focus on service-related technology development projects, which makes it difficult to take into account what the Nation as a whole might need.

Dr. Kovalick asked if the requirements in the restoration category could be extracted and circulated to Roundtable members. Mr. Bartell said that they could but cautioned that the material contains budgetary information not appropriate for outside (industry) audiences. Dr. Kovalick suggested excising the budgetary information.

Mr. Anderson mentioned that DOE has been involved in a similar effort and suggested that the summary of identified needs, known as the "Crosswalk Report," may be of interest to Roundtable members. Dan Powell, EPA/TIO, indicated he would make arrangements for copies of the report to be sent to Roundtable members.

Update on Revision of the Roundtable Publications (Third Editions)

Dan Powell indicated that revision of the three Roundtable documents—*Synopses of Federal Demonstrations of Innovative Site Remediation Technologies, Third Edition*; *Accessing Federal Data Bases for Contaminated Site Clean-up Technologies, Third Edition*; and *Federal Publications on Alternative and Innovative Treatment Technologies for Corrective Action and Site Remediation, Third Edition*—has been completed. Copies of the drafts were sent to all Roundtable members for review and comment on May 28, 1993. Deadline for comments is June 30, 1993. Mr. Powell said that meeting the June 30 deadline is important to ensure that the publications can be printed and distribution can begin before the end of the fiscal year (Sept. 30).

Mr. Powell said the number of entries in the publications generally has grown each year. He asked for feedback from Roundtable members on changes or improvements that should be made in the documents to ensure their continued usefulness. Speaking specifically about the *Synopses*, Dr. Kovalick said it is important that the publication emphasize results of the demonstrations included, because that is the information in demand about innovative technologies.

Update on Activities of the Site Characterization Subgroup

Eric Koglin, EPA Environmental Monitoring Systems Laboratory (EMSL) in Las Vegas, said the Site Characterization and Monitoring Subgroup of the Roundtable met in February during the Field Screening Symposium in Las Vegas. Minutes from that meeting are being compiled.

He said the Subgroup is working on an analog to EPA's Vendor Information System for Innovative Treatment Technologies (VISITT). The VISITT database currently contains technology information submitted by 230 developers, manufacturers, and suppliers of innovative treatment equipment and services.

Mr. Koglin said the Subgroup also would like to develop a matrix of characterization and monitoring technologies, like the one being developed for screening treatment technologies, and a strategic plan to improve coordination among agencies and eliminate duplication of efforts to the extent possible. In preparation for these activities, the Subgroup would like to conduct a workshop to identify user needs. He said the Subgroup would require additional administrative support to move forward in these areas.

He said the Subgroup's plans for participating in a field demonstration, under the EPA SITE Demonstration Program, of the Army's cone penetrometer have been delayed. Mr. Bartell explained that, during preliminary testing, the Army found some flaws in the technology that require attention prior to such a demonstration.

Dr. Kovalick questioned whether the Subgroup is still viable. He said the primary reason for creating the Subgroup had been to mount a collaborative demonstration and questioned whether there is any mission for the group beyond that. Mr. Bartell commented that the Subgroup offers a forum for interagency communication. Mr. Koglin indicated that the mission may need to be changed to focus more on coordination of projects like the VISITT analog and development of a technology matrix. Dr. Kovalick requested that Mr. Koglin revise the mission statement and present it at the next Roundtable meeting.

In response to a comment from Col. Owendoff, Mr. Koglin updated the Roundtable members on the status of the Center for Site Characterization. As envisioned, the Center would be jointly sponsored by EPA, DoD, and DOE, but the goal is to attract substantial participation from industry and academia. The primary purposes of the Center would be to identify the most cost-effective characterization and monitoring tools available for hazardous waste site cleanup and to facilitate the process for getting innovative technologies approved for use.

Mr. Koglin indicated that he expects the Center to be operational within a year and, possibly, to take on one or two technology demonstrations as an initial step towards developing generic protocols.

Update on Activities of the Groundwater Subgroup

Rich Steimle, EPA/TIO, said the Groundwater Subgroup is moving forward on plans for a collaborative demonstration at Dover Air Force Base in Delaware. The demonstration is expected to be funded from a SERDP grant to EPA's Robert S. Kerr Environmental Research Laboratory in Ada, Oklahoma, and Tyndall Air Force Base in Florida. A preliminary site visit and meeting with Dover AFB personnel is scheduled for June 19.

Several agencies in the Subgroup have expressed interest in participating in the demonstration, including the Army Environmental Center, the Air Force, EPA, and DOE. In addition, preliminary discussions with the EPA Regional personnel and the State of Delaware have been favorable.

Mr. Steimle said the next formal meeting of the Subgroup would probably be in the Fall.

The Air Force/EPA Innovative Technologies Matrix

John Kingscott, EPA/TIO, updated participants on the cooperative project between the Air Force's Armstrong Laboratory (Tyndall Air Force Base, Florida) and EPA/TIO. They are working jointly to develop a matrix of site remediation technologies to assist project managers screen the alternatives for detailed assessment prior to remedy selection.

Mr. Kingscott said they developed a "strawman" early in the year and presented it to a group of experts for their reaction. The Experts' Workshop took place in March at Tyndall AFB, and more than 30 experts from the Air Force, EPA, DOE, USAEC, the Corps of Engineers, as well as private-sector researchers, developers, and technology users attended. Mr. Kingscott said the experts were told that everything in the "strawman" was "on the table." Over the course of the 2-day workshop, the group reviewed everything from the list of technologies to be included and the factors used to evaluate them to the contaminant groups treated by each technology. Once the experts reached consensus on the components of the matrix, they divided into three small groups (biological, thermal, physical/chemical) and filled out the matrix, answering performance-related questions and deciding on the appropriate rating for each technology, based on their collective experience and expertise. He said some adjustments in

the matrix were made after the workshop to compensate for slight differences in how each group perceived the definition of some of the evaluation factors. After a formal presentation of the final draft to Air Force and EPA officials, the *Remediation Technologies Screening Matrix* and an accompanying *Reference Guide* will be distributed to Air Force and EPA site managers. Dr. Kovalick indicated that all members of the Roundtable also will receive a copy when it has been approved.

In response to a question from Nick Lailas, EPA Office of Radiation Programs, Mr. Kingscott indicated that the *Matrix* does not include technologies to address radioactive wastes.

Col. Owendoff pointed out that the *Reference Guide* is an important adjunct to the *Matrix*, because it explains what each rating means and provides valuable additional information about each technology, such as the limiting factors. He said he intends to use the format of the *Matrix* and the evaluation factors used to examine other technologies that are brought to the attention of his office by individual vendors and developers. He said the *Matrix* format provides an excellent vehicle for providing Air Force site managers with a consistent set of information about new technologies as they surface. He suggested that the VISITT database should incorporate this type of evaluation.

Dr. Kovalick asked whether the Roundtable should seek out an independent third party to accomplish such an evaluation, and several participants indicated an interest. Dr. Kovalick said he would organize a conference call to discuss it further with interested individuals.

Air Force Bioventing Initiative

Robert Furlong, USAF/Civil Engineering and Environmental Restoration at Bolling AFB in Washington, DC, said the Air Force Center for Environmental Excellence (AFCEE) at Brooks AFB, Texas; EPA's Risk Reduction Engineering Laboratory (RREL) in Cincinnati, Ohio; and Battelle Laboratory in Columbus, Ohio, have cooperated to develop a protocol for conducting treatability studies at sites contaminated with JP-4 (jet fuel). The purpose of the protocol and subsequent demonstrations is to determine if bioventing would be a viable cleanup option. Following EPA's review of the protocol, EPA's Deputy Assistant Administrator for OSWER and Acting Deputy Assistant Administrator for Federal Facilities Enforcement issued a memorandum to EPA Regions supporting it and endorsing the use of bioventing at appropriate sites.

Mr. Furlong said that, since about 60 percent of the Air Force's 4,400 sites are contaminated with JP-4, this support has helped the Air Force move forward aggressively in its remediation efforts. The Air Force has conducted more than 100 field tests, and 42 full-scale bioventing systems are currently operating at Air Force sites. The Air Force is documenting lessons learned from the initiative, and Maj. Ross Miller of AFCEE is preparing a report. Data will be updated every six months.

Collecting Cost and Performance Information

Col. Owendoff said the Air Force has been working for about a year to collect cost and performance data on pump-and-treat and bioremediation technologies based on information from about 20 sites, not all of which are completed. He said they are trying to determine what data should be collected. Data collection has been difficult, he said. The first short evaluation report from this project is included as an attachment to this summary.

Other Business

Dr. Kovalick commented that EPA has been criticized for the way data on technologies are arrayed in its reports and other materials. The critics say that the data should be arrayed by contaminant concentration level, rather than by technology. He suggested there may be a need for an *ad hoc* meeting of the Roundtable to come to some consensus on how to collect and present technology-related data. He offered to convene such a meeting, if necessary, so the agencies can demonstrate to Congress that consistent and useful data on technologies is being collected.

Col. Owendoff commented that some state programs array data by concentration level as well. He said the Air Force has encountered this in the course of developing a POL (petroleum, oil, lubricant) Handbook. The handbook will provide presumptive remedies for specific scenarios. He said they are adding several case studies to provide context for the guidance before finalizing and releasing the handbook.

Dr. Kovalick reiterated the two “action items” from the meeting: conducting a conference call concerning independent evaluation of technologies and calling an ad hoc meeting in the next couple of months to discuss collection of cost and performance data. EPA has responsibility for both.

He said the Roundtable will meet next in November. He said the agenda should include information on legislative developments and innovative technology-related projects funded under SERDP to include among agenda items. He encouraged Roundtable members to contact Dan Powell, EPA/TIO, with suggestions for additional agenda items.

The meeting adjourned.

ATTACHMENT 1

Participants FEDERAL REMEDIATION TECHNOLOGIES ROUNDTABLE June 3, 1993

<u>Name:</u>	<u>Agency:</u>	<u>Telephone:</u>
John Ablard	U.S. DoD/Advanced Research Projects Agency	703/696-2383
Tom Anderson	U.S. DOE	301/903-7295
Melanie Barger	U.S. EPA/OFFE	202/260-4846
Bob Bartell	U.S. Army Environmental Center	410/671-2466
Maria Bayon	National Aeronautics and Space Administration	202/358-1092
Jack Bickley	U.S. EPA/OFFE	202/260-5686
Hari B. Bindal	U.S. Coast Guard	202/267-1968
Texas Chee	U.S. DOE	301/903-7926
James E. Cook	U.S. DOI/Bureau of Mines	202/501-9293
Winston deMonsabert	U.S. Navy/Naval Air Systems Command	703/692-8562
Col. Mike Fellows	U.S. Army Corps of Engineers	202/272-0579
Bob Fleming	U.S. DOE	301/903-7627
Bob Furlong	U.S. Air Force	202/767-4616
Chad Glenn	U.S. Nuclear Regulatory Commission	301/504-2546
Trish Gowland	U.S. EPA/OWPE	703/603/8975
Tom Hart	U.S. Army Corps of Engineers	202/272-1849
Jeff Heimerman	U.S. EPA/TIO	703/308/8806
Meg Kelly	U.S. EPA/TIO	703/308-8800
John Kingscott	U.S. EPA/TIO	703/308-8749
Eric Koglin	U.S. EPA/EMSL-LV	702/798-2432
Walt Kovalick	U.S. EPA/OSWER	202/260-4610
Donna Kuroda	U.S. Army Corps of Engineers	202/504-4335
Nick Lailas	U.S. EPA/ORIA	202/233-9371
Alfred Lindsey	U.S. EPA/ORD	202/260-2600
Mike Mastracci	U.S. EPA/ORD/OEETD	202/260-8933
Steven McNeely	U.S. EPA/OUST	703/308-8889
Dennis Miller	EG&G Idaho, Inc./U.S. DOE	202/586-3022
Col. Jim Owendoff	U. S. Air Force	202/767-4616
Dan Powell	U.S. EPA/TIO	703/308-8827
Richard Satterfield	U.S. EPA/OFFE	202/260-9759
Rich Steimle	U.S. EPA/TIO	703/308-8846
Newell Trask	U.S. Geological Survey	703/648-5719
Jesse Yow	U.S. DOE/Lawrence Livermore National Laboratory	510/422-3521

ATTACHMENT 2

**Innovative Technology Policy Forum Issues Matrix
and
Forum Announcement**

ATTACHMENT 3

Private Investment Partnership Presentation Visuals

ATTACHMENT 4

Air Force Cost and Performance Data Collection Project Report