TO: JIM GRANT 530-2576
FROM: JIM DWYER
REVISED MINUTES LOOK GOOD. PLS. PROCEED TO DISTRIBUTE TO PARTICIPANTS (INCL. HARD COPY TO MO, PLS.)
MANY THANKS- J.D.

ST. LOUIS SITE REMEDIATION TASK FORCE
TECHNOLOGIES WORKING GROUP

MINUTES OF MEETING HELD JULY 21, 1995

Attendees

Jim Dwyer, St. Louis Remediation Task Group Facilitator
Clarence Styron, R. M. Wester & Associates
Robert Wester, R. M. Wester & Associates
Lauri Peterfreund, NCEIT
Daniel Wall, EPA, Region VII
Larry V. Erickson, MDNR
Mitch Scherzinger, MDNR
Jim Grant, Mallinckrodt

DOE Soil Washing Tests

Based upon the Clemson studies, physical soil washing is not feasible. Extraction of radioactive materials is, but at costs slightly less than disposal at Utah.

Several issues need to be evaluated concerning extraction.

1. Chelate recycling.
2. Stabilization of concentrated, radioactive waste.
3. Treatment of process waste water.

Resolution of the above issues will undoubtedly add cost to soil extraction. Because of this, there does not appear to be a significant cost difference between disposal at EnviroCare (Utah) and extraction.

Only soils from the airport site (SLAPS) were tested. Soils at the airport site have a high clay content which increases the cost of extraction. On the other hand, soils at the downtown site are primarily ash which has a low clay content. Therefore, it would be useful to do preliminary testing of soils from the downtown site since they may be more amenable to extraction.

Also, pilot scale testing was recommended for extraction since it may be viable for some soils.

Alternative Technologies:

Alternative remediation technologies need to be evaluated. Up to now, single technologies have been proposed (all material sent to Utah or a storage bunker).

It is not unusual for more than one technology to be used for site remediation. Therefore, it is important to review other technologies, since a mix may be the best overall solution.

The working group would like DOE to prepare a review of other technologies that have been evaluated.

SLAPS Groundwater

The working group was asked to review groundwater flow into Coldwater Creek from the airport site. As explained by Jim Dwyer, DOE and SAIC are assembling a "blue ribbon" panel to do the review, so the work group will not have to follow up on this issue.

J. K. Grant

JKG/lrm

134686

TO: DAVE MILLER
FYI 4D

DAVE - I TRIED TO FAX THIS TO YOU YESTERDAY, BUT YOUR MACHINE WOULD NOT ANSWER. 4D

James Dwyer
4515 Maryland Ave. St. Louis, MO 63108
Voice: 314-367-5707 Fax: 314-367-5406

"Men are never so likely to settle a question rightly as when they discuss it freely."
Thomas Babington, Lord Macauley [1830]

DATE: 7/23/95 PAGES: 9

TO: DAVE ADLER C.: CHUCK JENKINS

FAX NO: _____ PHONE NO: _____

RE: NCEIT

MESSAGE: Dave - The following letter to Dick Gephardt and supporting documents surfaced during the meeting of the TECHNOLOGY WORKING GROUP on Friday morning at Mallinckrodt - Chesterfield.

It was an excellent meeting. I am also finding the "sign-up" sheet so you'll know who participated.

Jim Grant is drafting minutes which I'll then look at. Will copy you when they are distributed.

Jim

PLEASE NOTE: This transmission may contain information that is privileged or confidential. Please deliver to addressee promptly, or advise sender if received in error. Thank you.

OFFICE OF THE COUNTY EXECUTIVE
SAINT LOUIS COUNTY
CLAYTON, MISSOURI 63105

BUZZ WESTFALL
COUNTY EXECUTIVE

(314) 889-2016

July 13, 1995

House Minority Leader Richard Gephardt
1226 Longworth H.O.B
Washington D.C. 20515

Dear Congressman Gephardt:

Last year Richard Mahoney, former Monsanto CEO, Peter Raven, Director of the Missouri Botanical Garden, and I were asked by the Critical Technologies Partnership to be incorporators of The National Center of Environmental Information and Technology (NCEIT), a not for profit organization, located in St. Louis. NCEIT is a problem solving center that has the ability to build integrated teams of experts to collectively address all the technical issues impacting an environmental remediation program.

NCEIT, which is managed by my staff at the Economic Council, has assembled a consortium of St. Louis based companies who have requested funding from the Department of Energy to demonstrate the viability of their technology on the cleanup of the St. Louis FUSRAP sites. The consortium feels that the technology package they have developed can substantially reduce development costs and direct more of the FUSRAP project funding toward the actual cleanup effort and expedite the implementation of the remediation effort.

The St. Louis consortium members are considered experts in their fields and are recognized in both regional and national markets. Because they are located in the area, they can be a tremendous asset in managing local issues affecting the start-up and operation of the various technology components employed at the site. In addition, using local businesses will create new high tech jobs and have an overall positive impact on the St. Louis economy. As a community, we are also motivated to move the remediation program forward as quickly as possible to ensure that the quality of life and economic development in St. Louis continues to attract new residents and businesses to the area.

Any assistance you can give us in securing funding for the demonstration of our local technical expertise in radioactive remediation would be greatly appreciated.

Sincerely,

Buzz Westfall
St. Louis County Executive

BW/CEC/lap

NCEIT

National Center of
Environmental Information
and Technology

St. Louis FUSRAP
Technologies for Reducing the Cost of Remediation

I. Introduction

The National Center of Environmental Information and Technology (NCEIT) is a not for profit organization that assembles and coordinates collaborations between environmental technologists and specialists (individuals, research institutions, and companies) to address multifaceted environmental problems. NCEIT and it's technology partners believe that the complexity of today's environmental problems requires an integrated, problem solving approach that considers the impact of all actions on the surrounding ecosystem before any course of action is selected and implemented.

We feel that we can substantially reduce development costs and direct more of the project funding toward the actual cleanup effort and expedite the implementation of the remediation effort by adapting the existing, commercially viable technologies of the NCEIT partners to the St. Louis FUSRAP site. Our partners are considered experts in their fields and are recognized in both regional and national markets. Because they are located in the area, they can be a tremendous asset in managing local issues affecting the start-up and operation of the various technology components employed at the site.

II. Objective

Based on information we have gathered over the past several months, NCEIT and its technology partners believe that a project as diverse as the St. Louis FUSRAP site will benefit greatly from a multifaceted approach. We feel this evaluation is necessary in order to (1) ensure that a variety of treatment technologies receive a rigorous analysis so that the most viable technology or combination of technologies for the cleanup effort are implemented, (2) evaluate the cost effectiveness of a given treatment configuration or integrated treatment process, and (3) provide a broader spectrum of information for input to the St. Louis Remediation Task Force and to the DoE. This will provide a substantial foundation on which a comprehensive Record of Decision can be formulated.

III. Overview

We will focus on technologies that are already into or past the full scale demonstration phase of technology development. The majority of the work proposed will be performed in laboratories located in the St. Louis area which will reduce or eliminate contractor travel and sample shipping costs. Our intent is to reduce development costs and direct more of the project funding toward the actual cleanup effort.

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ed Paper

Analytical / Analysis

R.M. Wester and Associates, Inc. will evaluate and adapt existing techniques (laser ablation and gamma ray spectroscopy) that are suitable for in-situ sampling and analysis of soils containing inorganic components. This approach can obtain similar results faster, safer, and cheaper than conventional off-site laboratory investigations. Cost is important, but time may be an even more valuable metric considering the activity level associated with actual remediation. Not having workers digging, handling, transporting and eventually disposing of physical samples off-site is a desired attribute of the screening techniques proposed.

Microwave Vitrification

Berkeley Research Associates, Inc. will perform bench scale tests on simulated waste (surrogate) to develop preliminary waste/frit formulation and process parameters. Additional testing will be conducted on actual (hot) waste samples to validate and optimize the treatment process for the St. Louis sites. Off-gas treatment devices will also be evaluated and selected based on the composition of the soil.

Because the microwave vitrification process is a drum melting system designed to process the waste material in the drum for which it will be shipped or stored, it has several unique advantages: significant volume reduction, higher waste loadings, leach resistant stable matrix, no risk of hydrogen generation and over pressurization of the waste container, energy efficient process (energy control is instantaneous).

Environmental Management Control (EMC) is a full service wastewater management firm that manages 30 municipal and industrial waste water facilities in the midwest. They will design and build a waste water system that can handle both the treatment process effluent, as well as, the run-off ground water. EMC will guarantee capital costs, acquire all local, state, and federal permits, and assure compliance with local, state, and federal quality standards. EMC will work closely with the other technology suppliers to ensure that the cleanup effort does not pose any inadvertent threat to the St. Louis water supply.

Union Electric Company (UE) provides low-cost gas and electric services to more than 1.2 million customers in Missouri and Illinois. They work in conjunction with state and local agencies as an energy consultant and offers its customers advice about a variety of electrotechnologies. The company offers several energy efficiency programs to assist customers in improving efficiency, product quality, and addressing environmental issues. Their expertise in energy management and load conservation will be consulted and integrated into all process optimization and design programs developed for the St. Louis remediation project.

Electric Power Research Institute (EPRI), through collaborative programs with private sector utilities, works to develop and apply new technologies related to the generation, delivery, and use of electricity, with special attention paid to cost effectiveness and environmental concerns. At EPRI's Community Environmental Center, located at Washington University in St. Louis, intensive

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study to further the application of technology and improve energy efficiency of water and wastewater treatment plants is a key part of the center's Municipal Water and Wastewater (MWW) Program. The MWW Program addresses operating efficiencies and environmental concerns by identifying and implementing efficient electrotechnologies that meet regulatory requirements. The American Water Works Association Research Foundation and the Water Environment Research Foundation are collaborative partners in this program effort. The expertise of the Center will be applied to the St. Louis program, as appropriate, to reduce and/or control operating costs, assist in evaluating technologies and their impact on environmental quality parameters.

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Proposed Feasibility Studies

- Analytical / Analysis
  - Front and Back End Analysis
    - > Laser Ablation - Inductively Coupled Plasma - Atomic Emission Spectroscopy - Mass Spectroscopy
    - > Gamma Ray Spectroscopy

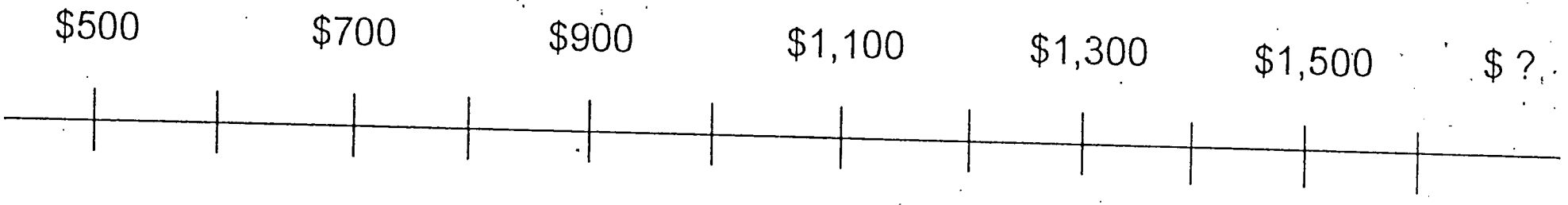
- Water and Energy
  - Production Costs
  - Recovery Costs
    - > Dewatering
      - »Optimize Recovery Options
    - > Sludge Management
      - » Residual Options
  - Effluent Treatment
    - > Review Treatment Options
    - > Meet Federal, State, and Local Compliance Standards
  - Run-off Water Treatment and Monitoring
  - Energy Costs for Remediation Process

- Microwave Vitrification
  - Optimize Glass Formulation
    - > Vitrify Surrogate and Hot Waste Samples
  - Analyze Off-Gas Constituents
  - Validate Final Waste Form

- **Optimal Technology Implementation Package**

Relative Technology Cost Ranges

($000)



SOIL WASHING

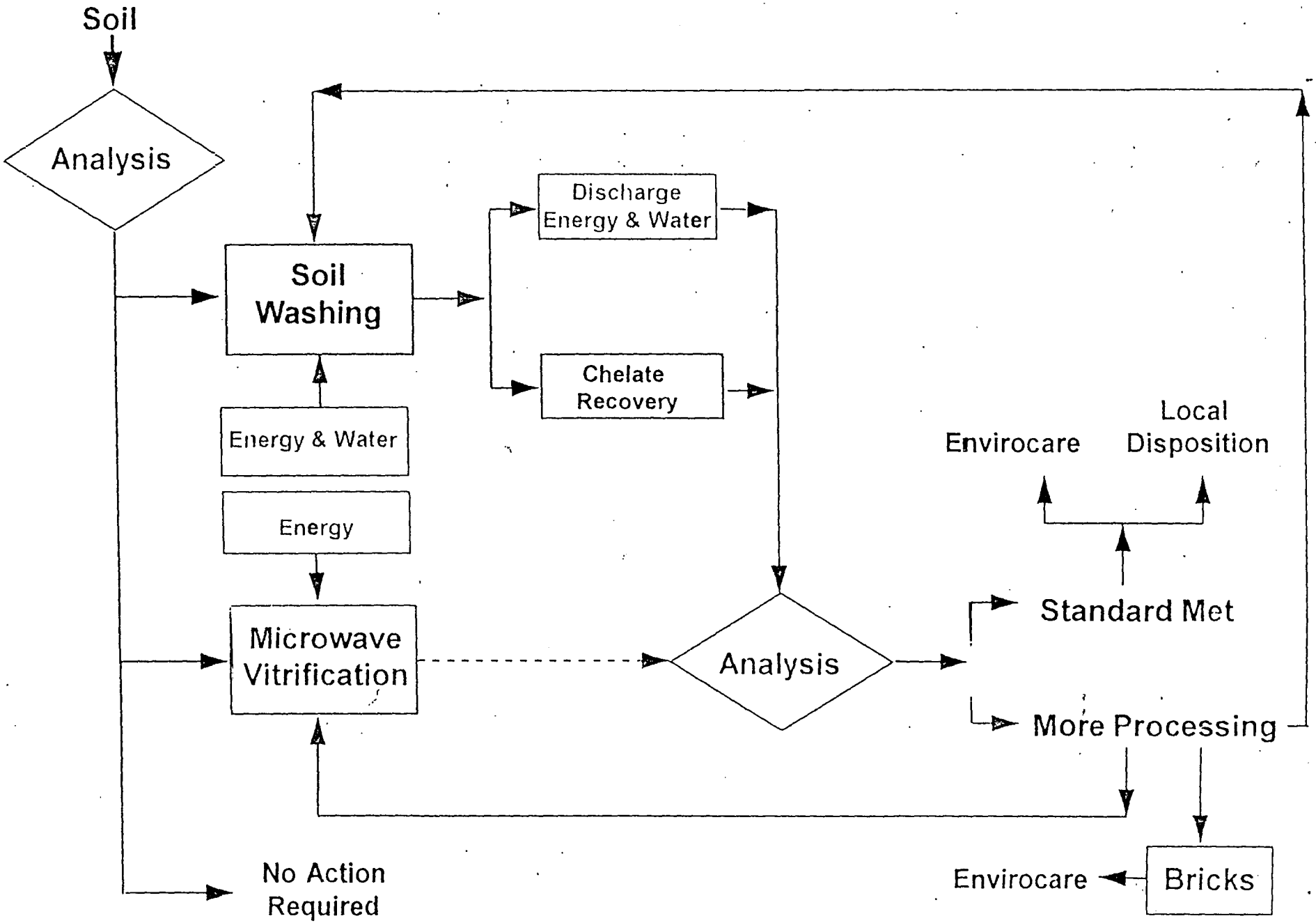
w / chelate recovery
w / o waste water treatment

w / o chelate recovery
w / o waste water treatment

SHIP TO UTAH

MICROWAVE VITRIFICATION

St. Louis FUSRAP
Remediation Work Flow Plan



Programmatic Issues

Analytical / Analysis

- Front End and Back End Analysis
- Real Time, Automated Analysis on Site
- Quantitative and Qualitative
- Certified

Microwave Vitrification

- Mobile System
- Permitting Costs
- Volume Reduction

Soil Washing

- Chemical Plant Construction
- Permitting Costs
- Recovery of Chelating Agent

Energy and Water

- Energy Efficiency and Costs
- Water Recovery and Treatment Options
- Run-off Water Treatment and Monitoring
- Sludge Management
- Compliance Standards

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Formerly Utilized Sites Remedial Action Program (FUSRAP)

ADMINISTRATIVE RECORD

for the St. Louis Site, Missouri

U.S. Department of Energy

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