

**Paducah Gaseous Diffusion Plant
Citizens Advisory Board
Meeting Minutes
March 17, 2005**

The March 17, 2005 Citizens Advisory Board (CAB) meeting was held at the CAB office in Paducah, Kentucky at 5:30 p.m.

Board members present: Barry Eadens, Ricky Ladd, Shirley Lanier, Bobby Lee, Linda Long, Rhonda McCorry, Janet Miller, John Russell, and Jim Smart

Board members absent: Chad Kerley

Ex Officio members and related regulatory agency employees present: Jon Maybriar and Neel Williamson, Kentucky Division of Waste Management; and David Williams, Environmental Protection Agency

Deputy Designated Federal Official present: William Murphie

DOE Federal Coordinator present: David Dollins

DOE-related employees present: Jeannie Brandstetter, Tracey Brindley, Greg Cook, Kim Crenshaw, Kara Doughty, Jim Ethridge, Steve Kay, Reinbaud Kuerr, Steve Meiners, Joe Tarantino, Glenn VanSickle, and Dick Veazey

Public: Steve Hampson and Lindell Ormsbee

Agenda

McCorry called the meeting to order at 6:00 p.m. Board facilitator Steve Kay asked if there were any proposed modifications to the agenda. McCorry said Steve Hampson, Kentucky Research Consortium for Energy and the Environment (KRCEE) would provide a presentation to the Citizens Advisory Board (CAB) prior to the task force reports. **The Board adopted the agenda as modified by consensus.**

Minutes

Kay asked if there were any proposed modifications to the draft February minutes. There were no modifications. **The Board approved the minutes as submitted by consensus.**

Deputy Designated Federal Official's Comments

Murphie said two new members have been appointed to serve on the CAB, Joseph Baust and William Burnett.

Murphie provided two project charts to the CAB. He said the first chart shows the entire timeline of operable unit projects through 2019. The second chart indicates CAB input opportunities for the Paducah cleanup program with a breakdown of the schedule for the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) projects.

Murphie provided the CAB with the U.S. Department of Energy's (DOE) response to the recommendation (05-01) concerning resolution of Holocene displacement at the C-746-U Landfill. He said DOE agrees with this recommendation.

Murphie said a delegation from Paducah is meeting with the Secretary of Energy and other members of DOE this week in Washington D.C. He said the community was very well represented. He said he would know more details from the representatives of the delegation when they arrive back in Paducah.

Progress of the Paducah Project

Murphie reported February progress as follows:

- Installation of storm drains and utility lines are nearing completion at the Depleted Uranium Hexafluoride (DUF₆) Conversion Facility. Site excavation is complete in the conversion facility area and Uranium Disposition Services is preparing to award contracts for the warehouse and administrations buildings.
- Drummed material at the DOE Material Storage Area (DMSA) is being removed, sorted, characterized, segregated, and repackaged. 635,000 of 866,000 ft³ of DMSA material has been characterized over the project life. 188,676 ft³ has been packaged over the project life.
- DOE is continuing to resolve the shipping issues in the Scrap Metal Removal project. Field crews have 1,300 tons of scrap downsized and ready to load when shipments resume. 450 of 3,000 drums of machine turnings waste have been processed through the end of February. 3,000 drums of machine turnings are to be disposed at Envirocare by October 2005.
- At the C-410 Decontamination and Decommissioning (D&D) complex, 14 B-25 boxes of mixed low-level waste tank residuals and hydrogen fluoride (HF) piping from the HF Tank Farm is being prepared for shipment to Envirocare. Asbestos abatement activities have been initiated.
- 176 ft³ of Legacy mixed low-level waste was shipped to Envirocare in February. 1,080 ft³ of newly generated waste and 696 ft³ of Agreed Order waste was disposed in the C-746-U Landfill. Processing has begun for shipment of Agreed Order waste to Envirocare.
- The C-400 Source Removal Record of Decision is under review by the Commonwealth of Kentucky. Approval is anticipated in mid-April. The Southwest Plume Site Investigation/Risk Assessment Report was submitted to regulators on February 17, 2005. The Proposed Plan is scheduled to be submitted to the regulators by July 2, 2005.

- DOE submitted the Surface Water Operable Unit Sampling and Analysis Plan to the regulators on December 15, 2004. Mobilization activities for the site investigation is tentatively planned to begin in the Spring.
- A meeting was held on March 17 to discuss regulator comment on the Burial Grounds Operable Unit Scoping Document. The Remedial Investigation/Feasibility Work Plan is scheduled to be submitted to the regulators by June 30, 2005.
- The Paducah Infrastructure contact award to Swift & Staley Mechanical, Inc. was announced on March 16, 2005. Protests were filed staying execution of the contract with North Wind Paducah Cleanup Company, LLC for the Paducah Remediation cleanup projects. The existing contract with Bechtel Jacobs Company has been extended through May, with further options for extensions.

Federal Coordinator Comments

Dollins said the CAB's Annual Report is in the packet and he appreciated everyone's input.

Dollins said DOE is working on a response to the End State Vision recommendation.

Comments

David Williams asked if the accelerated D&D projects indicate that a solution has been established for the waste shipments. Murphie said DOE is anticipating the waste disposal issue will be resolved using Envirocare or the Nevada Test Site.

Maybriar asked if there is a time limit when DOE's budget money had to be spent. Murphie said DOE is trying to get as much of the work done in 2005 and 2006 as possible. He said fortunately DOE's money carries over year to year, but Congress reserves the right to take back money not spent and they may lose a small percent. He said money committed to projects is considered spent money.

Ladd asked if the CAB would have input on the accelerated projects such as D&D of inactive facilities. Murphie said the acceleration would not nullify public and regulatory requirements. He said some of activities could be done as a maintenance action and would not require the full CERCLA process. He said the goal would be to accelerate the schedule to streamline the review process as quickly as possible to the extent there is an agreement. If a project is chosen that results in dispute or lack of consensus, that project would not be accelerated. Ladd said DOE working with the state to accelerate some of the projects excluding the public comment period goes back to the Agreed Order that was entered into between DOE and the Commonwealth of Kentucky and the lack of the opportunity to comment. He said the CAB may identify alternatives other than the state on some of these projects. Murphie said permission is not required on some activities and some activities require total approval, depending on CERCLA and the Federal Facilities Agreement. He said some activities may fall below the threshold that require full and open public participation. He said DOE will comply with the CERCLA process. Murphie said the Agreed Order regulatory process and this process are very different.

Russell said the Board should have a comment period if alternatives are being considered. He said the Board should have an opportunity to recommend their preferable alternative.

Maybriar said the state has observed what is being proposed by DOE. He said some issues may fall under a maintenance activity to enable some of the infrastructures to be moved, but this is not the final action. The soil around the area affected over the years would still be addressed.

Ladd asked if the transfer of maintenance and surveillance of the cylinders is still scheduled to go to Uranium Disposition Services in May. Murphie said May is the goal.

Lee said the chart provided by DOE is helpful but she believes the chart given to the CAB in January is more detailed and helpful in the task forces. She said both charts are useful. Murphie said both charts can be used. He said the CAB can review the charts and have comments at the April meeting.

Ex- Officio Comments

Williams said a meeting was held last week at the Paducah DOE office. He said federal agencies are held under an act called the Government Performance and Results Act to reach certain goals and oversee cleanup programs. He said one goal is to establish environmental indicators, which is delegated to the state and the state reports to Congress on this issue. He said two environmental indicators were discussed at this meeting; groundwater contamination under control and human risk exposure control. He said DOE is looking at both of these aspects.

Maybriar said Tuss Taylor is not longer the ex-officio for the CAB. He said he would be the acting supervisor for the next couple of months. He said himself and Todd Mullins would be the contact for the Board until someone is hired to take Taylor's place. Gaye Brewer, previously with the Division of Waste, will be replaced by Brad Holland the following week.

Kentucky Research Consortium for Energy and Environment

Hampson presented a review of the projects conducted by the KRCEE at the Paducah Gaseous Diffusion Plant (PGDP).

Dollins asked if the Holocene data at the south end of the site is being utilized. He said boring samples were taken for a potential CERCLA cell. Hampson said yes, but the potential to encounter Holocene displacement increases as you move northward.

Russell asked how the proof of concept projects that KRCEE are investigating connect to the DOE cleanup. Murphie said DOE needs the analysis done by the KRCEE to be able to submit new ideas to the state. Maybriar said the state is also working with KRCEE and will look at technologies that will save time and yield a cheaper remediation cost for cleanup.

Russell asked if there was a timeline when KRCEE would make the determination of Holocene displacement at the Paducah site. Hampson said the data will be looked at in segments beginning June 30.

Hampson said Dr. Woolery, KRCEE could conduct a workshop for the CAB, contractors, and the general public on all of the projects KRCEE is investigating. McCorry said the CAB would like to schedule a workshop.

Task Forces/Presentations

Waste Disposition Task Force

Russell said the Waste Disposition task force discussed the Scrap Metal Removal project and a member of the task force will give a short presentation on this project at the April Board meeting.

Water Quality Task Force

Southwest Plume Site Investigation

Lee provided a presentation on the Site Investigation Report for the Southwest Groundwater Plume at the Paducah Gaseous Diffusion Plant.

Ladd asked if a compressor pit has been looked into at the Southeast corner of C-720. He said a couple of years ago there was an extensive cleanup effort in a sump hole in the pit. Ladd said the area was roped off and asked if DOE could drill through the floor and go underneath the pit to take samples. Dollins said he would research this issue.

Long Range Strategy/Stewardship

McCorry requested that the support staff send out an e-mail for confirmation of attendance to the April Chairs Meeting in order to meet registration and hotel reservation deadlines. She said the budget would allow for three members to attend the meeting.

McCorry said she had participated in a Chairs Conference call on February 24. She reported on the transportation issues, postponement of the remediation contract, completion of the CAB's Annual Report, and membership issues.

Community Outreach

McCorry said the Community Outreach task force is working with the Membership Ad Hoc subcommittee on the membership drive. She said letters would be sent to local area churches, organizations, and elected officials for membership recruitment. McCorry asked all Board members to solicit individuals whom they feel would be an asset to the Board.

McCorry said she attended the public meeting for the Environmental Garden Project coordinated and administered by Active Citizens for Truth. She said the data results were inconclusive at that time and

Dr. Bastin, University of Kentucky, will present a summary on the outcome of the study for the residents participating in the study. McCorry requested that Bastin also update the CAB on her findings.

McCorry said Eadens would provide a final Speakers Bureau presentation for the Board at the April meeting. She said two local organizations have scheduled the presentation to be given at their meetings in April.

Website

Lee presented a draft CAB Web site.

Lee requested the Board decide on the content and send any links to the support staff that may be beneficial to the Web site.

Eadens suggested taking information from the Speakers Bureau and adding it the Web site for task force information.

McCorry asked the Board for approval to proceed with the Web site that Lee has presented. Kay asked if there were any objections to moving forward with the new Web site. There were no objections.

Review of Workplan

Kay asked if there were any proposed modifications to the workplan. Eadens noted the Speakers Bureau presentation should be moved to April.

Review of April Agenda

Lee requested the Board discuss the possibility of adding community members to the task forces as non-voting members. McCorry suggested adding this topic to the Executive Committee agenda.

Action Items

Dollins said the question from Lee regarding Cs-137 indicated ten times higher in outfalls than in the North-South Diversion Ditch was associated with industrial levels inside the fence versus recreational levels outside the fence.

Dollins requested to leave Ladd's question regarding beryllium in metals testing pending.

Subcommittee Reports

Executive Committee

McCorry said the budget was discussed at the March Executive Committee. EHI has put together a spreadsheet indicating budgeted expenses versus actual expenses.

Long reported the Membership Ad Hoc subcommittee recommends the Board submit three applicants to DOE to fill current vacancies; Bill Brien, Gary Reside, and John Anderson. **The Board approved the applicants for recommendation of membership to DOE by majority.**

The meeting adjourned at 8:45 p.m.

Progress at the PADUCAH PROJECT

Update to the Citizens Advisory Board

March 17, 2005



William Murphie
U.S. Department of Energy
Manager
Portsmouth/Paducah Project Office



DUF₆ Conversion Project

Feb. 20, 2005



- Site excavation is completed in the conversion facility area, and nearing completion for utilities
- Installation of storm drains and utility lines nearing completion
- UDS preparing to award contracts for Warehouse and Administration Building

March 15, 2005





Projects Being Accelerated

D & D



Nitrogen Facility

- Hydrogen holder tank D&D already completed eight years early
- Nitrogen Facility accelerated six years, from FY 2011 to FY 2005



Projects Being Accelerated

D & D requiring an EE/CA:

- Incinerator accelerated four years, from FY 2010 to FY 2006



Incinerator



West End Smelter

- West End Smelter accelerated three years, from FY 2009 to FY 2006

- Limehouse accelerated two years, from FY 2008 to FY 2006



Limehouse



Projects Being Accelerated

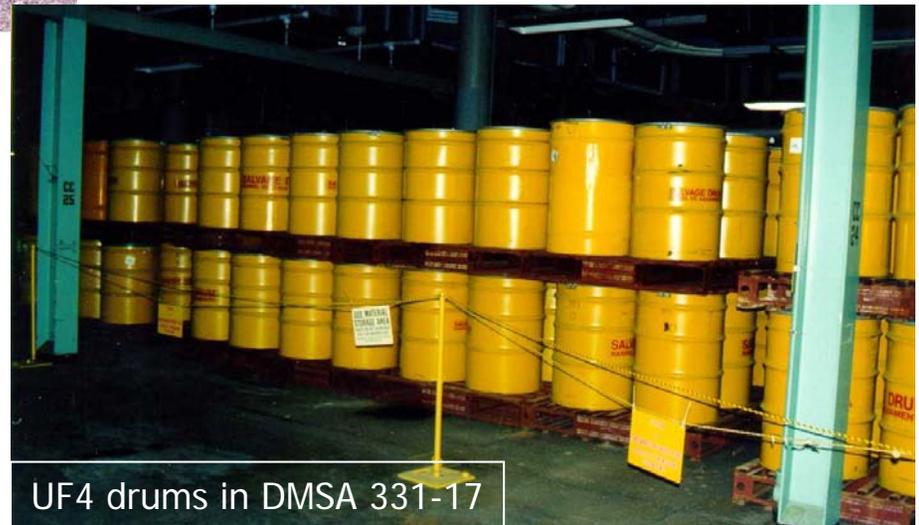
Waste Disposition



Legacy LLW stored outdoors

- Disposal of 50,000 cubic feet of LLW stored outdoors accelerated 3 years, from FY 2009 to FY 2006

- Disposal of approximately 1900 UF4 drums accelerated two years, from FY 2007 to FY 2005



UF4 drums in DMSA 331-17



Projects Being Accelerated

DMSAs

- Complete characterization, packaging and disposal of C-331-01 a year earlier (FY 2006 to FY 2005) & C-333-43 two years earlier (FY 2007 to FY 2005)



DMSA OS-14

DMSA C-333-43

13,480 cubic feet of material



2,994 cubic feet uncharacterized



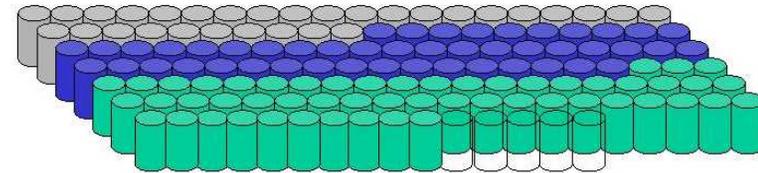
4,657 cubic feet characterized, awaiting repackaging



5,312 cubic feet characterized, repackaged, awaiting disposal



517 cubic feet disposed



= 100 cubic feet

- Size reduction, packaging and disposition of materials in OS-14 accelerated one year, from FY 2006 to FY 2005



DMSAs

- Drummed material being removed, sorted, characterized, segregated, and repackaged.

February

Project Life

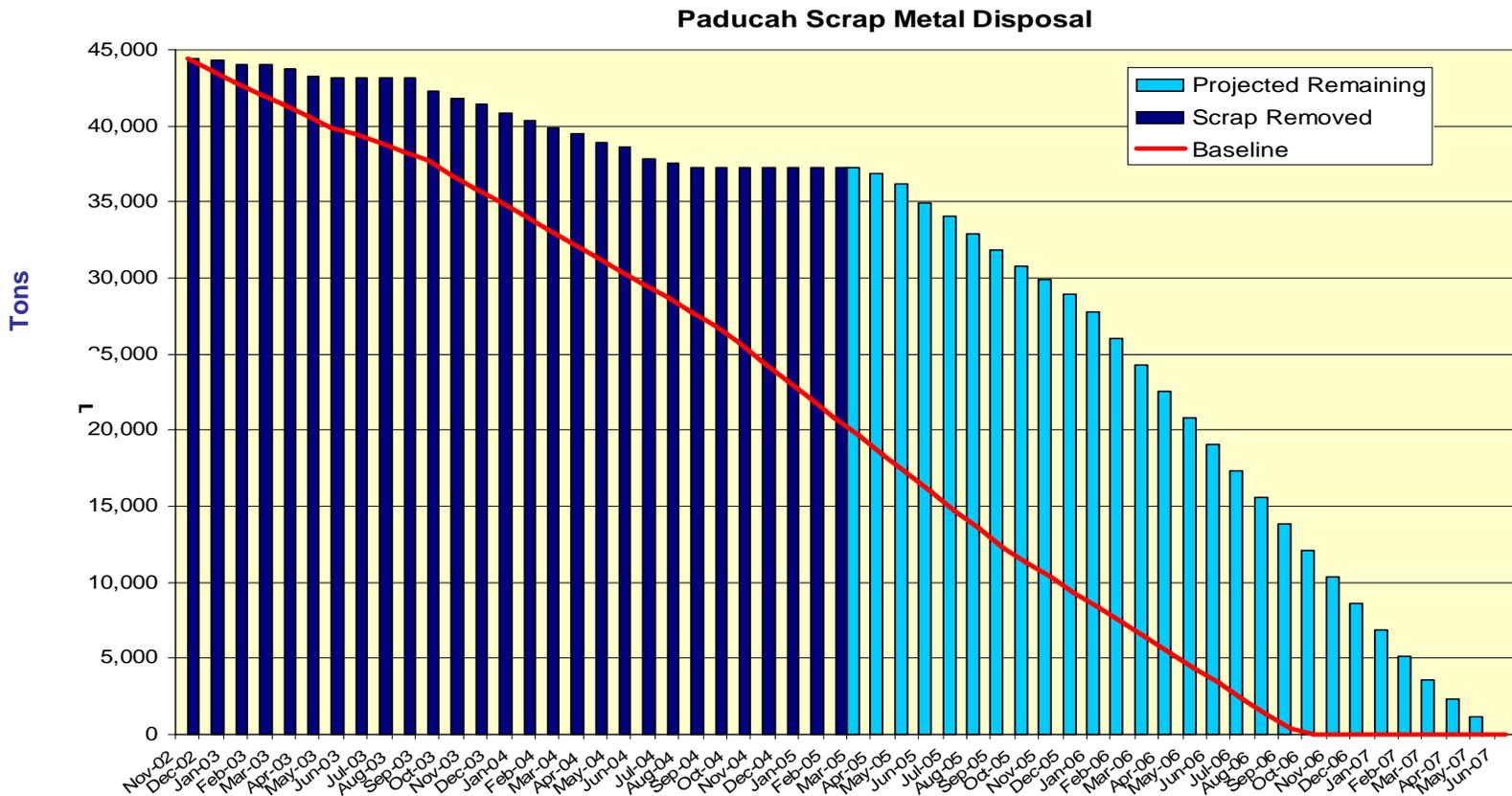
- Characterized 1,100 cubic feet 635,000 of 866,000 cubic feet
- Packaged 2,440 cubic feet 188,676 cubic feet





Scrap Metal Removal

- Scrap metal shipments remained suspended in February
- BJC is continuing to work to resolve shipping issues
- Field crews have 1300 tons of scrap downsized and ready to load for shipment



* A revised forecast will be presented once transportation issues are resolved



Scrap Metal Turnings

- 450 of 3,000 drums of machine turnings processed through end of February (total count of drums re-estimated from 3,900 to 3,000)
- Shipping security plan for Northwest scrapyard project to Envirocare has been approved
- All 3,000 drums to be disposed at Envirocare by October 2005





C-410 D&D

- Completed shipment of 17 B-25 boxes of mixed low-level waste tank residuals and HF piping from HF Tank Farm to Envirocare
- Completed approximately 50% of demolition in Sector 1, Zone 21.
- Initiated asbestos abatement activities in C-410 (floor tile and mud from piping insulation)
- Preparing to ship low-level waste scrap metal (platforms, railings, walkways, structural steel) from the HF Tank Farm to Envirocare

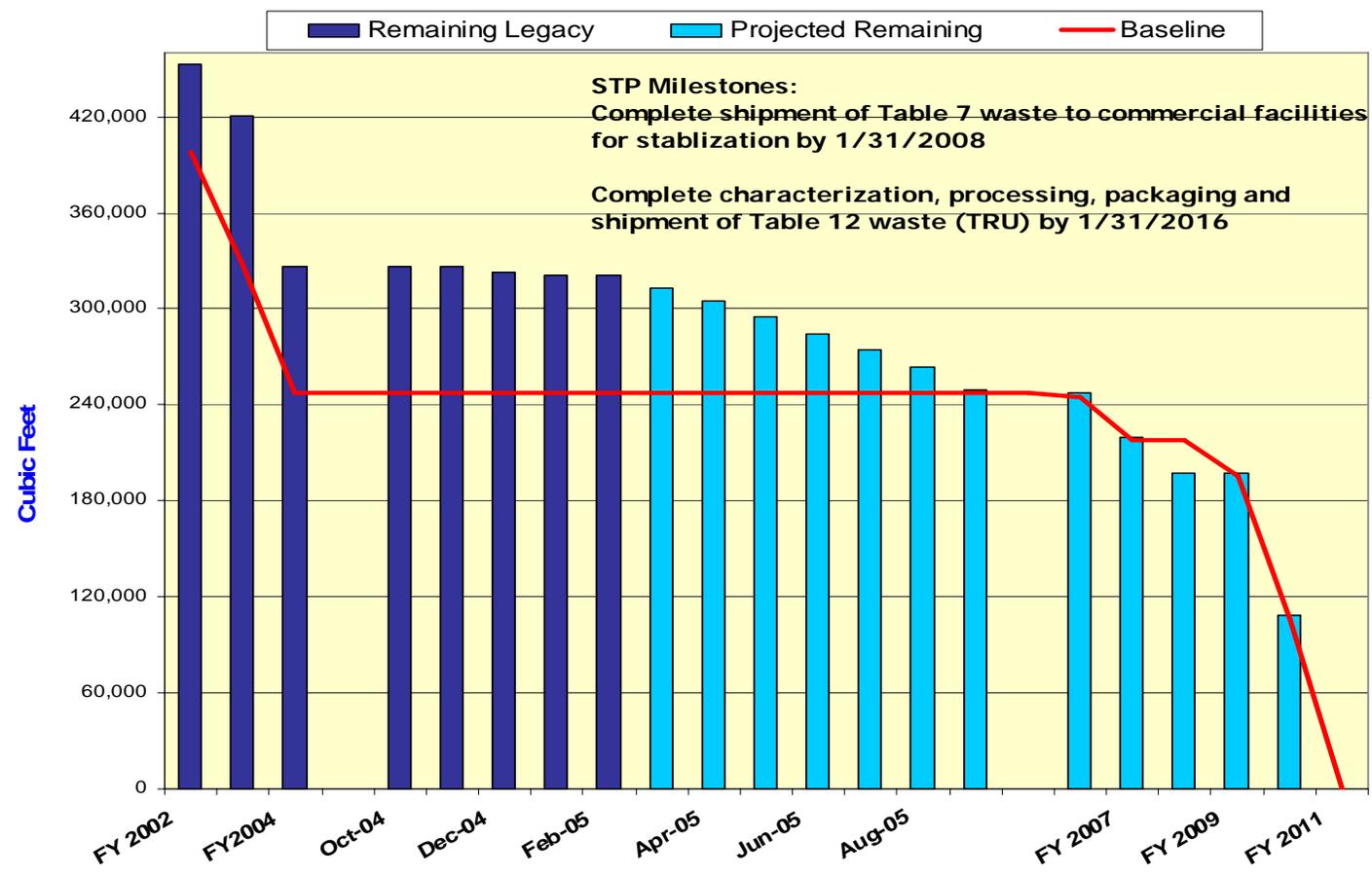


Before & after removal of Sector 1 piping & conduit



Legacy Waste Disposition

- Shipped 176 cubic feet of Legacy MLLW to Envirocare in February
- Disposed 696 cubic feet of Agreed Order waste and 1,080 cubic feet of newly generated waste in the C-746-U Landfill
- Began processing Agreed Order waste for shipment to Envirocare





Groundwater Operable Unit

C-400 ROD

- EPA notified DOE March 16 that the revised D2 ROD satisfied their comments; Kentucky comments pending
- ROD approval anticipated in mid-April

Southwest Plume

- D1 Site Investigation/Risk Assessment Report submitted to regulators on February 17, 2005
- D1 Proposed Plan to be submitted to regulators by July 2, 2005



Surface Water Operable Unit

Project Status

- D2 Sampling and Analysis Plan (SAP) submitted to regulators on December 15, 2004
- EPA approved D2 SAP; Kentucky conditionally approved
- SAP is currently in informal dispute to resolve Kentucky conditions
- Mobilization activities for site investigation tentatively planned to begin in the Spring



Burial Grounds Operable Unit

Project Status

- Meeting held today to discuss regulator comments on Scoping Document
- D1 RI/FS Work Plan to be submitted to regulators by June 30, 2005



Transition to New Contractor

Transition Status

-- Infrastructure

- Infrastructure awards announced March 16, 2005
- Swift & Staley Mechanical Contractors, Inc. awarded Paducah contract

-- Remediation

- Protests filed staying execution of the contract with North Wind Paducah Cleanup Company, LLC
- Public access to status is at the Government Accountability Office web site, www.gao.gov/decisions/bidpro/bidpro.htm
- Contract with Bechtel Jacobs Company extended through May, with further options for extensions
- Work on cleanup projects continuing



Seismic Investigations

Earthquake Input Parameters for the PGDP, Paducah, and Jackson Purchase Region

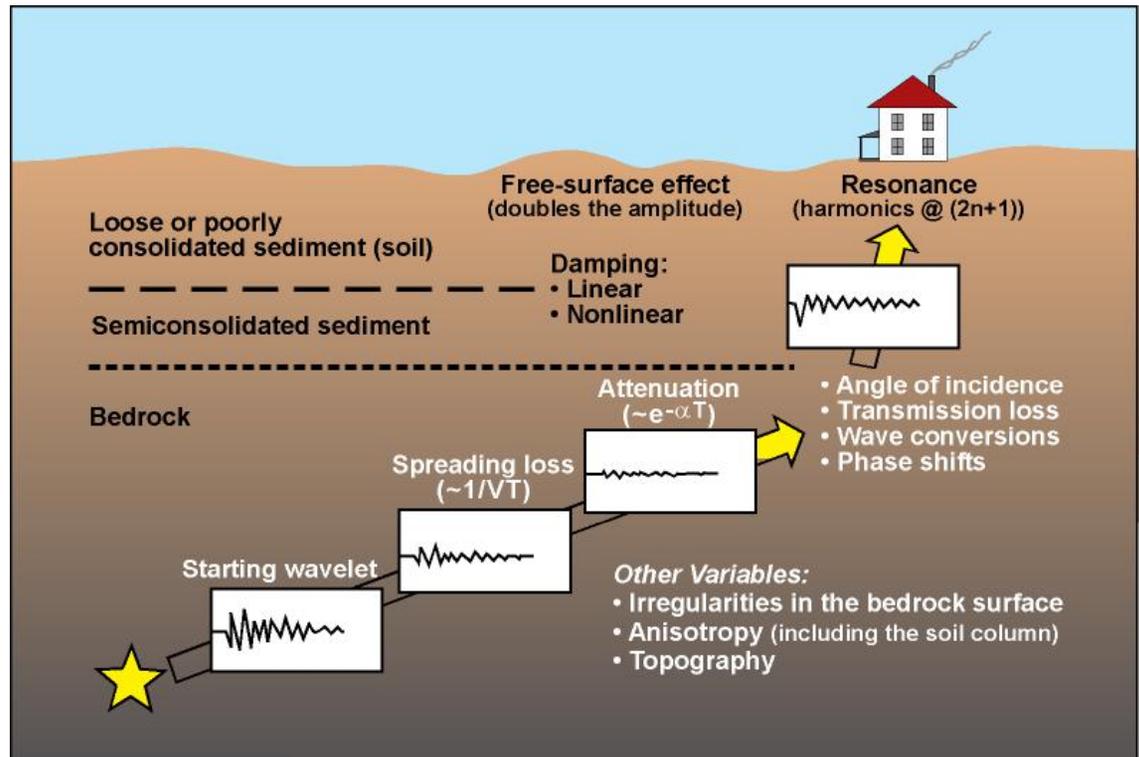
KRCEE CAB Presentation, March 2005

*E. W. Woolery
University of Kentucky
Department of Geological Sciences*



Issues

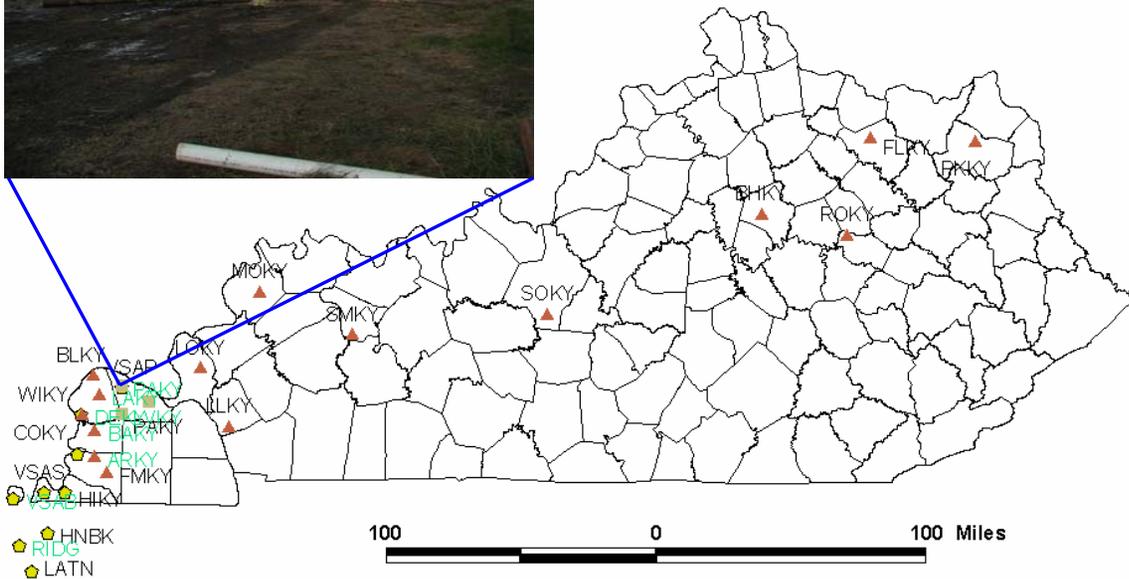
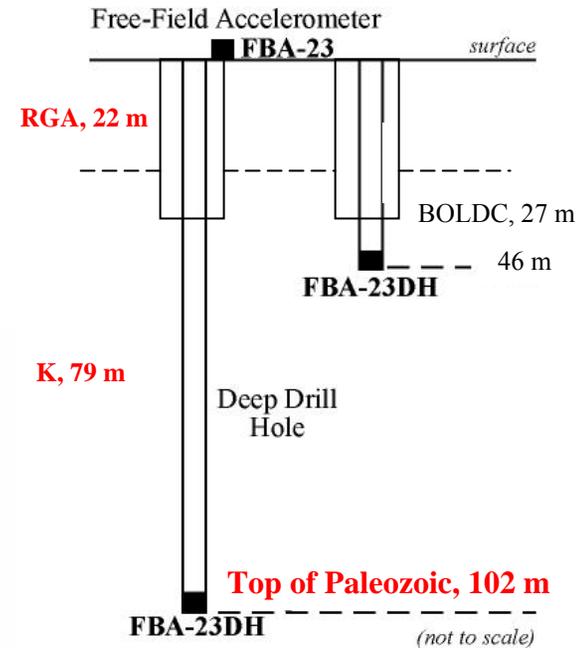
- What are the likely seismic design ground motions at the PGDP site?
 - Source Effect
 - Path Effect
 - Site Effect
- Needed for accurate modeling and seismic design



Network Enhancement



Vertical Accelerometer and Seismometer Array VSAP



Strong-motion Instrumentation

- Kinematics K-2 accelerograph; high dynamic range for pseudo-broadband capability
- Kinematics FBA-23 and Episensor force-balanced accelerometers; capable of staying "on scale" under motions up to 2g's.

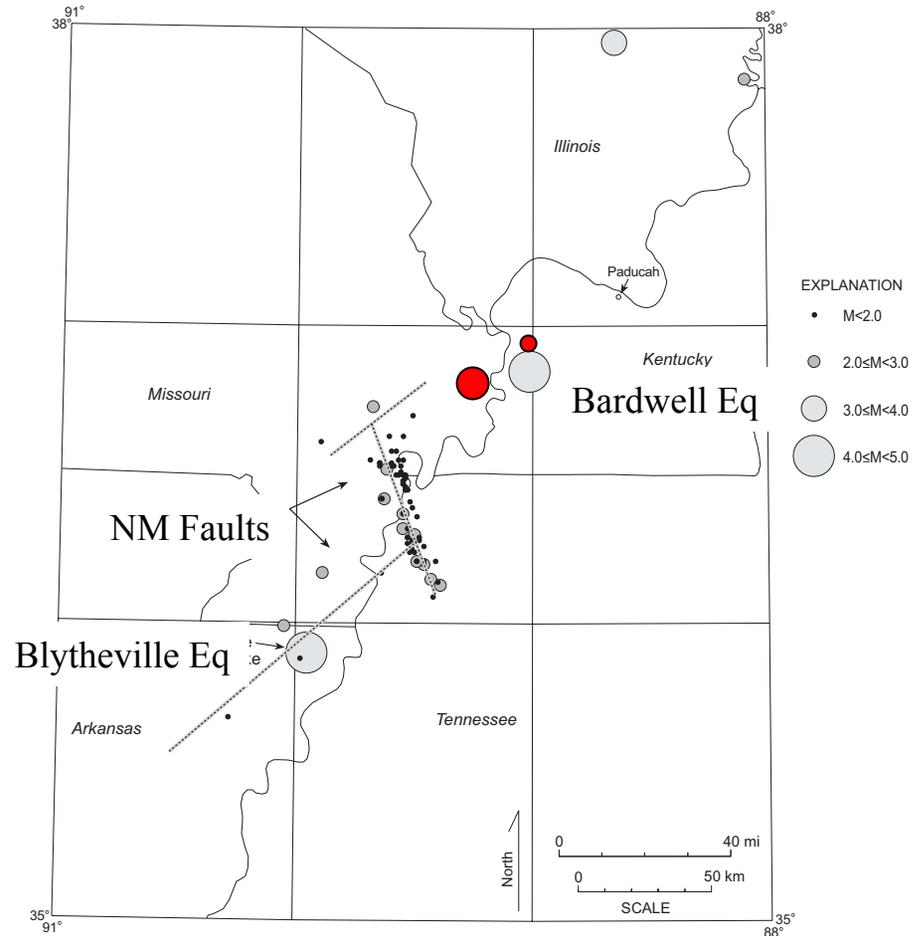


Typical Completion

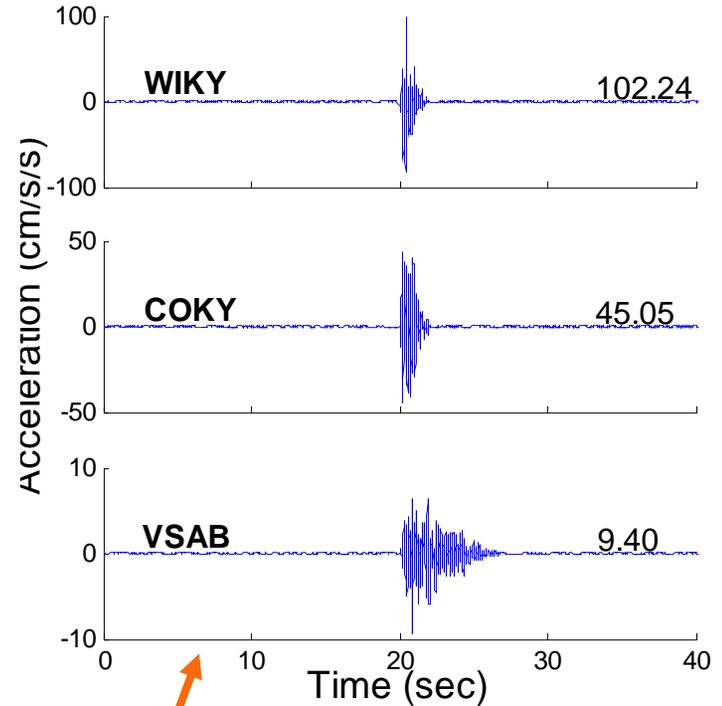
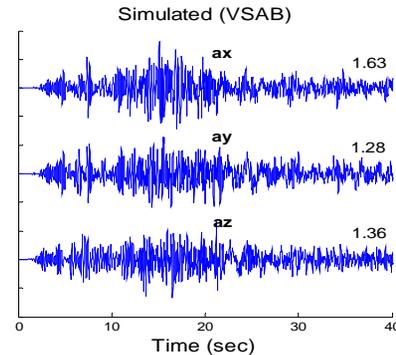
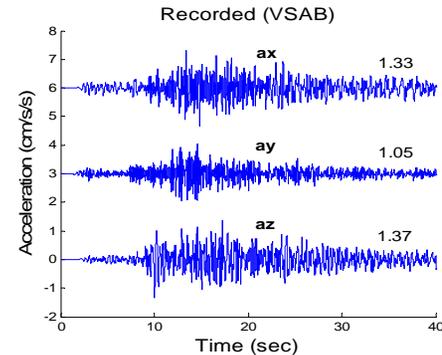
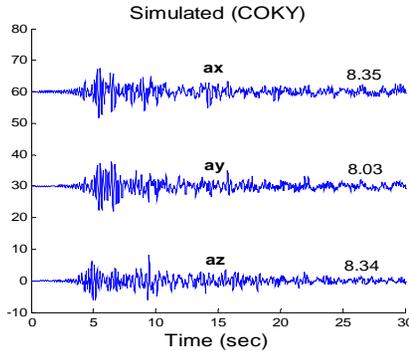
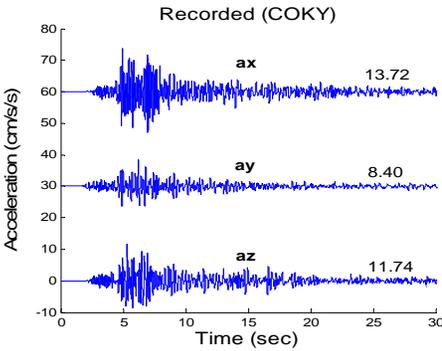
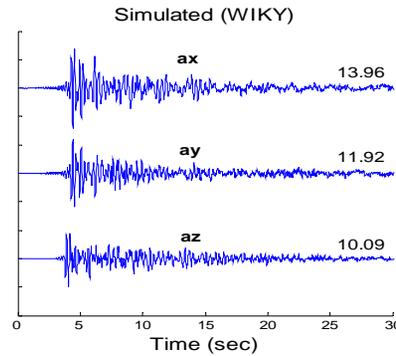
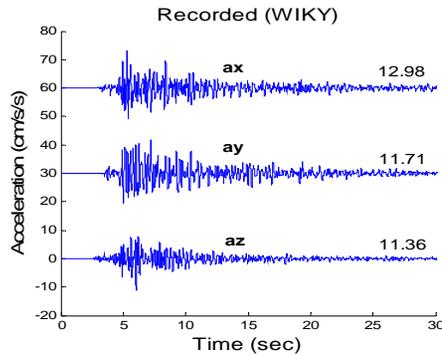


So far?

- 2 similar events in 2003 (M4.0)
 - Bardwell, 2 km focal depth
 - Blytheville, 18 km focal depth
- Need statistically significant population
 - 12Feb04, 2.4 M_D , 9 km depth
 - 15Jul04, 3.5 M_D , 4 km depth



M_w4.0 June 06, 2003 Kentucky Earthquake

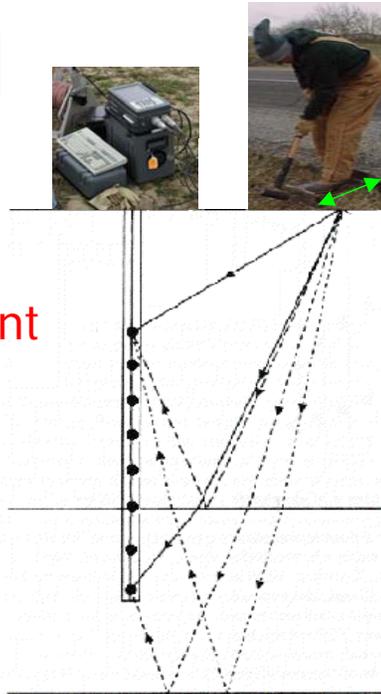


Stochastic Point Source Model

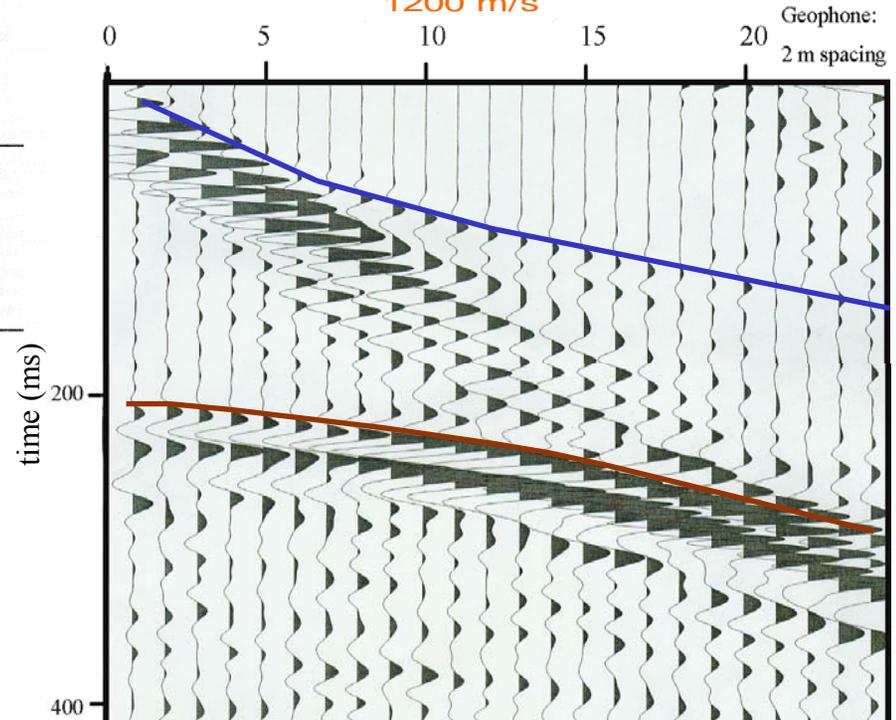
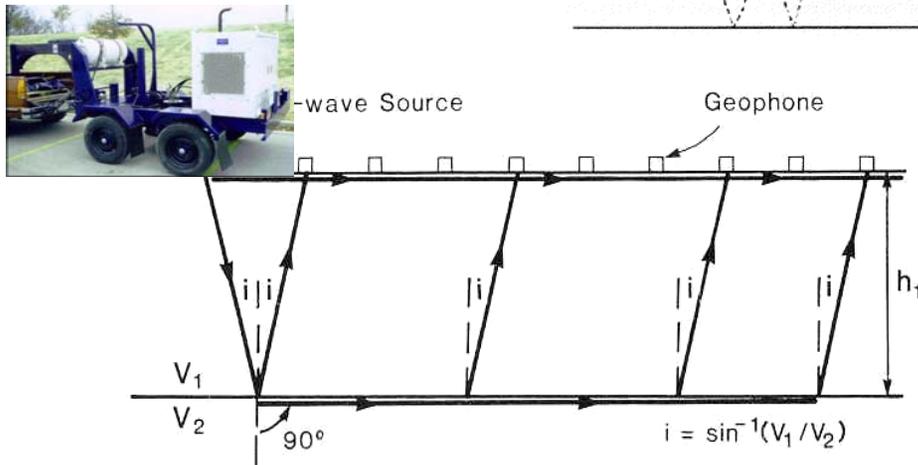
Composite Source Model

Define Site Velocity Model

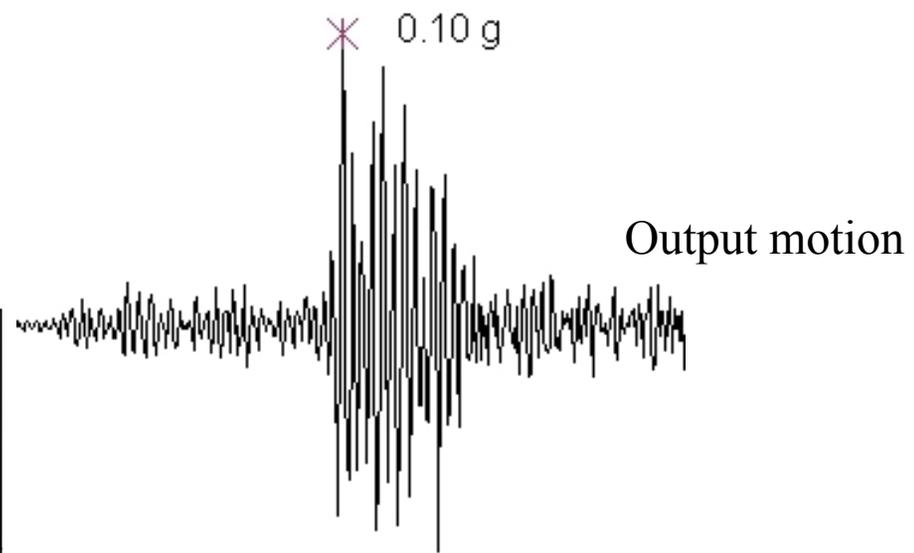
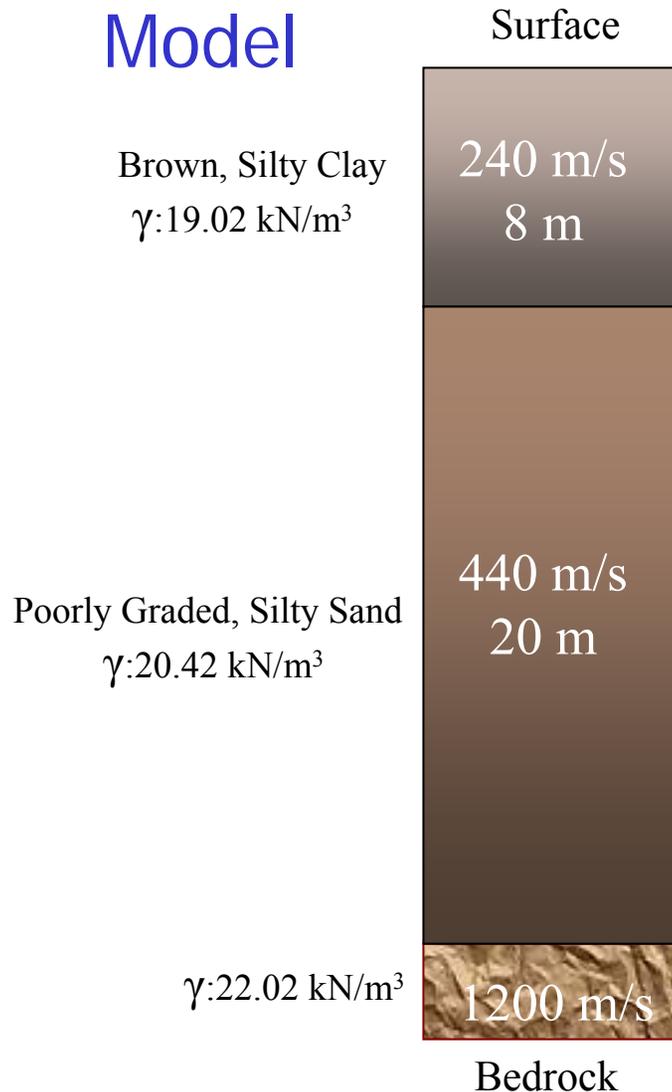
Downhole Seismic S-wave Measurement



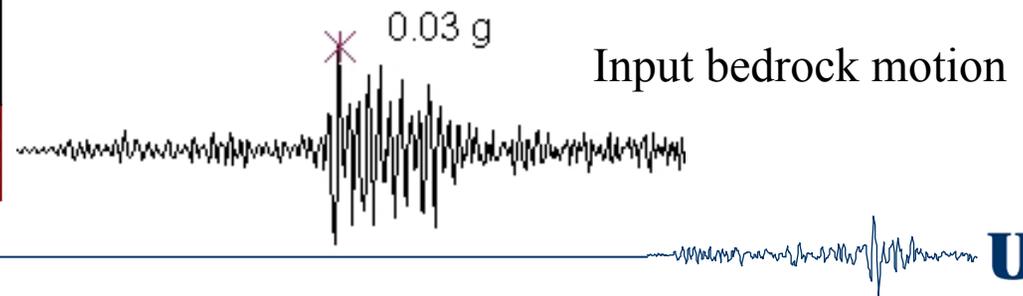
Surface Seismic S-wave Refraction/Reflection



Design Ground Motion Model



Transfer function
SHAKE91



**Field Demonstration Project
for
Real-time Remediation
of
Surface Water, Sediment, and Soil
at the
Paducah Gaseous Diffusion Plant, Paducah, Kentucky**

**Citizens Advisory Board Meeting
March 17, 2005**



Real-Time Remediation

Three (3) phase remediation approach

- 1. Initial Field Characterization**
- 2. Removal**
- 3. Final Status Survey**

Accomplished in one field mobilization

Real-Time Remediation

Phase I - Initial Field Characterization

- **Uses field instruments that are capable of laboratory-quality measurements**
- **Couples instruments with automated GIS mapping**
- **Dose-rate surveys**
- **XRF for metals analysis**
- **Portable GC/MS for volatiles, semi volatiles**
- **Hyper-pure Germanium Detector for rads**

Real-Time Remediation

Phase II - Removal

- **Based on field measurements to identify actual areas of contamination**
- **Field segregation of waste for disposal**

Phase III – Final Status Survey

- **Field instruments deployed and samples obtained to verify cleanup goals are met**

Basis for Real-Time Remediation

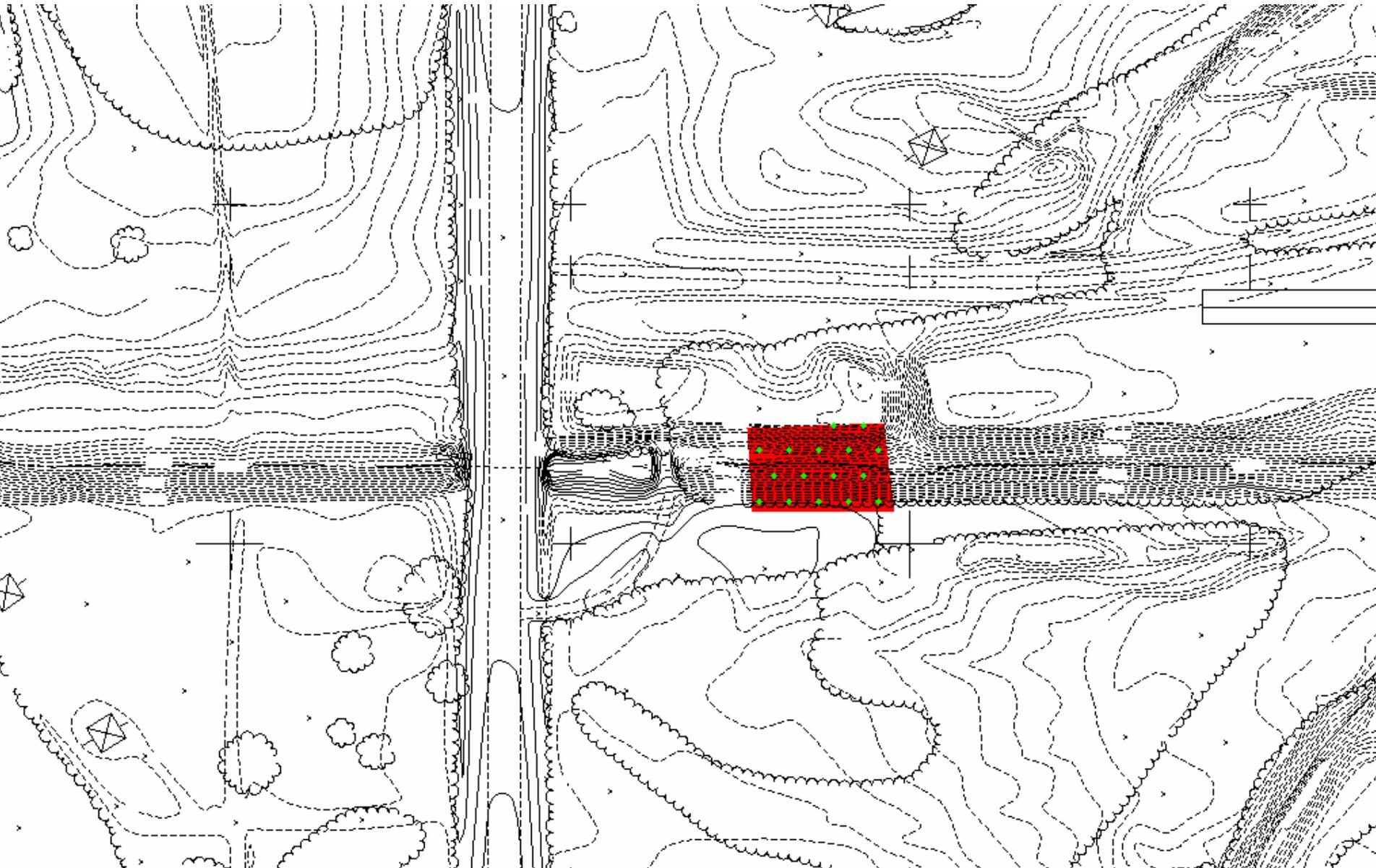
Approach based on

- **EPA's TRIAD Guidance for accelerated site remediation**
- **Argonne National Laboratory's - ASAP - Adaptive Sampling and Analysis Program**
- **Successful at numerous federal and private facilities**
- **Adopted by several states as the standard approach to cleanup**

Real-Time Remediation Benefits

- **One field mobilization to complete vs. months to years for traditional sample – lab analysis-removal cycles**
- **Much greater coverage of area being investigated and remediated than traditional pre-determined sample location methods.**
- **Actually remove contaminated material when it's identified vs. traditional come back to remove a year later (when it's gone downstream)**
- **Real-time cleanup methods reduce costs and accelerate remediation of the outfalls/ditches.**

Outfall 11-Visual Sample Plan



Real-Time Remediation Project Team

KRCEE

Project Management

Argonne National Laboratory

Experience and Resources

Tricord, Inc.

Health and Safety

USEPA Region IV

Regulatory and Project Experience

Kentucky Division of Waste Management

Regulatory and Project Experience

DOE/Navarro Engineering

Site, Regulatory, & Project Experience

**Field Study and Peer Review for
Determination of Holocene
Displacement
at the
C-746-U Landfill
Paducah Gaseous Diffusion Plant
Paducah, Kentucky**

**Citizens Advisory Board Meeting
March 17, 2005**

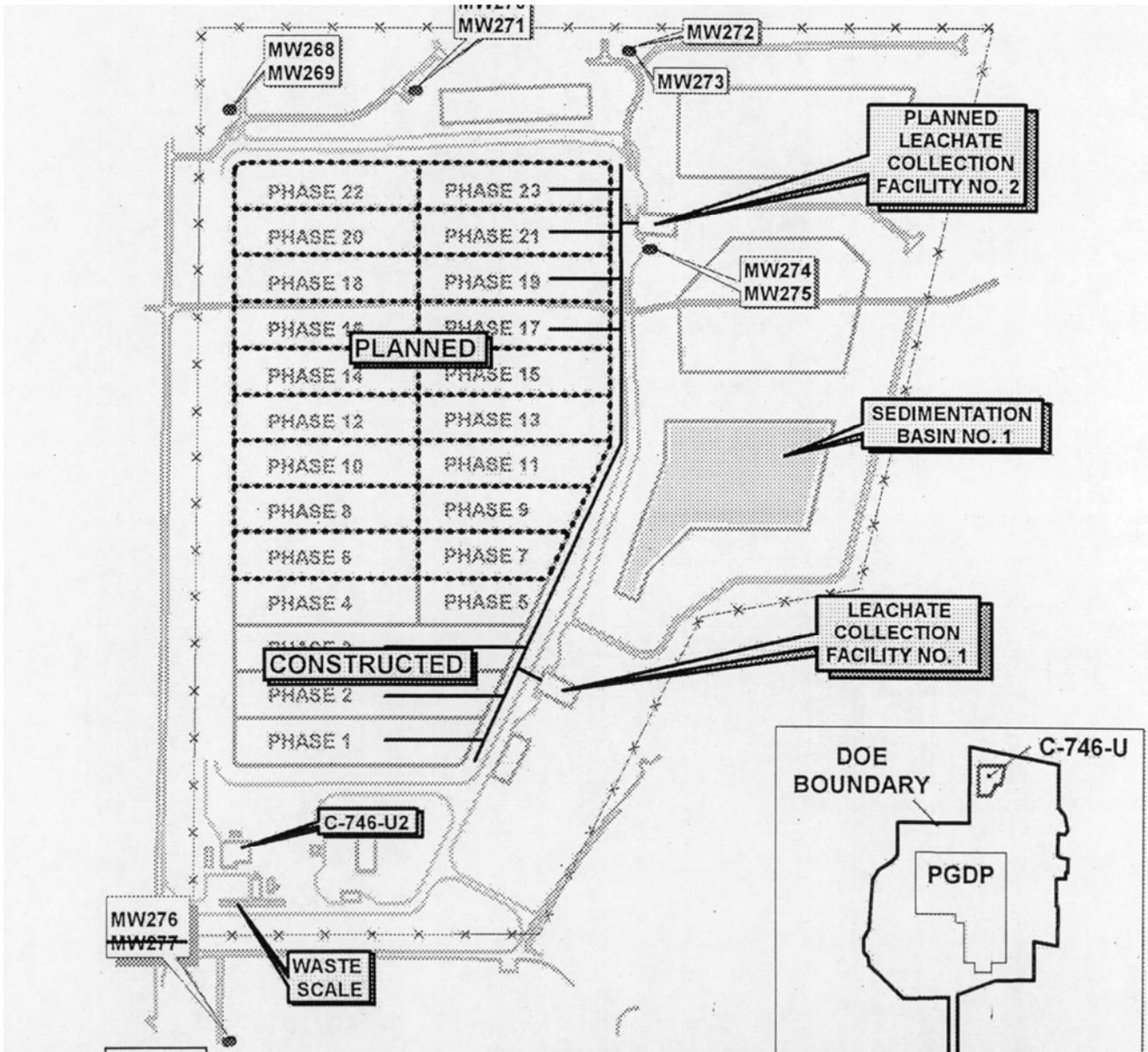


Holocene Fault Investigation

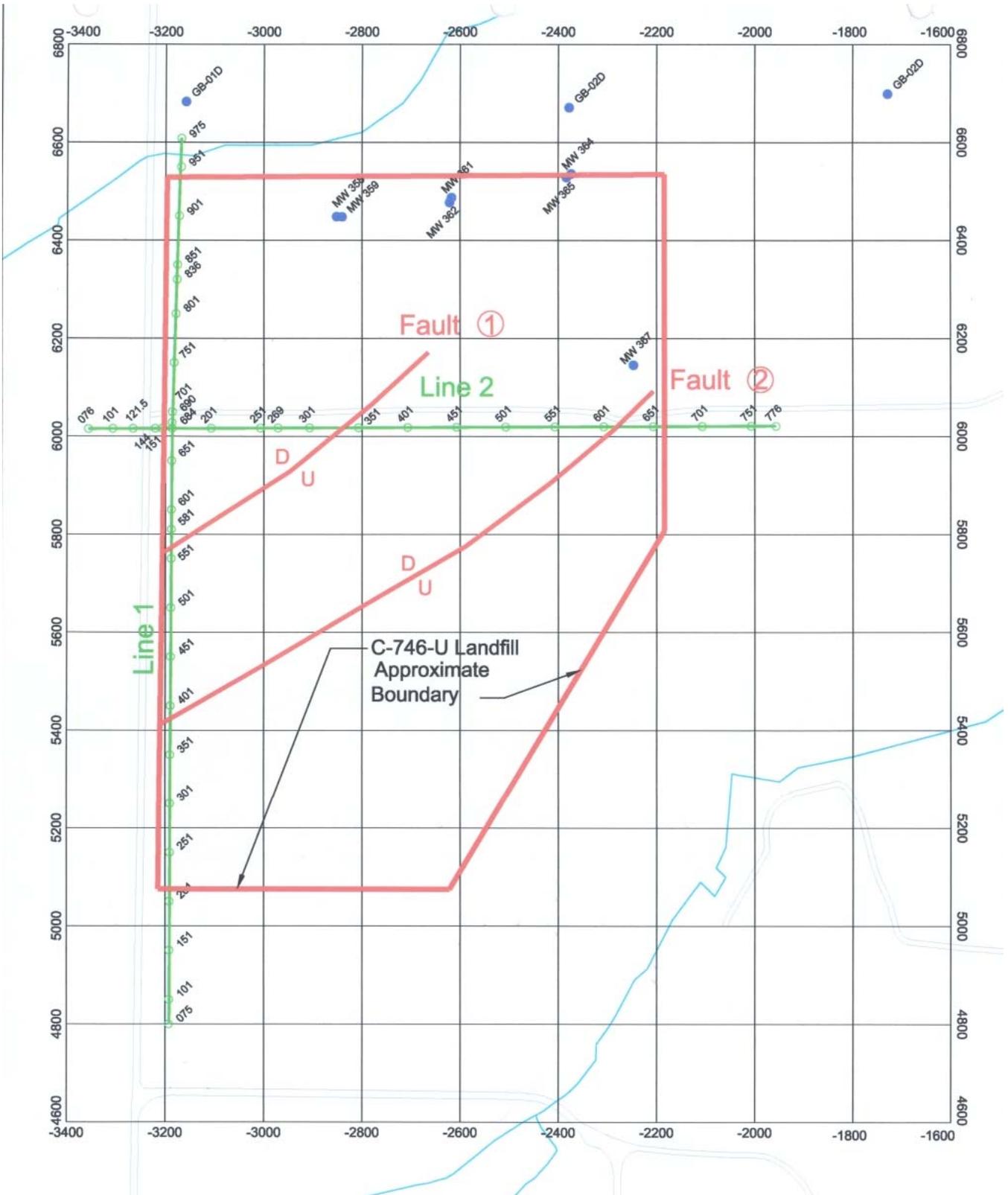
- Additional landfill space is needed at PGDP to dispose of wastes from remediation activities.
- Permit required to expand the existing C-746-U landfill.
- Regulations require that disposal facilities are not located within 200 feet of faults that have exhibited displacement within last 10-11,000 years (start of Holocene time)
- Previous seismic work at site indicates presence of faults under proposed C-746-U Landfill expansion.

Holocene Fault Investigation

C-746-U Landfill



Holocene Fault Investigation



Holocene Fault Investigation

Methods

- **May Deployment**
- **Survey seismic lines**
- **Obtain initial cores along lines**
- **ID Holocene horizon (10-15' bgs)**
- **Collect Holocene Material (HM)**
- **Conduct Carbon-14 analysis**
- **Determine lateral extent of HM**
- **If extent sufficient-collect 80 cores**
- **Date 50 – 60 cores**
- **Transport to KGS Core facility**
- **Correlate cores**
- **Write/Distribute/Publish Report**

Holocene Fault Investigation

KRCEE

Project Management

UK Geological Sciences

Dr. Ed Woolery, Principal Investigator

Tricord, Inc.

Health and Safety

Wm. Lettis & Associates

Worldwide & New Madrid Project Experience

Miller Drilling

PGDP Project Experience

DOE/Navarro Engineering

Site, Regulatory, & Project Experience

Dr. Tish Tuttle (U of Md.) ITR

Dr. Roy VanArsdale (U of Memphis) ITR

Mr. John Nelson (Illinois Geological Survey) ITR

Dr. Dave Amick (SAIC-Augusta) Project Team

Marshall Davenport (Jacobs Eng.) Project Team