

## The Value of Preliminary Assessment Data in a Federal Environmental Restoration Program Setting

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**Keywords:** preliminary assessment, integrated safety management, database management systems

**Abstract:** The objective of this presentation is to communicate to managers and technical staff working on major State and Federally funded environmental restoration programs the value and uses of preliminary assessment (PA) data.

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### Abstract

The presentation will:

- Describe the Federal ERP setting;
- Define the various types of PA data and its limitations;
- Describe the typical application of PA data to the budget planning, integrated safety management and the data quality objectives processes;
- Provide examples of successful and unsuccessful application of PA data.

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### Abstract (continued)

The main issue associated with this process is the proper application of the PA data. Principal investigators and compliance/regulatory agencies are reluctant to utilize the information to minimize sample strategy and design.

Rather, the information can be misused to overstate the problem, which may lead to conservative, overplanned projects.

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### Abstract (continued)

Database management system developments provide the most promising improvements to this process. User-friendly databases are critical to the rapid identification and evaluation of PA data. Field, historical and planning information compiled during the PA process can be quickly retrieved and manipulated for use. Database queries can be executed to extract specific information and datasets can be exported to other applications to ease manual data entry and compilation.

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### The Value of Preliminary Assessment Data in a Federal Environmental Restoration Program Setting

by

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### The Federal Environmental Restoration Program Setting

#### Description

- Numerous Corrective Action Sites requiring potential characterization, remediation and closure
- Sites typically identified through document reviews and field observations
- Little or no information available for sites including potential environmental impact and boundaries
- Original estimates in planning documents are based on sketchy, limited information

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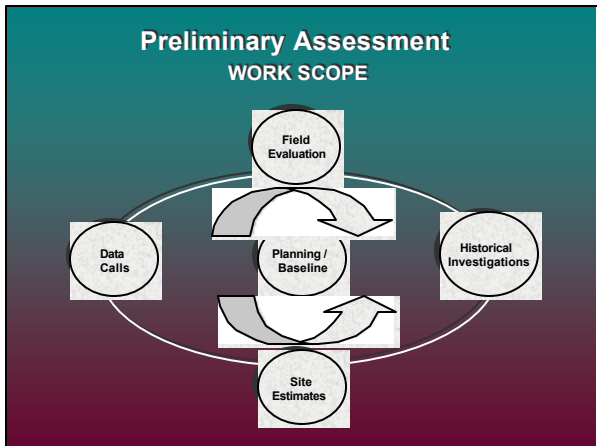
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### Types of Preliminary Assessment (Type of PA Information)

- Field evaluation / verification:
  - First-tier evaluation of potential REC's
- Historical evaluation / summary:
  - Second-tier historical document review, interviews, etc.
- Extended assessment information:
  - Geophysical surveys, radiological surveys, limited-intrusive sampling or screening work




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### Limitations of Preliminary Assessment

- **Limitations:**
  - Field observations offer visual data, but conditions may have changed with time
  - Historical information may be misleading or incomplete
  - Historical survey or sample results must be validated
  - Based on interviews that may include speculation
  - Data must be compared and contrasted to determine level of confidence

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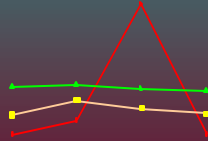
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## Applying Preliminary Assessment Data

- Budget Planning
- Integrated Safety Management
- Data Quality Objectives
- Successful / Unsuccessful Applications



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## PA Data and Budget Planning



- Maintain the estimates for site characterization and closure activities prior to the execution of work, revised after:
  - Field verification
  - Historical investigation
  - Extended assessments
- Information used to address the most likely scenarios which produces a more valid estimate

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## PA Data and Integrated Safety Management



- Provides the most comprehensive information available regarding potential site hazards
- Site hazards are identified early and mitigated during the planning process
- Reduces the overly-planned conservative safety culture that exists at a site where little information is known
- Ensures the best worker safety and comfort possible with practical, justified actions

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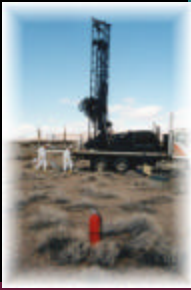
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## PA Data and Data Quality Objectives



- PA investigation information provides data to fill out the DQO worksheets including:
  - Scope of site and boundaries
  - Site description
  - Depth to groundwater
  - Source of release
  - Affected media
  - Chemical/radiological Contaminants of Potential Concern
  - Depth to groundwater
  - Utilities near site
  - Adjoint property or corrective action sites
  - Potentially released materials

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## Successful Applications

- Historical sampling results used to minimize the number of samples required at a site
- Data used to delete a site from the contaminated sites list that will not require corrective actions
- Data used to minimize the type of corrective action process used for characterization
- Enhanced health and safety planning

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## Unsuccessful Applications

- Data misinterpreted resulting in a conservative/worst-case scenario approach to sample design
- Validation techniques for historical sampling not properly reviewed to mitigate regulator comments and issues
- Interviews not properly contrasted to reduce speculation or weak conclusions
- Historical documents used to describe another site in the immediate area rather than the site being investigated

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## Preliminary Assessment Issues

### Proper Application of the Preliminary Assessment Data



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## Proper Application

- Principal investigators and compliance/regulatory agencies are reluctant to utilize the information to minimize sample strategy and design. Rather, the information can be misused to overstate the problem, which may lead to conservative, overplanned projects.



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## Developments

### Developments in the Preliminary Assessment Process



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### Database Management Systems

– User-friendly databases are critical to the rapid identification and evaluation of PA data, such as:



- Field data
- Historical data
- Planning information

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### Database Management Systems (continued)

– Database queries can be executed to extract specific information

– Datasets can be exported to other applications to ease data entry and compilation



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### Conclusion

– PA data can be a powerful tool for principal investigators

– There are limitations

– The most significant value may be safety - related

– The DQO process can be enhanced

– Data must be properly applied to be effective

– Information must be searchable, retrievable and referenced

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