

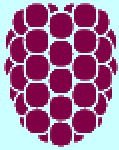
Sustaining Readiness – GIS as the Foundation of an Environmental Management System

Presented by Craig Lees, Project Manager



*Prepared for the NDIA's
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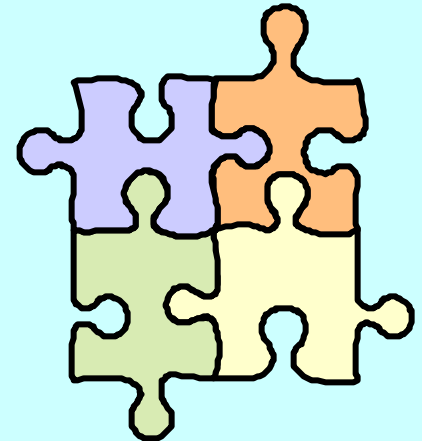
Introduction



- Dewberry Partners with Fort Belvoir
- Project Purpose:
 - Design a GIS-Based Environmental Management System to Facilitate Compliance Management
- Project Scope:
 - Capture Data Relevant to Hazardous Waste, Solid Waste, and Petroleum Sites

Background

- 1990 – Fort Belvoir to Address Compliance Issues with a Focus on Three Program Areas:
 - Hazardous Waste Sites
 - Solid Waste Sites
 - Petroleum Storage/Impacted Sites
- Dilemma: How Does the Army Manage All of This Data?



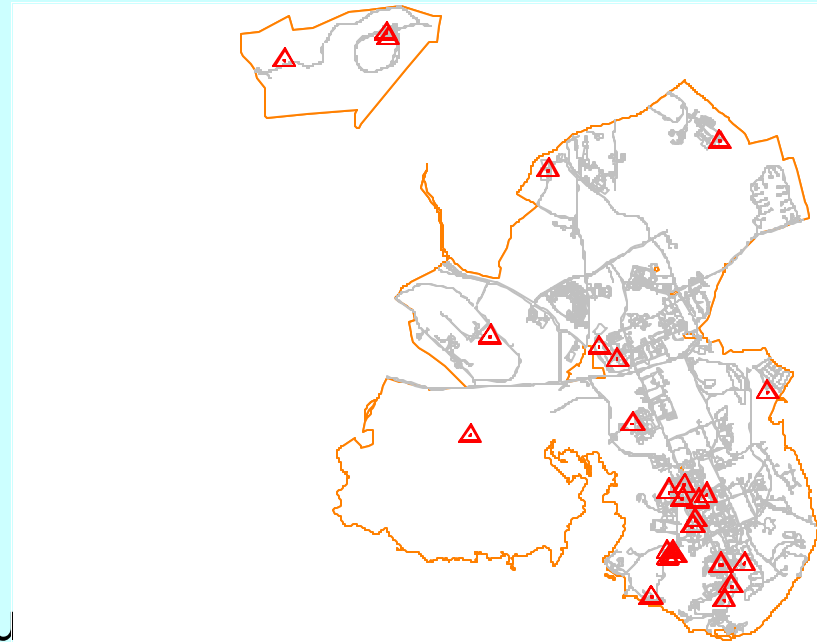
Hazardous Waste - Overview

- 24 Sites Included in FFCA with EPA

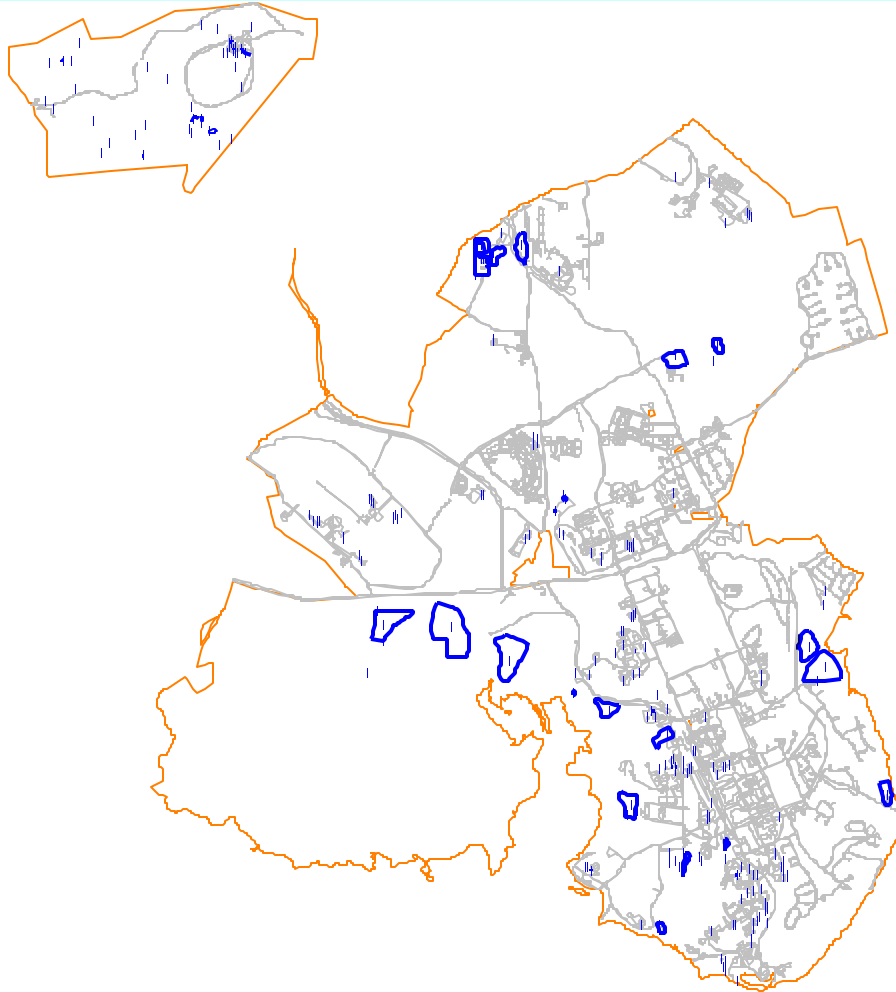
- Fire Training Area
- Battery Acid Disposal Pits
- Container Storage Areas
- ASTs and USTs

- 5 Other Sites

- Waste Ordnance Storage Bu
- Open Burning/Open Detonation Range
- Container and Tank Storage Areas



Solid Waste - Overview



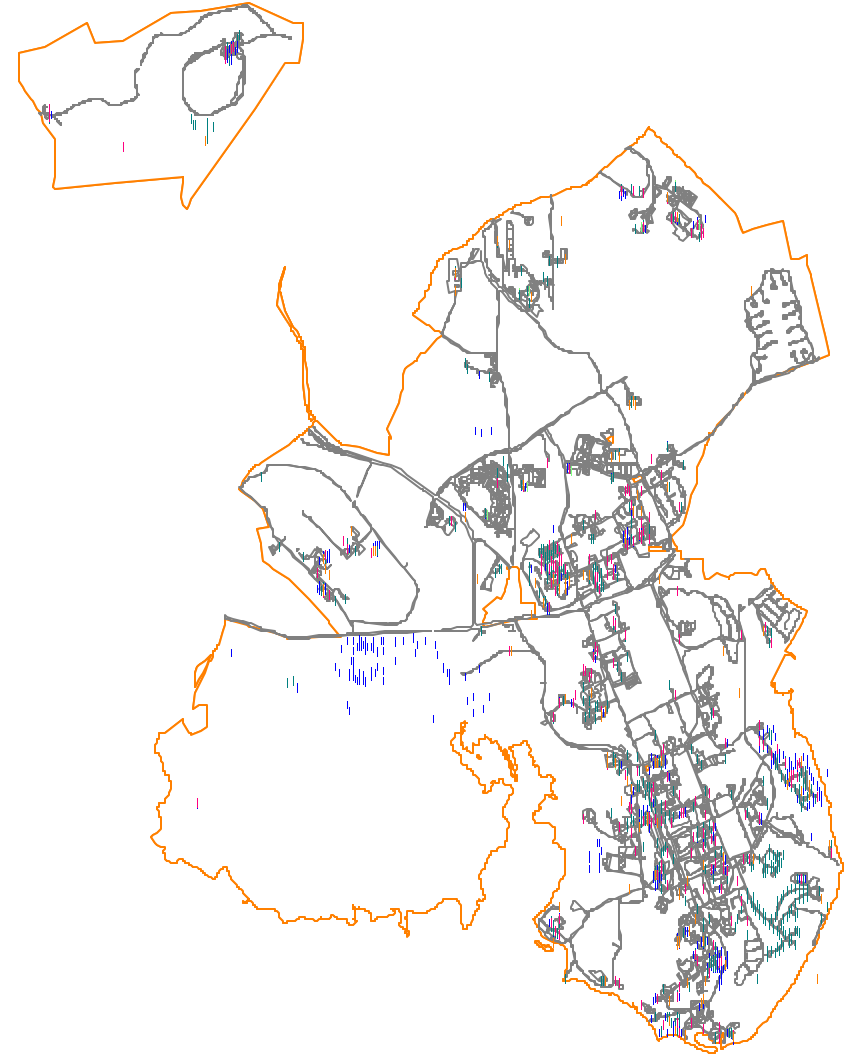
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1988

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Petroleum - Overview

- More Than 500 Sites Require Tank Removal, Replacement, or Upgrade in Accordance with the EPA Requirements
- Over 200 Sites Require Characterization to Determine the Degree and Extent of Contamination
- About 25 Sites Require Long-Term Remediation

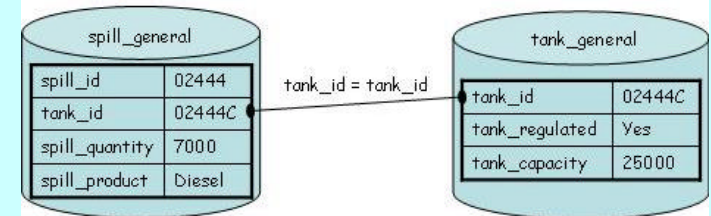


Environmental Management System

- GIS Data Layers

- Complements Existing GIS
- Establishes Geographical Point for All Sites

- Custom Application to Facilitate Data Processing
- Custom Relational Databases

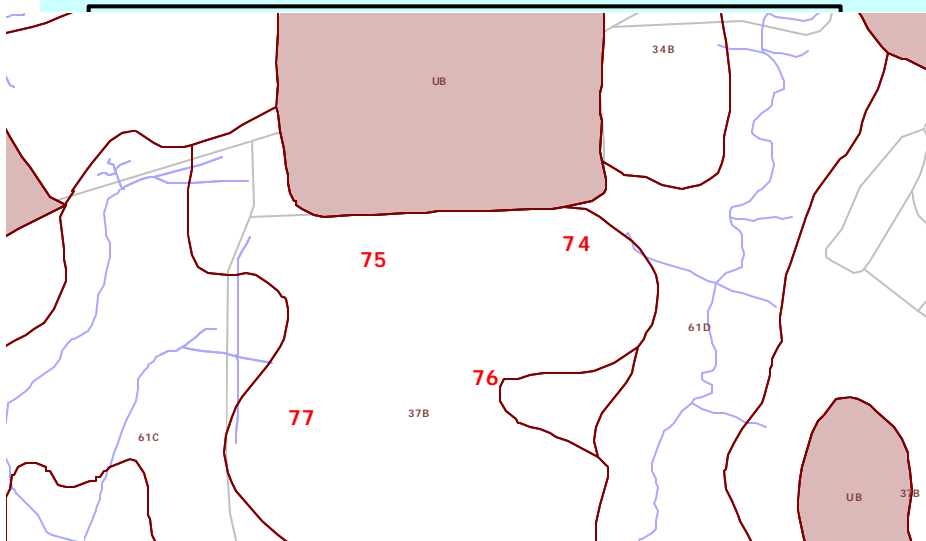


- Digital Library and Index



Hazardous Waste EMS

- Hyperlinks
 - Reports
 - Risk Assessment Results
 - Photos
- Location of Each Background Soil Sample and Associated Analytical Data



Concentrations In Soil			
Sample_ID	Arsenic	Lead	Mercury
74	2.7	11	0.02
75	8.93	19	0.09
76	16.8	96	0.68
77	0.98	1.3	0.04

Solid Waste EMS

- Customized GIS Interface
 - Executes Routine Queries in Single Step
 - Facilitates Access to Electronic Documents
 - Creates Reports For Data Sharing

SWMU Action

- SWMUs - Remediation
- SWMUs - Removal
- SWMUs - Sampling
- SWMUs - Inspection
- SWMUs - Data Review
- SWMUs - Monitoring
- SWMUs - NFA (Pending)
- SWMUs - No Further Action

OK Close

SWMU Status

- SWMUs - Open
- SWMUs - Closed

OK Close

SWMU Toolbar - Attributes Information

SWMU_ID: Building_ID:

SWMU Name:

Reported year operations began:

Reported year operations ceased:

Current status of SWMU:

Recommended activity status:

Associated SWMU:

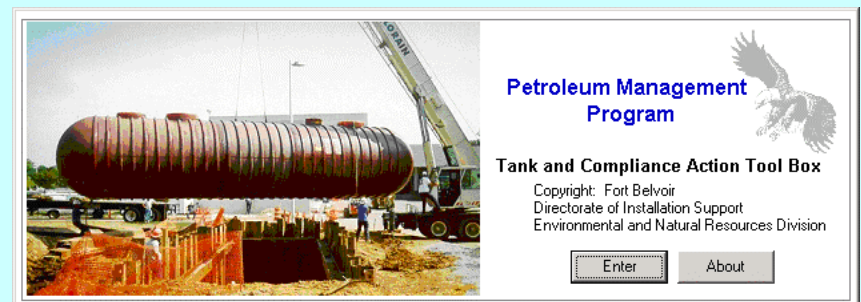
Hyperlink Document:

SWMU Summary Narrative:

Note: Information herein represents a compilation of data from existing documentation provided by Fort Belvoir regarding solid waste management unit (SWMU) sites. Information does not necessarily reflect Dewberry and Davis LLC's professional judgment or recommendations.

Petroleum EMS

- Creates digital library and electronic index for over 700 documents
- Includes a variety of key fields to leverage existing resources
 - Link to Army and regulatory databases
 - Access online owner's manuals and technical documents
- Uses a standalone application that draws on data created for the GIS



Summary

- Benefits
 - Electronic Data Access and Reporting
- Advantages
 - Allows Centralized Data Storage
- Demonstrated Value
 - Case Study: Characterize 120 Sites in 18 Months
 - Saved Over \$2.5M



Q & A

ANY QUESTIONS?