



One Team: Relevant, Ready, Responsive and Reliable

US Army Corps
of Engineers
Huntington District

*WV Ordnance
Works*

*HTRW
Initiatives*



1 February 2006
6th Army Environmental Cleanup Workshop

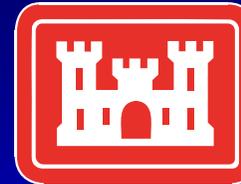


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Partnering



Region



US Army Corps
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Huntington District
Nashville District





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Introduction

- ◆ Constructed 1942-1943
- ◆ Operated 1942-1945
- ◆ Made TNT from toluene, nitric acid, and sulfuric acid
 - Produced 281,000 tons TNT



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Introduction

- ◆ 12 TNT manufacturing lines
- ◆ 2 acid manufacturing areas
- ◆ 2 coal-fired auxiliary power/steam plants
- ◆ 100 concrete TNT storage magazines
- ◆ Admin/shops/housing



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Introduction

- ◆ Site currently used as the McClintic Wildlife Management Area
 - Managed by WV Division of Natural Resources
 - Popular area for hunting and fishing





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Introduction

- ◆ Included on NPL
 - 2 partial deletions removed 1,516 acres
 - 1,184 acres remain



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FY05 Successes

1. Composting Pilot Project
2. Groundwater Treatment System Evaluation & Enhancement
3. Public Involvement
4. ESI-6 Motorpool/Maintenance Area
5. Long-Term Monitoring
6. Five-Year Review



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Composting Pilot Project

- ◆ Former washer/flaker house foundations previously capped
- ◆ Cap #7 was removed and the nitroaromatic-contaminated soil composted



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Composting Pilot Project

- ◆ Composting had been used for Wet Well Area soil
- ◆ Knowledge gained was applied to Feasibility Study for OUs-8 and 9

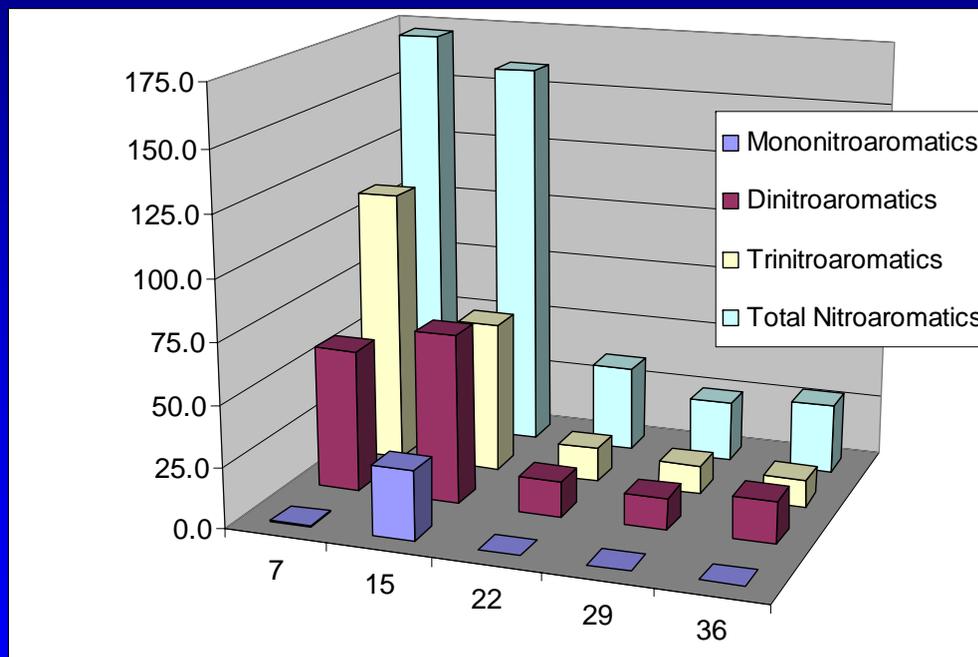


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Composting Pilot Project

- ◆ Average of 25 days to treat to <50 ppm total nitroaromatics
 - Disposed on-site
- ◆ Best recipe used (by weight)
 - 59% soil
 - 39% straw
 - 2% chicken manure





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Composting Pilot Project

- ◆ Bench scale success \neq pilot scale success
- ◆ Add amendments one at a time
- ◆ Water every other day ("squish test")
- ◆ Water management
- ◆ Incremental application of carbon source
- ◆ Heterogeneity of samples (TNT particles)
- ◆ Treatment building required?



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Composting Pilot Project

- ◆ Included in selected alternative for OUs-8 and 9
- ◆ May be used for capped nitroaromatic-contaminated soil in OUs-1, 2, and 3
 - Eliminate O&M costs
 - Achieve Response Complete



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Groundwater Treatment System Evaluation & Enhancement

- ◆ GIS developed for OU-4
 - Data assessment and management improved
- ◆ Extensive mapping and data analysis conducted
 - Performance of system over life of operation thoroughly assessed
 - Sampling parameters and frequencies reduced



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Groundwater Treatment System Evaluation & Enhancement

- ◆ Extraction wells' performance improved
 - Wells cleaned and pump settings optimized
- ◆ Monitoring network optimized
 - Wells removed to avoid redundancy with LTM
 - Wells installed to improve future performance evaluation of system



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Public Involvement

- ◆ RAB web site
 - <http://www.lrh.usace.army.mil/projects/current/derp-fuds/>
 - Includes Public Repository
- ◆ Quarterly fact sheets
- ◆ Annual LRH FUDS newsletter
- ◆ Exhibit at Mason County Fair (on site)
- ◆ Toll-free phone number



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Public Involvement

◆ Public Repository

- PDF files (over 1500)
- Searchable by
 - Area (e.g. OU)
 - AR category/subcategory
 - Year
 - Author or author's affiliation
 - Recipient or recipient's affiliation
 - Word(s) in title



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ESD for the OU-2 ROD

- ◆ OU-2 ROD signed in 1988
- ◆ Required draining and capping of former Wet Well Area
 - Impacts
 - O&M
 - Re-routing of wetlands
 - Not effective



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ESD for the OU-2 ROD

- ◆ Alternative –
remove “hot spot”
 - More effective
(source removed)
 - More economical
(no O&M)
 - Accelerates GW
remediation



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ESD for the OU-2 ROD

- ◆ Biggest hurdle – EPA approval to pursue ESD instead of ROD amendment
 - Guidance appeared to require ROD amendment
 - Cost \$50K more for ROD amendment
 - ROD amendment would take much longer
- ◆ Thanks to our partnering efforts with USEPA, they concurred and signed!



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ESI-6 Motorpool & Maintenance Area

- ◆ Property currently used as the WV State Farm Museum
- ◆ Excavated petroleum-contaminated soil, but remaining contamination extended below caretaker's mobile home



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ESI-6 Motorpool & Maintenance Area

- ◆ Delineation performed
- ◆ WVDEP performed modeling
 - Determined that remaining contamination caused no unacceptable risk
 - No additional excavation
- ◆ Consensus agreement signed 10 Mar 05
- ◆ Saved \$136K



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Long-Term Monitoring

- ◆ Reduced frequency of sampling some wells from annual to biennial
 - Reduced annual LTM from 64 to 37 wells
 - Annual savings of \$100K
- ◆ Removed overlap between LTM and groundwater treatment sampling
 - Annual savings of \$37K



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Five-Year Review

- ◆ Third FYR completed
- ◆ Prepared by USACE Huntington District in-house personnel
- ◆ Accepted by USEPA Region III