

**US Army Corps  
of Engineers  
Baltimore District**

# **Fort Detrick Remedial Investigation/Feasibility Study**

**Restoration Advisory Board Meeting  
18 December 2002 7:30 PM  
Fort Detrick, Frederick, Maryland**



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# Fort Detrick

## Area B-11 Pit 1 Removal Project Status

- No lost time accidents (664 days)

**SITUATION AS OF DECEMBER 17:**

- To date the pit #1 is 90% complete.

-Removed 1854 tons of waste and contaminated soil from the pit (107 rollofs)

-175 tons non hazardous overburden to Fort Detrick's landfill

- Excavation in freeze wall area complete (bottom of excavation shows little VOC contamination (no TCE or PCE))

- Additional investigation on the perimeter of Pit 1 is occurring to confirm waste removal.

- Freeze wall power now off since end of excavation is within 6-weeks

Examining Perimeter of Excavation



Draining Freeze Wall Brine



Bundle of Vials Removed





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# Fort Detrick

## Area B-11 Pit 1 Removal Project Status

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### Container Removal Summary

- A total of 40+ 55-gallon drums in various stages of decomposition were removed as of 12/17/02 and sent out as hazardous waste
- Recovered 20 containers(>1 gal) with contents
- 6 were 55 gal drums with contents,
  - Resulting in:
    - 13 overpacks of which 8 are 55 gal overpacks
- Additional recovery:
  - 51 cylinders
  - Misc. copper tubes with lab pipettes (going to Detrick incinerator)
  - 113 vials
  - 12 drums and metal containers have been tested
- Results -
  - Picloram (pesticide) was identified in three containers
  - 2-s-butyl-4,6-dinitrophenol (pesticide) in two containers
  - Dioctyl phthalate – used in plastics and aluminum silicate (inorganic unknown use) – in one container
  - Poly(butyl acrylate) – Polymer – in one container
  - Chlorophenyl isocyanate – intermediate for dyes and pharmaceuticals – in one container
  - Poly(ethyl acrylate) – polymer – in one container
  - Q-thane (poly ester urethane resin) – in one container
  - Tolyene 2,4-diisocyanate (TDI) - Polyurethane foams and coatings – in one container
  - Ankerite (Commercial Materials Painter Minerals) – in one container





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## Area B-11 Pit 1 Removal Project Status (Continued)

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- Air treatment units (HEPA filters) are tested routinely and indicate no harmful pathogens have been released inside or outside the structure.

- Air treatment filtration unit 3 (HEPA 3) failed several hot DOP tests and was replaced. This unit passed DOP tests.

### Production Delays

Removal action is now focused on making sure all waste has been removed.





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Area B-11 Pit 1 Removal Project Status  
Explanation of Significant Differences (ESD)

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The ESD is required to be produced for the Area B-11 Pit 1 project due to process changes that have occurred in the project since the Decision Document was originally agreed to in July 2000.

Significant Differences Include:

- The total volume of material to be excavated and disposed has increased from 546 cubic yards to 2,355 cubic yards.
  - This condition required that the pit materials be removed in phases and a larger freeze wall was needed for Pit 1.
- Reactive and explosive materials were found in Pit 1.
  - This condition required improvements for remote crushing and sorting of containers as well as air treatment system improvements.
- Biological wastes were found in Pit 1
  - This condition required:
    - Air handling improvements (Filtration upgrade)
    - Soil milling improvements
    - Dust monitoring and control
    - Use of disinfectants
    - Segregation of medical wastes
    - Lab analysis for biological pathogens
- The explanation of Significant Difference (ESD) document is complete pending review from regulators.
- The ESD document will be included in the Administrative Record and its availability will be published in local papers



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## Area B-11 Pit 1 Removal Project Status (Continued)

- **New Schedule**

- Pit 1 excavation, pit backfill, equipment decontamination and confirmation sampling to be completed by April 2003.

### Funding

- Funds are programmed to available to complete Pit 1.





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# Fort Detrick

Area B-11 Pits 2, 3, 4 Removal Project Status  
Alternatives Analysis

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Data from the RI and the test trenching indicate that substantial contaminated material remains in Pits 2, 3, and 4.

An alternatives analysis (AA) is being performed as an internal review document by the Army to assure funds are being utilized appropriately.

The AA includes a detailed cost analysis for several alternatives for Pits 2, 3, and 4. The justification for continuance of work at Pits 2, 3, and 4 and the cost analysis in the AA are intended to provide enough information for USAEC to release of funds for the remaining pits.

- 5 alternatives are being considered:
  - Alternative 1 - No Action
  - Alternative 2 - Surface Containment (RCRA Cap)
  - Alternative 3 - Containment (RCRA Cap, Frozen Soil Barrier)
  - Alternative 4 - Containment (RCRA Cap, Chemical Grout Barrier)
  - Alternative 5 - Excavation and Off-Site Incineration



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## Alternatives Analysis (Con't)

The removal action alternative (5) is the preferred action by Fort Detrick and was planned in the original Decision Document (with no freeze wall). This alternative complies with NCP criteria and is permanent.

NCP Criteria	Alternative 1 No Action	Alternative 2 Surface Containment (RCRA Cap)	Alternative 3 Containment (RCRA Cap, Frozen Soil Barrier)	Alternative 4 Containment (RCRA Cap, Chemical Grout Barrier)	Alternative 5 Excavation and Off-Site Incineration
1. Protects human health and the environment?	No	No	Yes	Yes	Yes
2. Complies with ARARs/TBC guidance?	Chemical-specific to be evaluated during RI/FS following completion of this action. No action or location-specific ARARs.	Chemical-specific to be evaluated during RI/FS following completion of this action. Does not meet regulations pertaining to landfill construction. Complies with location-specific ARARs.	Chemical-specific to be evaluated during RI/FS following completion of this action. Complies with action and location-specific ARARs.	Chemical-specific to be evaluated during RI/FS following completion of this action. Complies with action and location-specific ARARs.	Chemical-specific to be evaluated during RI/FS following completion of this action. Complies with action and location-specific ARARs.
3. Long-term Effective and permanent?	No	No	Effective, not permanent.	Effective if barrier is competent, not permanent.	Yes
4. Reduces toxicity, mobility and volume through treatment?	No	No	Reduces mobility, not volume or toxicity.	Reduces mobility if barrier is not competent, not volume or toxicity.	Yes
5. Short-term effective?	N/A	Yes	Yes	Yes	Yes, however, precautions will be necessary due to risks to site workers and the public due to the potential presence of intact bottles and drums in the disposal pits.
6. Implementable?	Yes	Yes	Yes	Yes	Yes
7. Acceptable to State?	No	State has indicated that the capping alternatives are not acceptable without extensive design to account for subsidence potential (i.e., tie cap into solid bedrock to provide support).	State has indicated that the capping alternatives are not acceptable without extensive design to account for subsidence potential (i.e., tie cap into solid bedrock to provide support).	State has indicated that the capping alternatives are not acceptable without extensive design to account for subsidence potential (i.e., tie cap into solid bedrock to provide support).	Yes
8. Acceptable to Community?	No	No	No	No	Yes



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Area B-11 Pits 2, 3, 4 Removal

- **Schedule**

- **Setup Winter 2003**
- **Operations to begin May 2003**
- **Operations complete Fall 2003**

- **Funding**

- **Fort Detrick will be briefing the DA on the project in an effort to expedite authorization and release of funds.**
- **Waiting on USAEC approval on release of funds for Pits 2, 3, 4.**



# Fort Detrick Area A LTM Update

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## Pending Schedule:

Area A LTM Sampling (2<sup>nd</sup> round)  
LTM (Five Year Review)

## Estimated Completion Date

December 02 / Jan 03  
July 06

## Items Completed:

Area A Long-Term Monitoring (LTM) Plan  
Area A LTM Sampling (1<sup>st</sup> round)  
Semi-Annual Sampling Report (May 02 Sampling)

## Completed Date

April 02  
May 02  
November 02



# Fort Detrick RI/FS

## Area B Update

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### DOCUMENTS

#### COMPLETED

Engineering Evaluation/Cost Analysis (EECA) Area B-11 Chemical Waste Disposal Pits	(Feb 00)
EECA (Proposed Plan)	(May 00)
EECA (Decision Document)	(July 00)
Public Involvement and Response Plan	(July 00)
Chemical Oxidation Bench-Scale Test Work Plan	(Oct 00)
Photographic Analysis (USEPA EPIC Study)	(Mar 01)
Chemical Oxidation Bench-Scale Test Report (Final)	(July 01)
Area B Background and B-20 North Follow-On Work Plan	(Nov 02)

#### PENDING

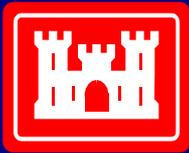
Groundwater Pilot Test Field Technology Assessment Work Plan
Area B Additional Investigation Work Plan
Dye Trace Study Work Plan (Final)
RI
FS
PP
DD
RD
RA
Area B-1 Site Close-Out Document
Area B-18 Site Close-Out Document
Explanation of Significant Differences – B-11 Pit 1 Removal Action

#### Completion Date

Pending Funding
Pending completion of Background Study
Pending Funding
Schedule being developed
Pending Completion of Background Study
Pending Completion of Background Study

December 02

\* Additional sites are being evaluated for Close-Out Documents.



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# Fort Detrick RI/FS

## Area B Update

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### Completed and Planned Field Activities

#### COMPLETED TASKS SINCE LAST MEETING

- Quarterly Sampling – November 02

#### PLANNED

- Additional periodic residential and on-post well and surface water sampling - Every 3 months.
- Dye Trace Study - Schedule being developed (funding dependent).
- Water Treatment System (Krantz) - On-hold pending funding.
- Area B Background Study to assess metals concentrations in background for comparison with site data.
- Additional Residential well research downgradient of Area B to aid in monitoring groundwater contamination.

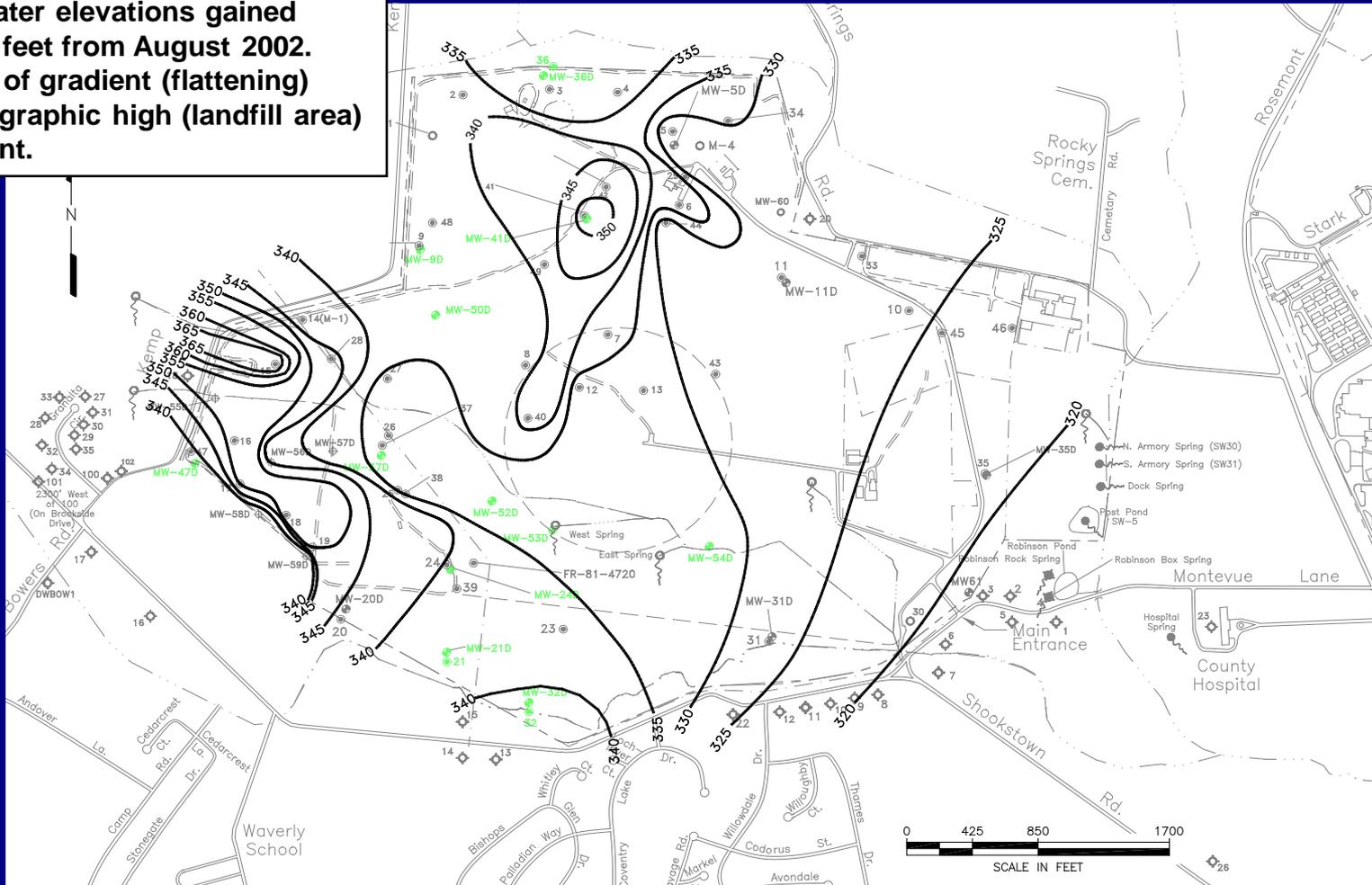


# Area B Water Levels

## November 4, 2002

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Groundwater elevations gained about 0.5 feet from August 2002. Decrease of gradient (flattening) near topographic high (landfill area) still evident.





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# Area C Update

- Currently finalizing risk assessment (soils and groundwater).
- Final Report has been funded.
- Scheduled to be completed Winter 03.

