

**US Army Corps  
of Engineers  
Baltimore District**

# **Fort Detrick Installation Restoration Program**

**Restoration Advisory Board Meeting  
11 February 2004 7:30 PM  
Fort Detrick, Frederick, Maryland**



**US Army Corps  
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Baltimore District

# Fort Detrick

## Area B-11 Removal Project Status

- **No lost time accidents (1106 days)**
- **Removed 2005 tons of waste and contaminated soil from Pit 1. 52 cylinders (39 intact) recovered from Pit 1.**
- **Overburden removed from Pits 2, 3, and 4 from 8 May through 30 May 2003**
- **Excavation of waste materials from Pit 2 commenced 5 June 2003 and ended 11 June 2003. Pit 3 excavation commenced 16 June 2003 and ended 1 August 2003 (completed within surveyed limits based on trench delineation).**
- **Final excavation activities completed 17 November 2003.**



**Pit 1 Completed Grade**



# Fort Detrick

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

**Excavation of Pits 2, 3, and 4 Completed!!**

**Wastes recovered during Phase II excavation (Pits 2, 3 and 4) include:**

- Small glass containers
- Glass/plastic
- Medical waste
- Metal fragments
- Five 5-gallon pails
- Small laboratory chemical bottles
- Two vials containing white-yellowish powder
- Approximately twenty (20) intact cylinders and 22 perforated cylinders ranging in size from 7/8-8" diameter by 5-25" long have been recovered to date. Some intact or partial valve assembly. All have been cataloged and secured.



**Scalpels Recovered from Pit 2**

**Approximately 1643 tons of soil (9 non-hazardous overburden roll-offs for Detrick landfill) have been loaded from Pits 2, 3, and 4 into roll-off boxes as of 11 February 2004.**



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## Area B-11 Pits 2, 3, 4 Removal Project Status (Continued)

- Pits 2, 3, and 4 Schedule

- Startup activities: 21 March 2003 – 02 May 2003
- Excavation: 08 May 2003 – 17 Nov 2003
- Demob/Decon: 18 Nov 2003 – 13 Feb 2004

- Funding

- Removal action was fully funded in June 2003



Pit 4 – 4 Dec 2004 (pending backfill)



Pits 2 and 3 – 4 Dec 2003

- Cylinder Disposition Schedule

- Complete Work Plans: 01 Dec 2003 – 6 Feb 2004
- Prove-out Biological Sterilization Process: 15 Dec 2003 – 20 Feb 2004
- Cylinder Disposition: 23 Feb 2004 – 2 April 2004
- Final Decon/Site Restoration: 5 April 2004 – 30 April 2004

- Funding

- Cylinder disposition funded – Contract to Shaw in place 29 September 2003
- Cylinder disposition subcontract in place 2 December 2003.



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# Fort Detrick

## Area B-11 Pits 2, 3, 4 Removal Project Status (Continued)

- **Decontamination of Tent is Underway**

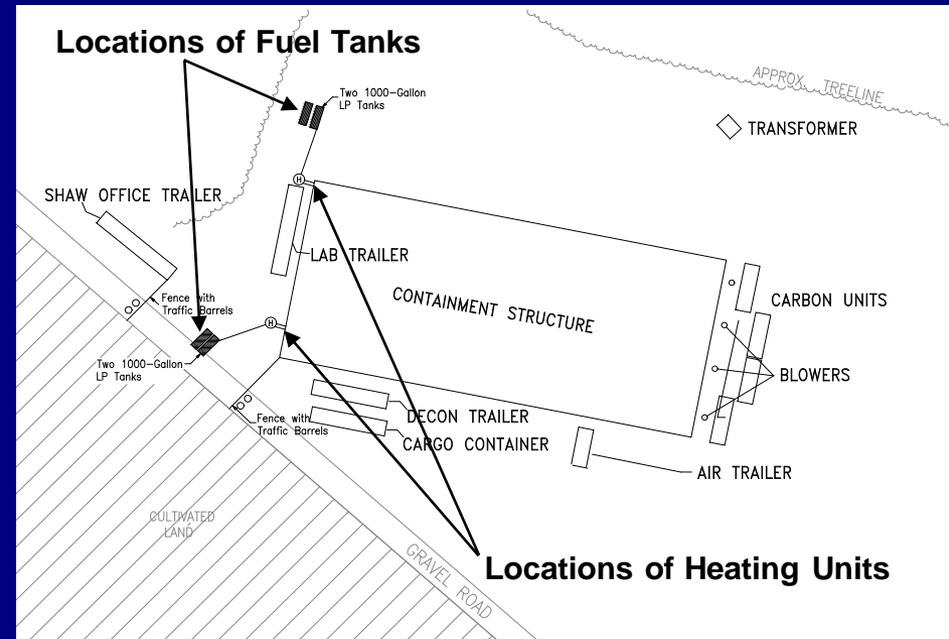
-Sandia decon formulation, which is hydrogen peroxide based, was used for decon to minimize corrosion and damage to the containment structure. The formulation loses its effectiveness below 40 degrees Fahrenheit. Therefore, two liquid propane fueled external heaters were used to heat the interior of the CS. The heating ducts were tied into two sets of fresh air intakes. Two blowers were operated to maintain negative pressure.



**Fuel Tank**



**Heating Unit/Manifold**





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# Fort Detrick

## Area B-11 Cylinders, Overview

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### Approximately 94 Cylinders Removed during Area B-11 Removal Action

- 52 from Pit 1; 42 from Pits 2, 3, 4 - **59 intact cylinders and 35 perforated cylinders**
- Size range from 7/8" to 8" diameter and 5" to 25" in length

### X-ray and Portable Isotopic Neutron Spectroscopy (PINS) Evaluation Performed on Five of the Cylinders

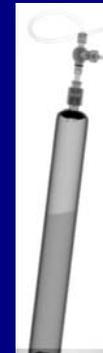
- X-Rays indicated cylinders contain liquids and gases
- PINS analysis indicated weak chlorine peaks and no signatures that would indicate the presence of chemical warfare material

### While the Contents of the Majority of the Cylinders are Unknown, the Potential Exists that they Contain Biological Agents or Chemical Agents

- However, based on PINS analysis, it is likely that most contain soil and water residues



Radiography of  
cylinders recovered





# Fort Detrick

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## Area B-11 Cylinder Disposition Process

Remove Cylinder from  
Storage Locker and  
Prep the Exterior

Place Cylinder Into  
CMD Vessel

Drill Cylinder and  
Collect Filtered Gas Sample

Analyze Gas by  
GC/MS and FTIR

Direct Cylinder  
Gasses (filtered) to  
Appropriate  
Processing System

Solids/  
Liquids/  
Carcasses

Autoclave Cylinder  
and Contents

Remove from CMD  
In a Container, Handle  
Contents, De-valve or Cut

Analyze  
Solids/Liquids  
By  
GC/MS/FTIR/HAZCAT

Processing Wastes  
Reagent/Gas

Dispose Non-Haz Cylinder Contents and  
Unrestricted Cylinder Carcasses at Fort  
Detrick Medical Waste Incinerator

Repackage Hazardous Chemical Waste  
Materials and Unrestricted Cylinder  
Carcasses

Dispose Hazardous Chemical Wastes  
and Unrestricted Cylinder Carcasses At Off-site  
Disposal Facility

Re-Autoclave Restricted  
Cylinder Carcasses

Dispose Restricted Cylinder Carcasses  
At Area B Landfill

Characterize and Repackage  
Haz. Processing Wastes  
And Non-Processable Gasses

Dispose Hazardous Processing  
Wastes At Off-site Disposal Facility



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# Fort Detrick

## Area B-11 Cylinder Disposition Autoclave Prove-Out

### CMD Autoclave Prove-Out

- CMD autoclave prove out started
- Vacuum applied and steam introduced
- Autoclave conditions (at least 15 psi and 250 **Check**)degrees Fahrenheit) achieved within 15 minutes in cylinders
- Tests with empty and full cylinders yield similar rapid heating
- Validation of sterilization tests performed last week and this week with spore strips
- Final results and prove-out of sterile gas filtration expected no later than the end of next week

Large and Small Cylinder Management Device  
to be Equipped with Autoclave





# Fort Detrick Area A LTM Update

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## Pending Schedule:

LTM (Five Year Review)

## Estimated Completion Date

July 06

## Items Completed:

Area A Long-Term Monitoring (LTM) Plan

Area A LTM Sampling (1<sup>st</sup> round)

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

Semi-Annual Sampling Report (May 02 Sampling)

Area A LTM Sampling (3<sup>rd</sup> round)

Semi-Annual Sampling Report (June 03 Sampling)

Final Area A LTM Sampling Report (May 03 Sampling)

Draft Area A LTM Sampling Report (Oct 03 Sampling)

## Completed Date

April 02

May 02

June 03

November 02

October 03

November 03

December 03

February 04 (Army  
Review)



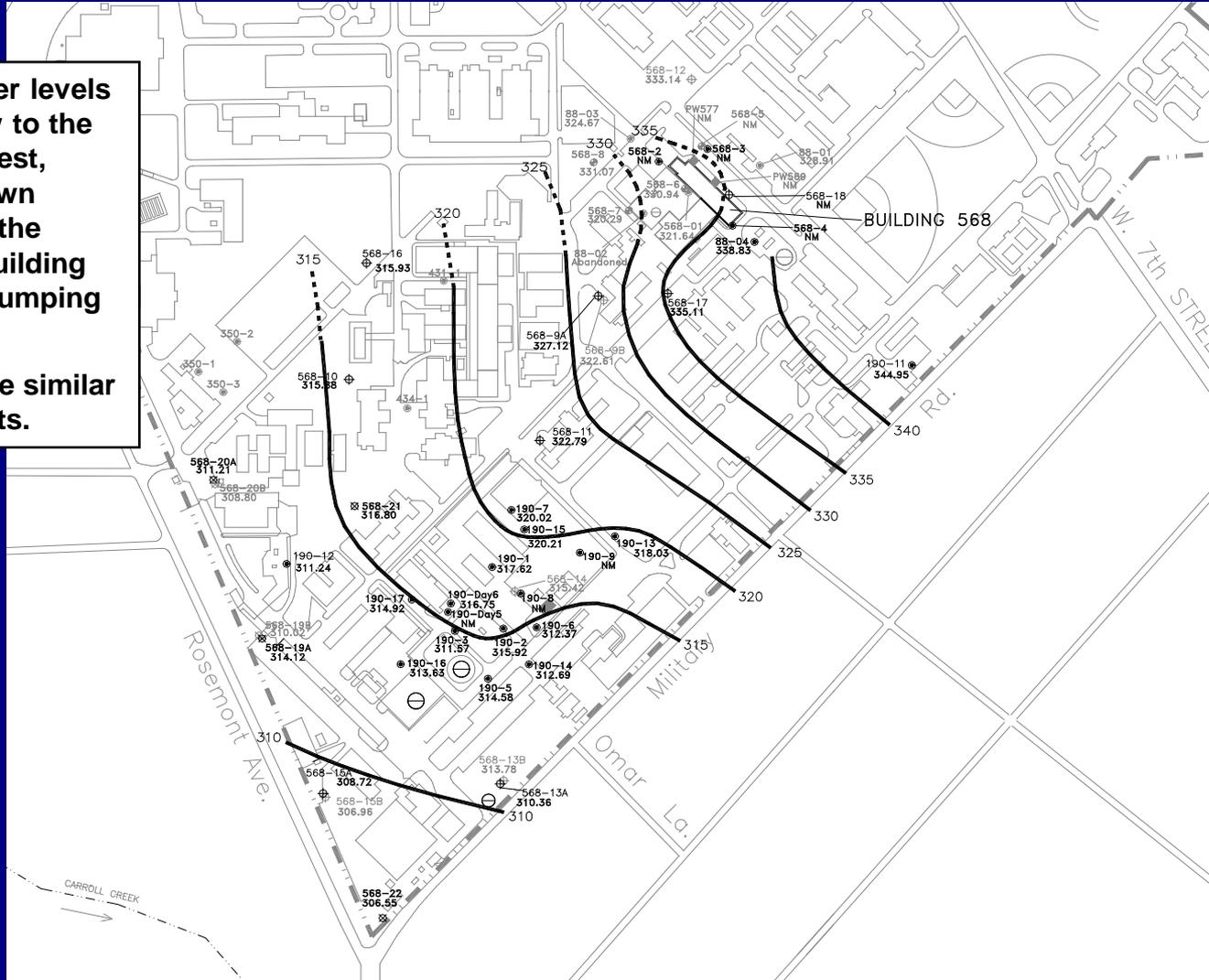
# Area A Shallow Water Levels

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20 October 2003

Shallow water levels indicate flow to the south and west, with drawdown influence in the vicinity of Building 568 due to pumping wells.

Gradients are similar to past events.





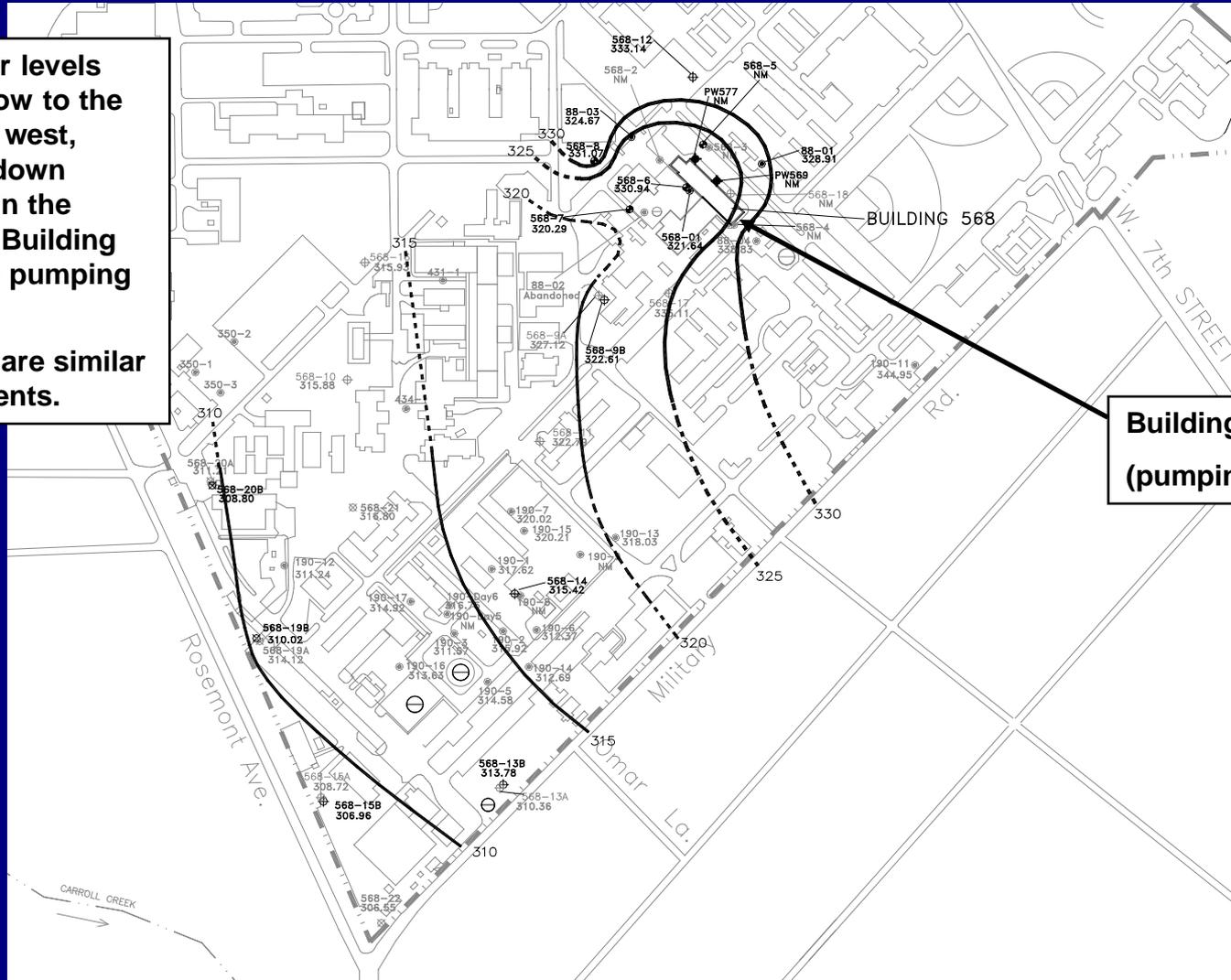
# Area A Deep Water Levels

US Army Corps  
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20 October 2003

Deep water levels indicate flow to the south and west, with drawdown influence in the vicinity of Building 568 due to pumping wells.

Gradients are similar to past events.



Building 568  
(pumping in this area)



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# Fort Detrick RI/FS Area A

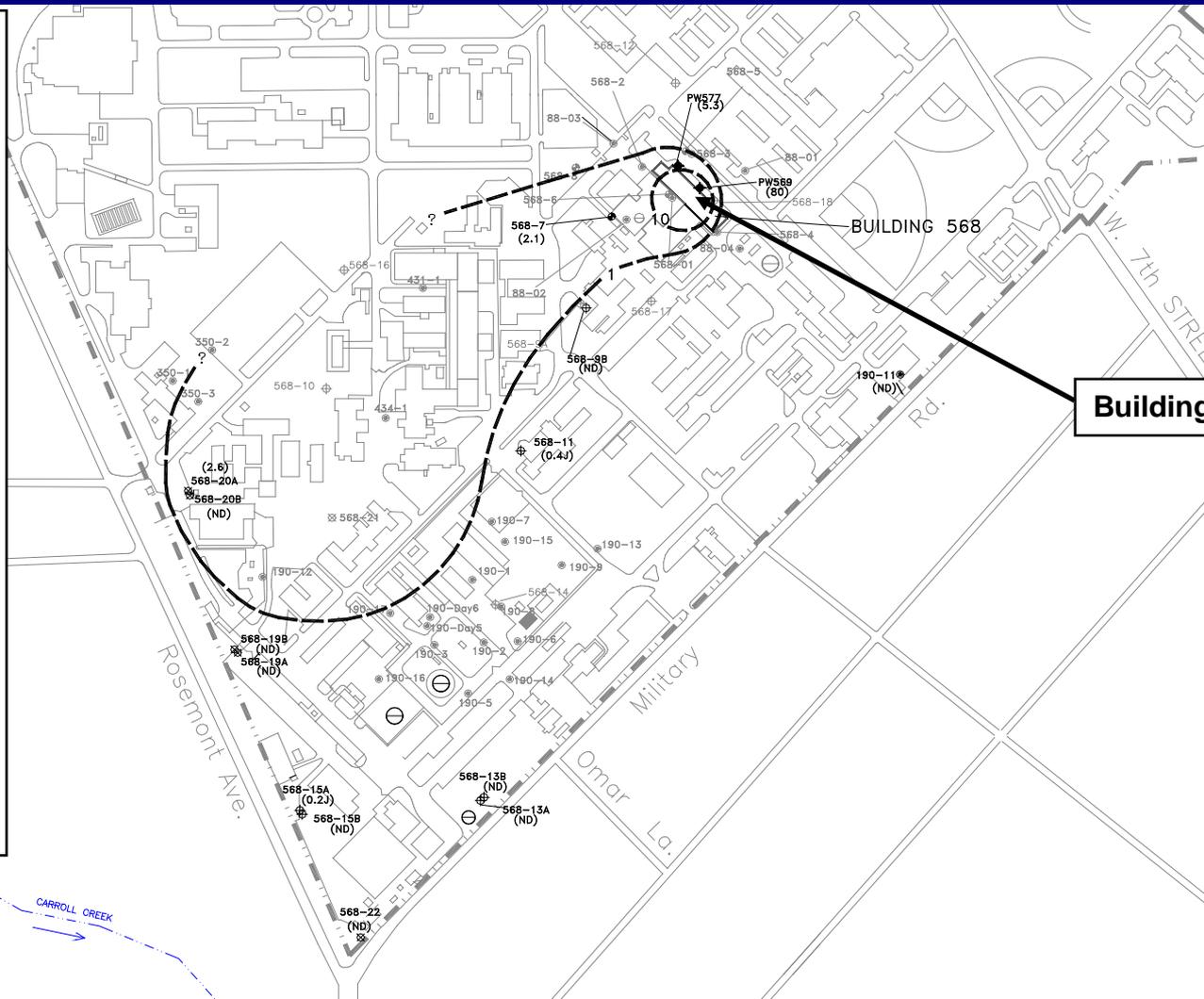
## Sampling Results

### TCE Plume (October 2003)

TCE levels in October 2003 were similar to June 2003 levels.

Levels in production wells did not change significantly (PW569 from 62 in June 2003 to 80 ppb in October 2003 and PW577 from 5.5 in June 2003 to 5.3 ppb October 2003).

All levels were non-detect in boundary wells with the exception of 568-20A (2.6 ppb) and 568-15A (0.2 ppb), both below the action level of 5 ppb.



Building 568



# Fort Detrick RI/FS

## Area B Update

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### COMPLETED (none new)

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

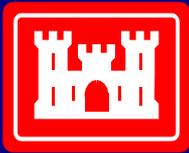
### Completion Date

Pending Funding  
Pending completion of Background Study  
Pending Funding  
Schedule being developed  
Pending Completion of Background Study  
Pending Completion of Background Study  
Awaiting Army Signature  
Awaiting Army Signature

Area B Background Study

March 04

\* 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

- None

#### PLANNED

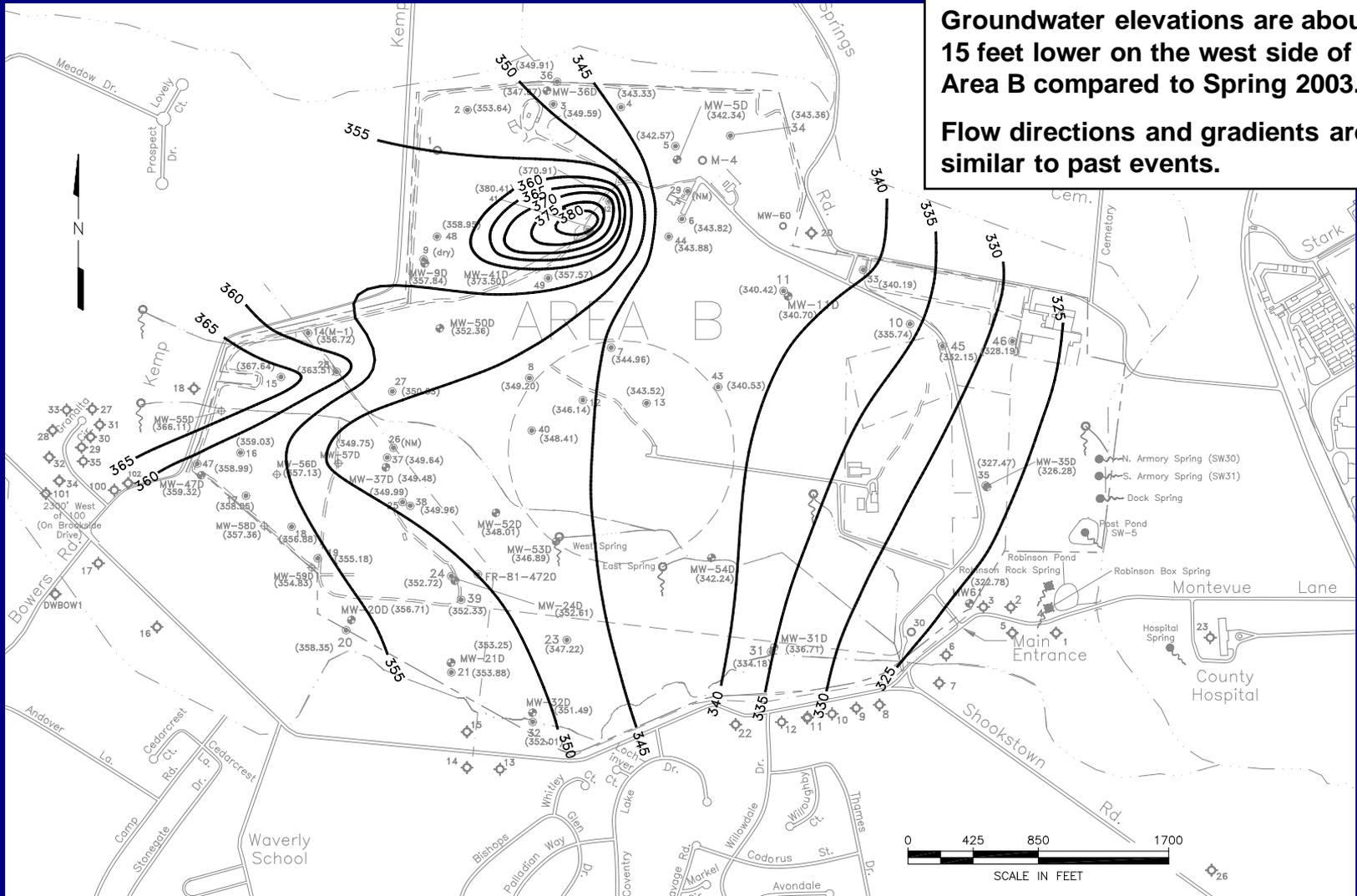
- Dye Trace Study - Schedule being developed (funding dependent).
- Additional residential well research downgradient of Area B to aid in monitoring groundwater contamination.
- Field sampling Area B-20 North, B-Grid, B-Ammo, B-Skeet
  - These sites are currently anticipated to be closed-out after final testing



# Area B Water Levels

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24 October 2003



**Groundwater elevations are about 15 feet lower on the west side of Area B compared to Spring 2003.**

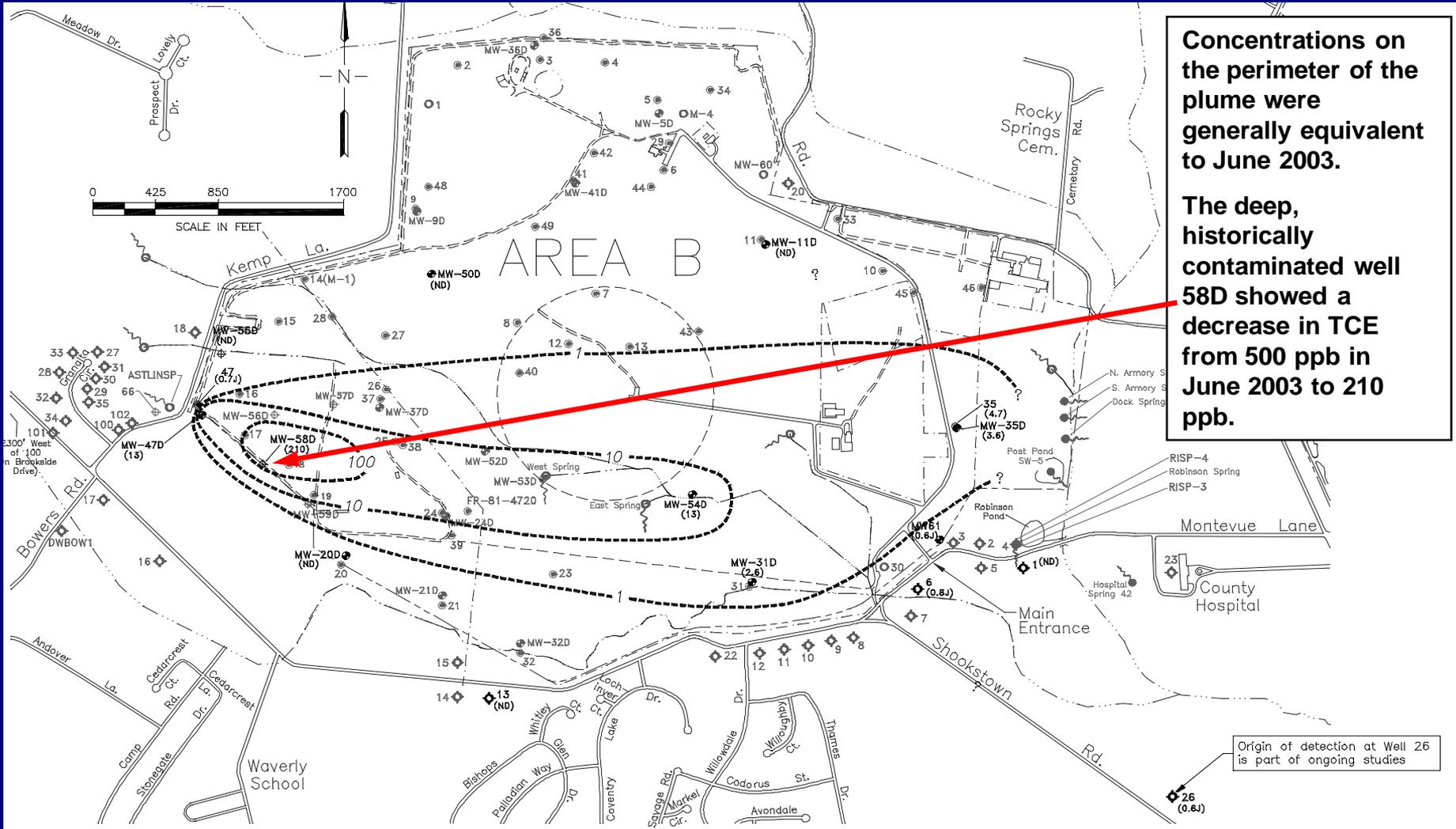
**Flow directions and gradients are similar to past events.**





# Fort Detrick RI/FS Quarterly Area B Sampling Results TCE Plume (October 2003)

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## RESIDENTIAL BOUNDARY WELLS AND SURFACE WATER Sampling Locations Data October 2003

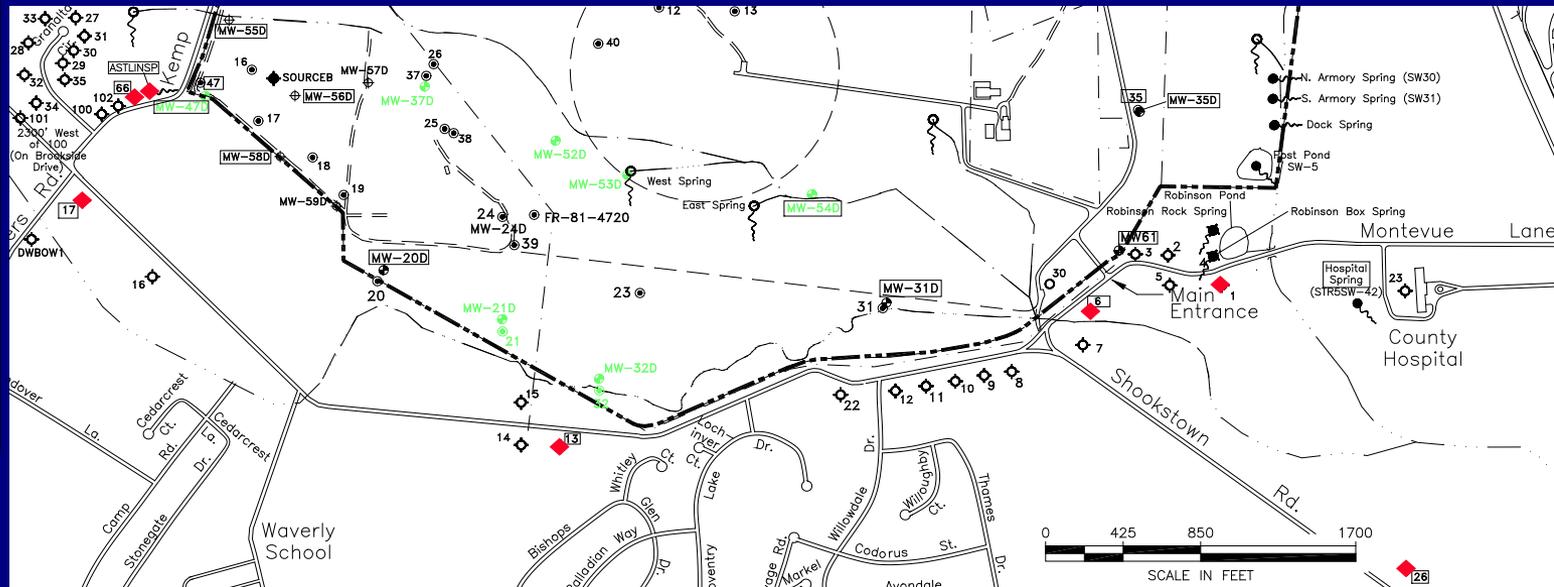
Analyte	MCL	DWSRD-1	DWSRD-6	DWSRD-6D	DWSRD-13	DWSRD-26
Chloroform	80	ND	ND	ND	0.1J	0.3J
Methyl-t-butyl ether	DNE	NA	45	51	NA	NA
Toluene	1000	ND	0.6JB	0.5JB	ND	ND
Trichloroethene	5	ND	0.8J	0.8J	ND	0.6J
Trichlorofluoromethane	DNE	ND	ND	ND	ND	0.3J
cis-1,2-Dichloroethene	70	ND	0.3J	0.3J	ND	ND

Several residential boundary wells and surface water sampling locations were not sampled in October 2003 due to expired rights-of-entry. These include DWGRAN-17, DWGRAN-18, DWELL-66, ASTLIN-SP, and STR5SW-42.

Low-levels of volatile compounds were found at locations DWSRD-1, DWSRD-6, DWSRD-13, and DWSRD-26. Some of these contaminants have also been found in Area B; however, some may be attributed to other sources.

All concentrations are well below USEPA drinking water standards (MCLs).

Well 13 is the only well in which compounds were detected that is used for residential purposes. The owners are supplied with bottled water for consumption.





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# Area C Update

- Internal Draft RI has been reviewed.
- Final RI Report has been funded.
- The Draft Final RI Report is being completed
- Draft Final RI was completed October 2003. Comments received – RI will be finalized once all comments have been resolved.
- Final scheduled for February 2004

