

**US Army Corps  
of Engineers  
Baltimore District**

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

**Restoration Advisory Board Meeting  
9 October 2002 7:30 PM  
Fort Detrick, Frederick, Maryland**



**US Army Corps  
of Engineers**  
Baltimore District

# Fort Detrick

## Area B-11 Removal Project Status



- No lost time accidents (595 days)

**SITUATION AS OF AUGUST 21 RAB  
MEETING:**

- Excavation operations were on-going.

**DEVELOPMENTS SINCE 21 AUGUST 2002:**

- 883 Cubic yards (1413 tons) of soil removed (773 cy hazardous) as of 10/8/02
- Extended-arm excavator brought on-site for deep excavation
- 99 Vials removed. Most have been transferred to ECBC or USAMRIID
- 40+ Drums (mostly carcasses) recovered, (as of 10/8/02)
- 42 Metal containers were removed and are in storage pending characterization and disposal



Bundle of Vials  
Removed



14 8:1



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# Fort Detrick

## Area B-11 Removal Project Status

### Large Container Removal Summary

- Drum grappler on-site to aid in material removal
- A total of 40+ drums in various stages of decomposition were removed as of 10/8/02
- Five 55-gallon drums were overpacked tested (3 drums have indication of herbicides (Picloram and 2,4,D). Both of which have been found in groundwater samples at low concentrations)
- One drum with an air reactive sludge with oil over sludge
- Four 5-gallon containers have been removed with contents
- One 1-gallon container removed with contents
- All drums with material in it have had D.O.T. analysis
- Several have had samples sent to lab for chemical ID (Results Pending)





# Fort Detrick

## US Army Corps Area B-11 Removal Project Status (Continued) of Engineers

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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 is being replaced. This unit is not currently in operation.
- All other HEPA units have passed all tests.
- Bleaching procedure has been upgraded to higher strength to assure proper disinfection.

### Production Delays

Soil removal has been limited to 50% to 75% projected output due in part to:

- Additional production delays have been due to freezing-in of soil that appears to be encapsulating some waste.
- Portions of the freeze wall are being allowed to partially thaw to recover waste.





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# Fort Detrick

## Area B-11 Removal Project Status

### Explanation of Significant Differences (ESD)

An explanation of Significant Difference (ESD) document is required to be produced for the Area B-11 project due to 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



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# Fort Detrick

## Area B-11 Removal Project Status

Explanation of Significant Differences (ESD, Continued)

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### Significant Differences (Continued) :

- The Decision Document specified that material will be excavated to the limit of the freeze wall; however, due to the size of Pit 1, the depth of excavation to meet this requirement would be increased by almost 1/3.
  - This condition required changing the excavation strategy to remove all waste and co-mingled soils in the pit as well as materials released during the excavation at least to the depth that is practicable with available equipment that can be operated within the containment structure. Removal to the freeze wall is not possible in all areas of the pit (deepest areas).
- Pits 2, 3, and 4 were found to be shallower than Pit 1 (about 8 feet as opposed to 17 feet)
  - This condition allows for the elimination of the frozen soil barrier containment system for the remaining pits because current information from the trenching operation indicates favorable conditions (i.e. cohesive clayey soils, no sand lenses or other permeable pathways observed).
- ❖ The ESD document will be included in the Administrative Record and its availability will be published in local papers



# Fort Detrick

## US Army Corps of Engineers Area B-11 Removal Project Status (Continued) Baltimore District

### •New Schedule

- Operations restarted on June 18, 2002
- Pit 1 to be completed by April/May 2003 (pit materials out by end of January)
- Planning and setup for pits 2,3,4 scheduled for 2003 pending funding

### •Funding

- Additional \$1 million obtained of FY 02 funds.
- Funds are programmed to available to complete Pit 1.





# Fort Detrick RI/FS

## Area A Update

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No New Items Completed Since Last RAB Meeting

### Pending Schedule:

Semi-Annual Sampling Report (May 02 Sampling)  
Area A LTM Sampling (2<sup>nd</sup> round)  
LTM (Five Year Review)

### Estimated Completion Date

October 02  
November 02  
July 06

### Items Completed:

Area A Long-Term Monitoring (LTM) Plan  
Area A LTM Sampling (1<sup>st</sup> round)

### Completed Date

April 02  
May 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)

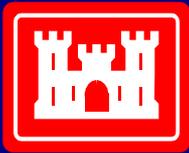
#### PENDING

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  
Area B Background and B-20 North Follow-On Work Plan  
Explanation of Significant Differences – B-11 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  
October 02  
October 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

- **No Activities**

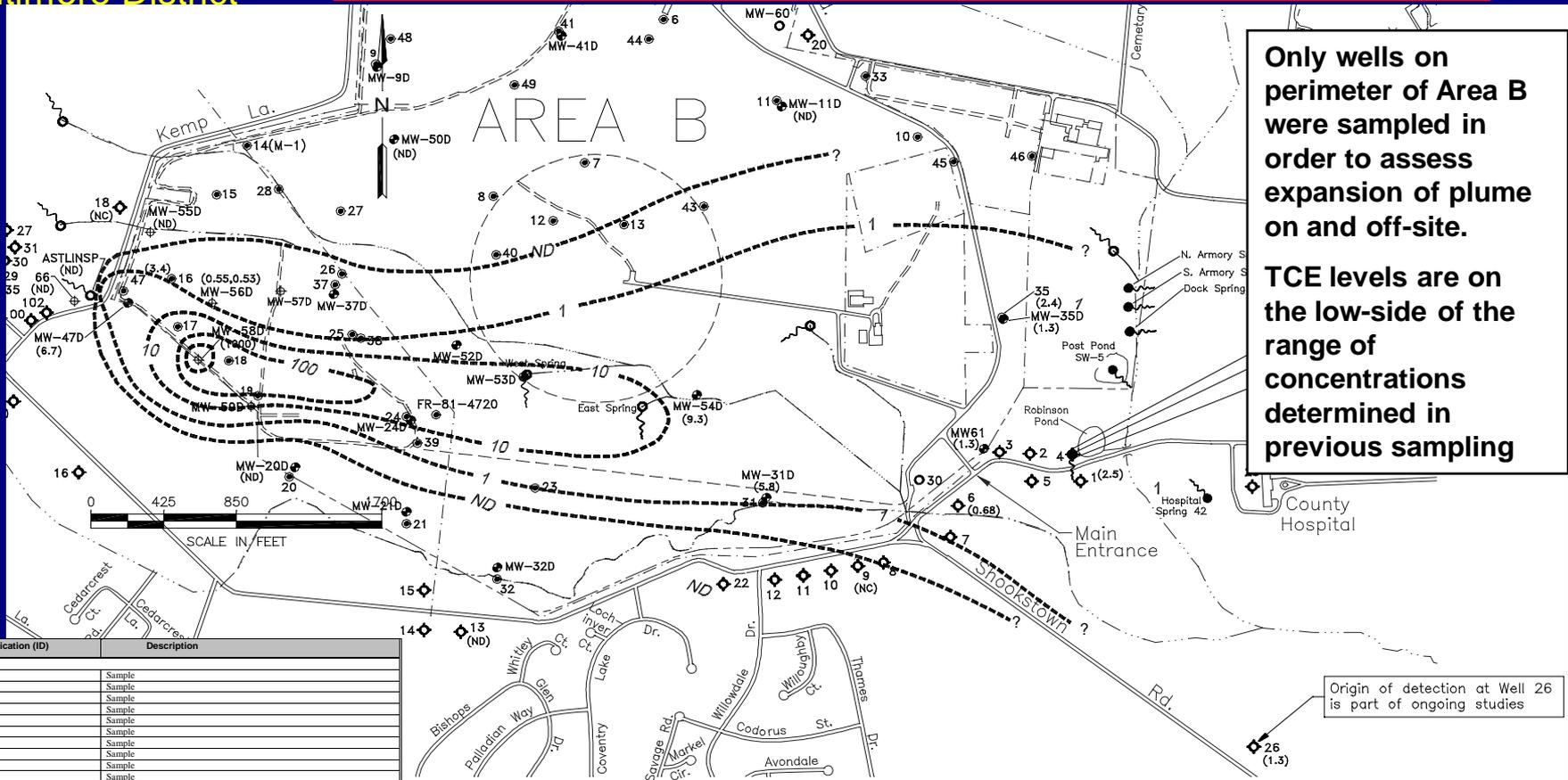
#### PLANNED

- 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.



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# Fort Detrick RI/FS Quarterly Sampling results TCE Plume (August 2002)



Only wells on perimeter of Area B were sampled in order to assess expansion of plume on and off-site.

TCE levels are on the low-side of the range of concentrations determined in previous sampling

Origin of detection at Well 26 is part of ongoing studies

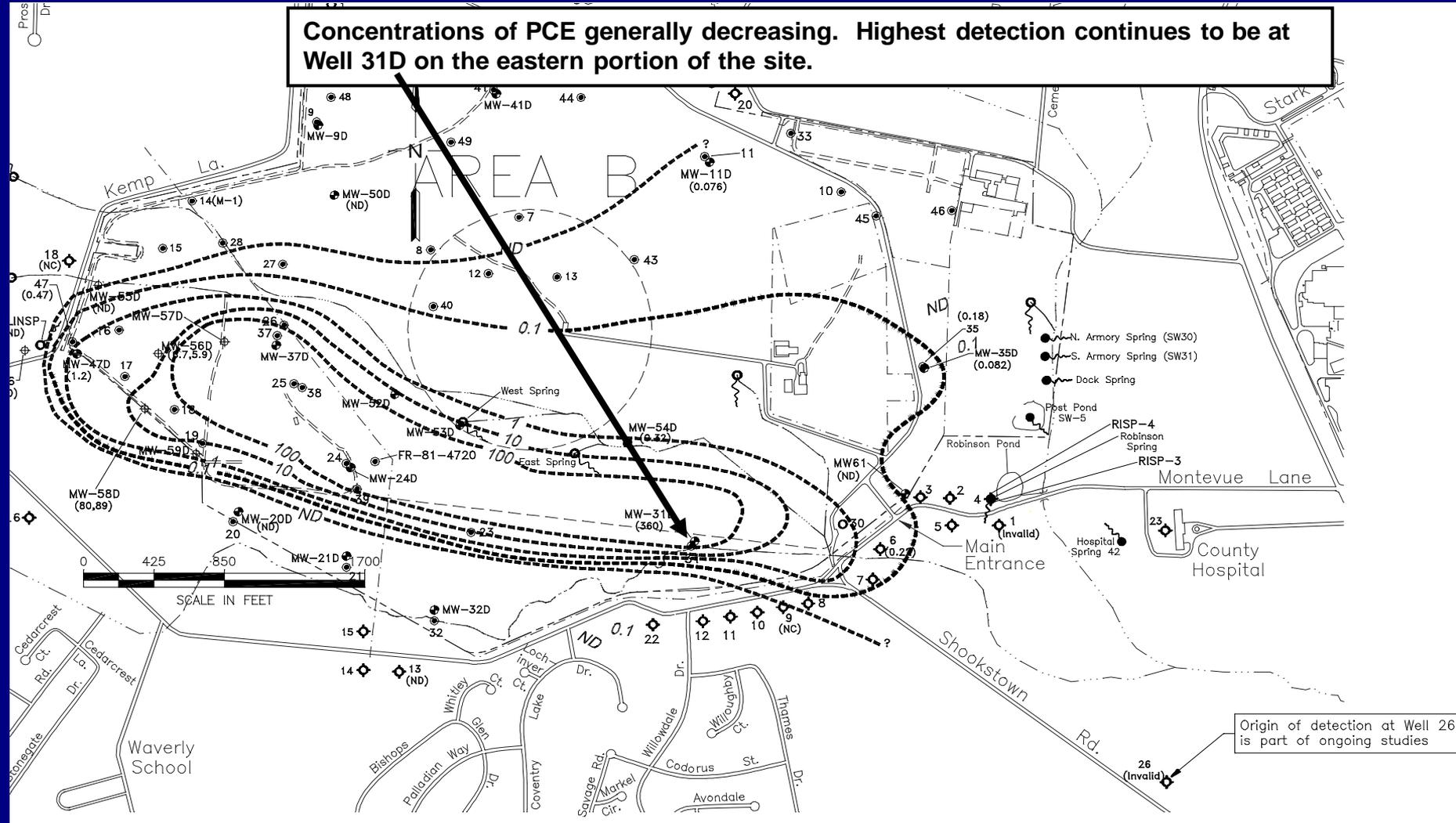
Sample Identification (ID)	Description
<b>Monitoring Wells Area B</b>	
BMW11D	Sample
BMW20D	Sample
BMW31D	Sample
BMW35	Sample
BMW35D	Sample
BMW47	Sample
BMW47D	Sample
BMW50D	Sample
BMW54D	Sample
BMW55D	Sample
BMW56D	Sample
BMW56D-D	Duplicate of Sample BMW56D
BMW58D	Sample
BMW58D-D	Duplicate of Sample BMW58D
BMW61	Sample
<b>Residential Wells</b>	
DWEL-66	Sample, 7320 Kemp Lane
DWGRAN-17	Sample, 1990 Shookstown Road
DWSRD-1	Sample, 292 Montevue Lane
DWSRD-6	Sample, West Excon - 284 Montevue Lane
DWSRD-13	Sample, 1820 Shookstown Road
DWSRD-26	Sample, 1669 Shookstown Road
<b>Spring/Ponds</b>	
ASTLINSP	Sample, Astlin Spring, 7320 Kemp Lane
ASTLINSP-D	Duplicate Sample, Astlin Spring, 7320 Kemp Lane



# Fort Detrick RI/FS Quarterly Sampling results PCE Plume (August 2002)

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Concentrations of PCE generally decreasing. Highest detection continues to be at Well 31D on the eastern portion of the site.





# Fort Detrick RI/FS

## RESIDENTIAL BOUNDARY WELLS AND SURFACE WATER Sampling Locations Data August 2002

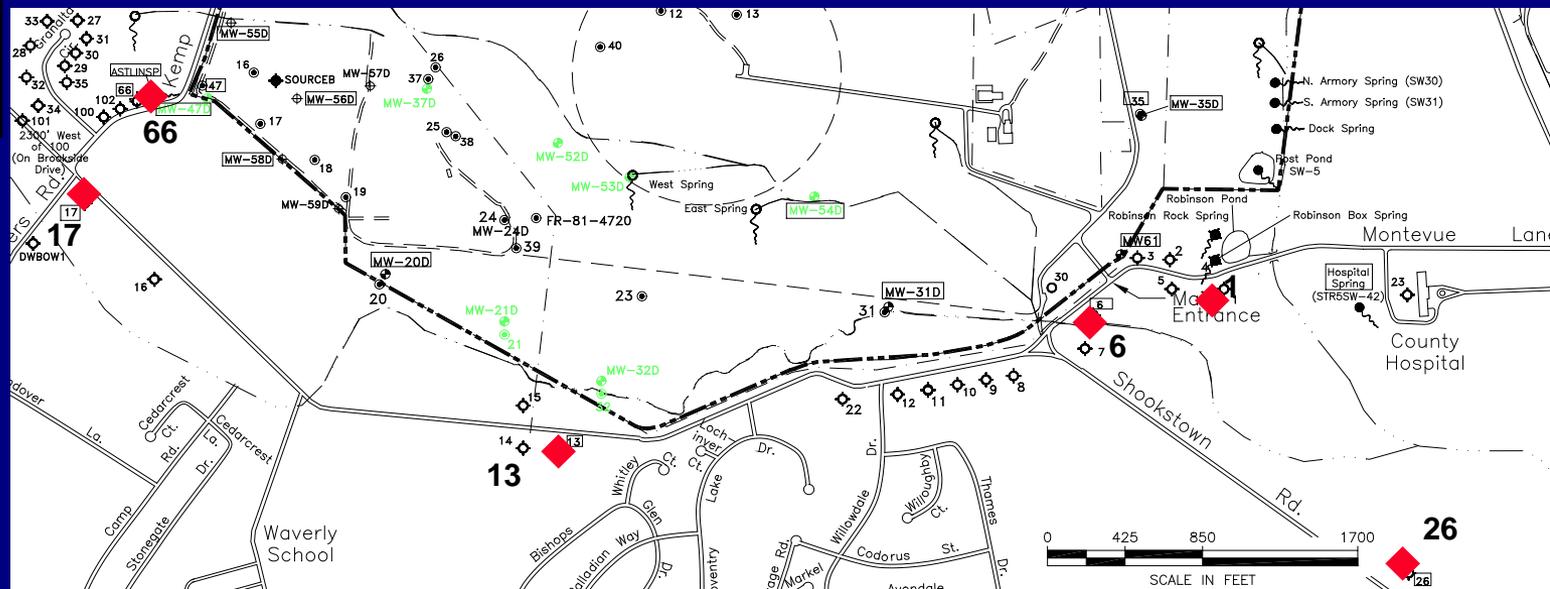
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Low-levels of volatile compounds have been found at all sampled locations with the exception of locations 17, 13 and 66. These contaminants have generally been found in Area B as well; however, there may be more than one source for some of the contaminants besides Area B.

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

Wells 13, 17, 66 are the only wells sampled that are used for residential purposes. Well 13 is supplied with bottled water for consumption.

Sample ID	Sample Date	Analyte Description	Concentration	Unit Measure	Lab Qualifiers	Validation Qualifiers	MCL
DWSRD-1	08/06/2002	1,1,1-Trichloroethane	0.095	ug/L	J		200
DWSRD-26	08/06/2002	1,1,1-Trichloroethane	0.24	ug/L	J		200
DWSRD-1	08/06/2002	1,1-Dichloroethane	0.087	ug/L	J		No MCL
DWSRD-1	08/06/2002	Benzene	0.12	ug/L	J		5
DWSRD-1	08/06/2002	Butane	3.2	ug/L	J	N	No MCL
DWSRD-1	08/06/2002	Butane, 2-methyl-	1.7	ug/L	J	N	No MCL
DWSRD-1	08/06/2002	C4 unsaturated hydrocarb	1	ug/L	J	N	No MCL
ASTLNSP	08/06/2002	Chloroform	0.14	ug/L	J		80
ASTLNSP-D	08/06/2002	Chloroform	0.14	ug/L	J		80
DWSRD-1	08/06/2002	Chloroform	0.34	ug/L	J		80
DWSRD-13	08/08/2002	Chloroform	0.088	ug/L	J		80
DWSRD-26	08/06/2002	Chloroform	0.43	ug/L	J		80
DWSRD-1	08/06/2002	cis-1,2-Dichloroethene	0.16	ug/L	J		70
DWSRD-26	08/06/2002	cis-1,2-Dichloroethene	0.15	ug/L	J		70
DWSRD-6	08/08/2002	cis-1,2-Dichloroethene	0.24	ug/L	J		70
DWSRD-1	08/06/2002	Pentane	2	ug/L	J	N	No MCL
DWSRD-1	08/06/2002	Propane	4.2	ug/L	J	N	No MCL
DWSRD-6	08/08/2002	Tetrachloroethene	0.22	ug/L	J		5
DWSRD-1	08/06/2002	Trichloroethene	2.5	ug/L	J		5
DWSRD-26	08/06/2002	Trichloroethene	1.3	ug/L	J		5
DWSRD-6	08/08/2002	Trichloroethene	0.68	ug/L	J		5
DWSRD-1	08/06/2002	Trichlorofluoromethane	0.35	ug/L	J		No MCL
DWSRD-26	08/06/2002	Trichlorofluoromethane	0.47	ug/L	J		No MCL
DWSRD-1	08/06/2002	Undecane	3.2	ug/L	J		No MCL



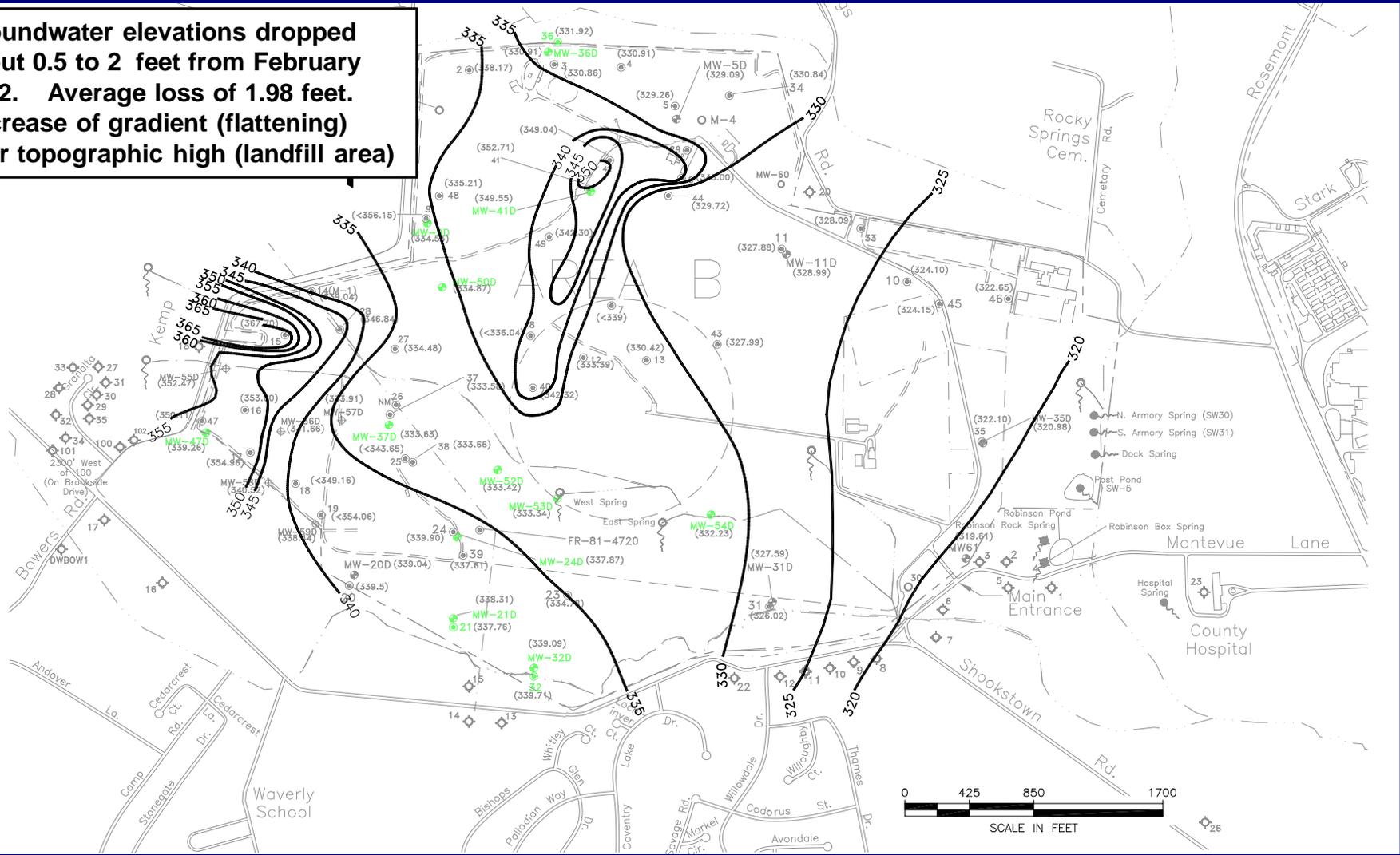


# Area B Water Levels

## August 5, 2002

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Groundwater elevations dropped about 0.5 to 2 feet from February 2002. Average loss of 1.98 feet. Decrease of gradient (flattening) near topographic high (landfill area)





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# Area C Update

- Currently finalizing assessment of groundwater data.
- Final Report has been funded.
- Scheduled to be completed Winter 03.

