Fort Detrick Remedial Investigation/Feasibility Study

Status Update

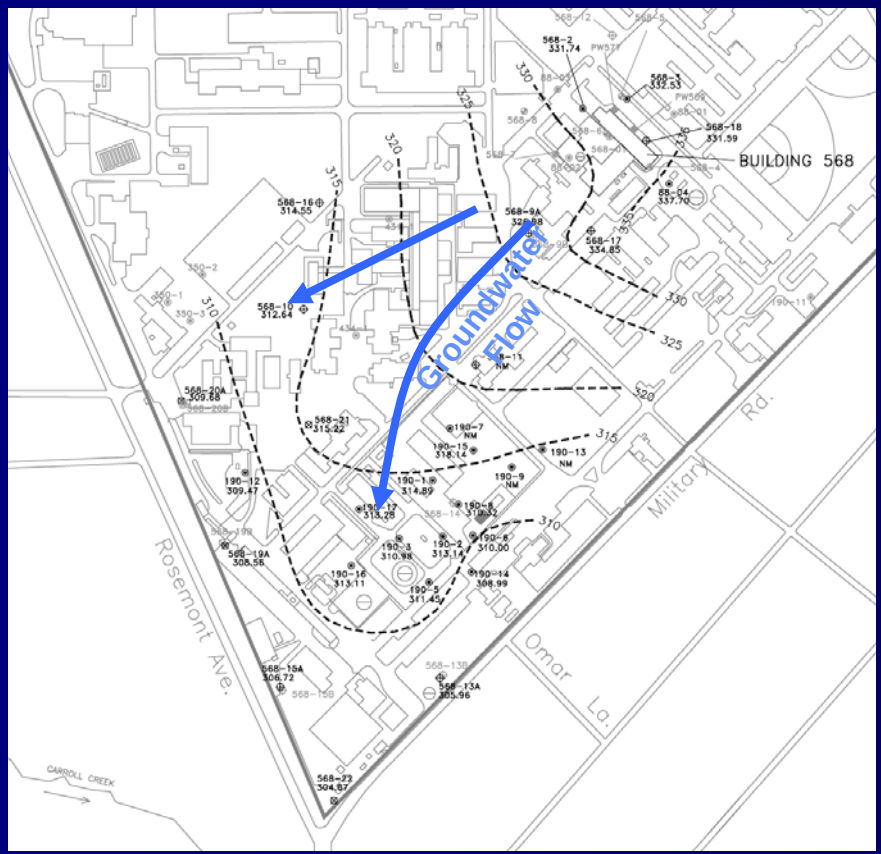
Fort Detrick Restoration Advisory Board Meeting
3 March 2008
Fort Detrick, Maryland

Status Update Discussion

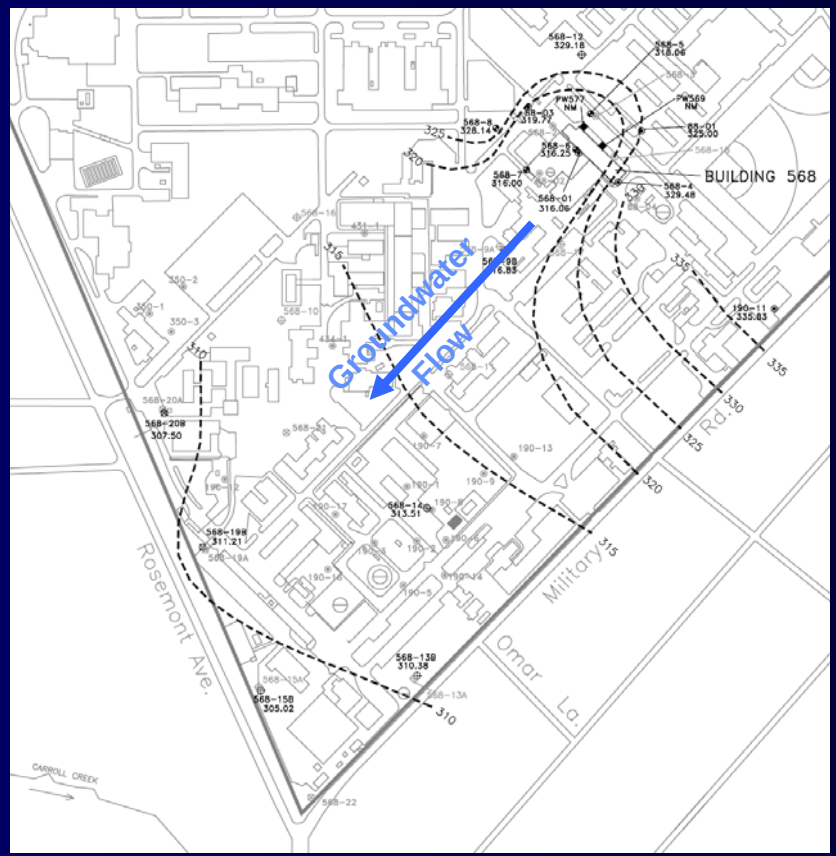
- Area A – Building 568 TCE Spill Site
  - Long-Term Monitoring
  - CERCLA 5-Year Review for Area A Groundwater
- Area B Five Sites (B-Ammo, B-20 North, B-20 South, B-Grid, B-Skeet)
- Area B Former Disposal Sites Schedule Update
- Area B Groundwater

Area A – Building 568 TCE Spill Site

Area A Groundwater Contours 27 September 2007



Shallow Groundwater (<70 ft bgs)



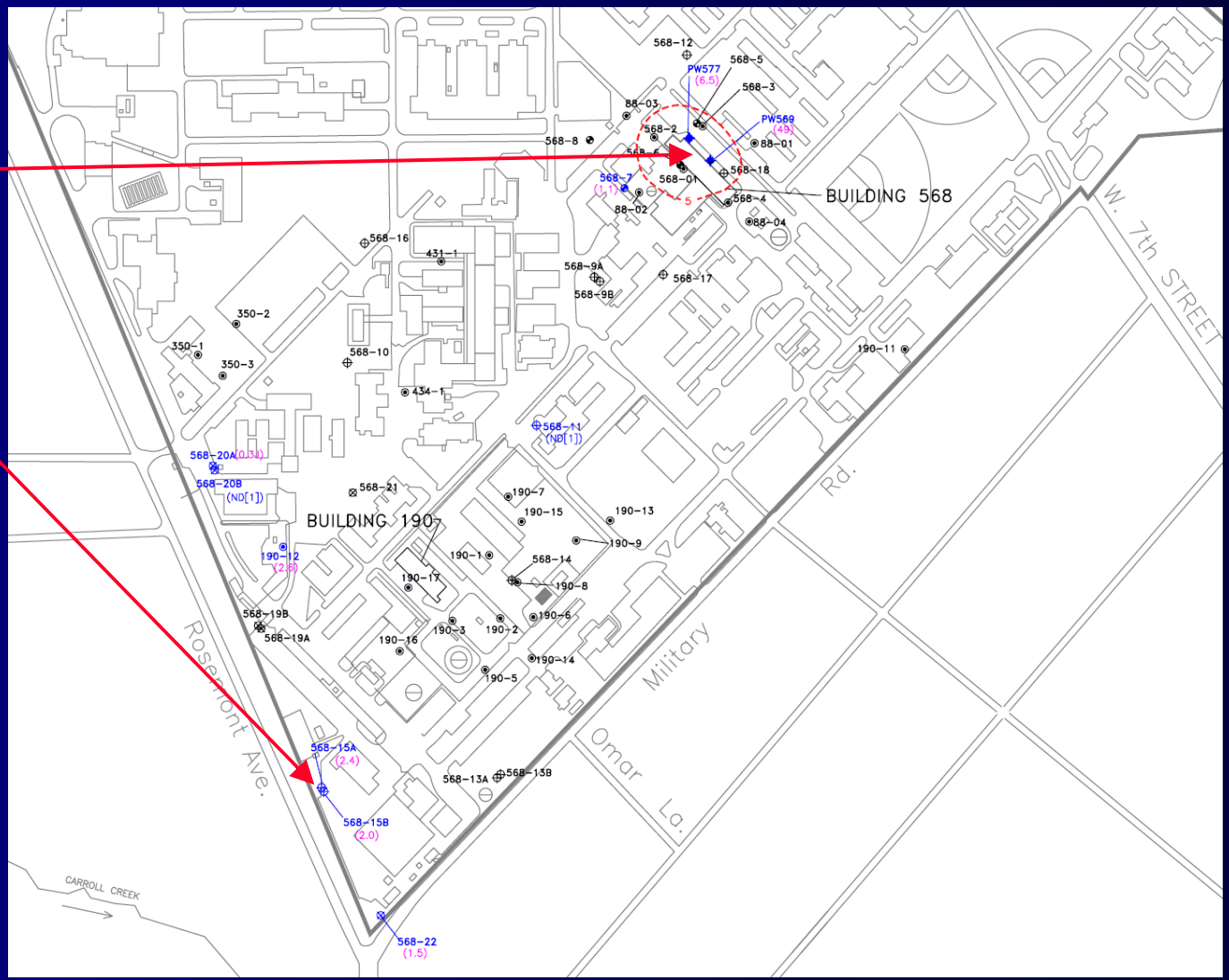
Deep Groundwater (<70 ft bgs)

Building 568 TCE Concentrations October 2007

TCE Concentrations at Building 568 remain above MCLs
Oct 07 – PW569 49 µg/L
Oct 07 – PW577 6.5 µg/L

TCE in 568-15A decreased to below the 5 µg/L MCL in October 2007, following 2 rounds above the MCL
Mar 06 – 3.8 µg/L
Sep 06 – 5.8 µg/L
Mar 07 – 7.1 µg/L
Oct 07 – 2.4 µg/L

PCE has also been detected in 568-15A, possibly indicating a different source



Area A
Building 568 TCE Spill Site

- Remedy for the site was “Plume Containment using Groundwater Extraction and Monitoring”
- CERCLA Five-Year Review is currently under review and revision to evaluate whether selected remedy continues to be effective and protective
- Primary issue of concern is temporary TCE concentrations greater than the 5 µg/L MCL in border well 568-15A
- 5-Year Review is currently evaluating the influence of water supply system leaks and other potential sources indicated by PCE in 568-15A

Area B Five Sites

Area B Five Sites

Decision Document signed 21 February 2008

No unacceptable risks to human health and the environment were identified. Final Remedy is No Action. Signature on Final DD will be final step for these sites.

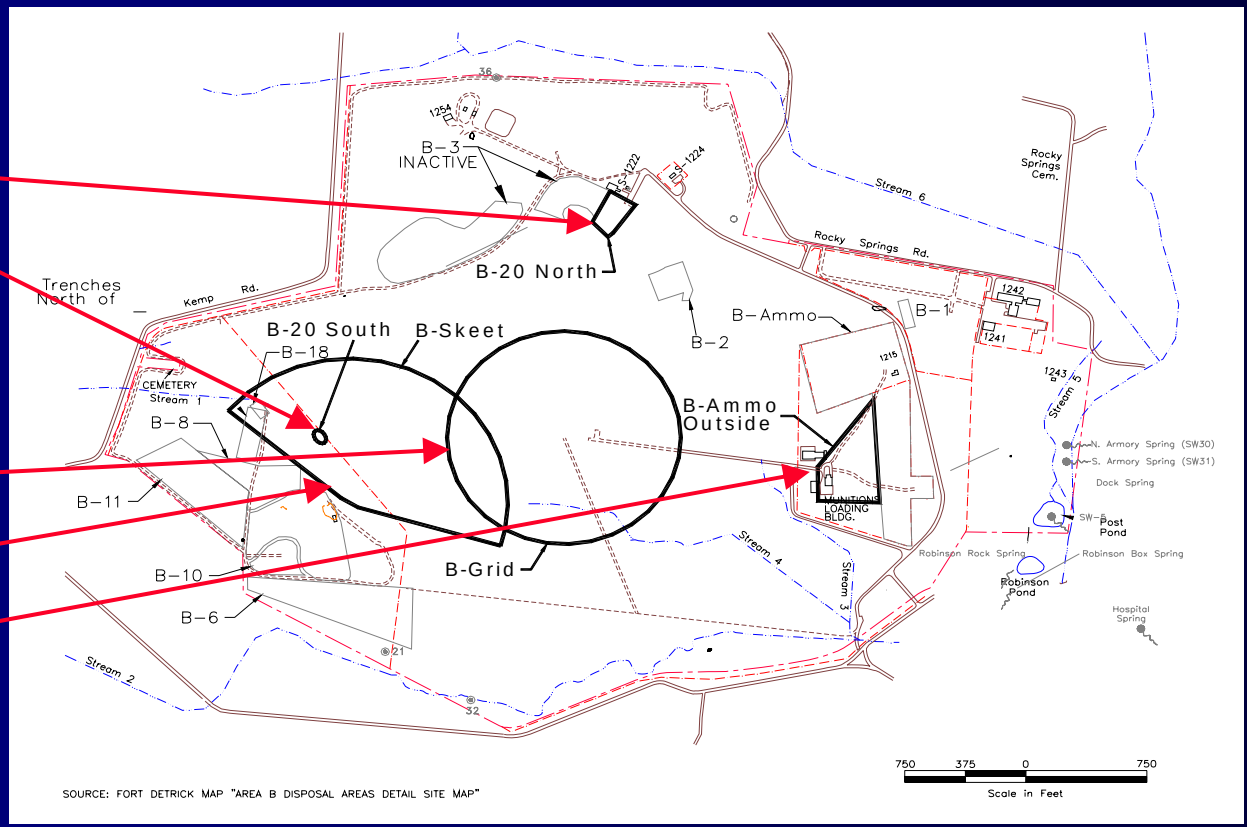
B-20 North

B-20 South

B-Grid

B-Skeet

B-Ammo



Area B Former Disposal Sites

Area B Former Disposal Sites

Remedial Strategy for Area B Former Disposal Sites

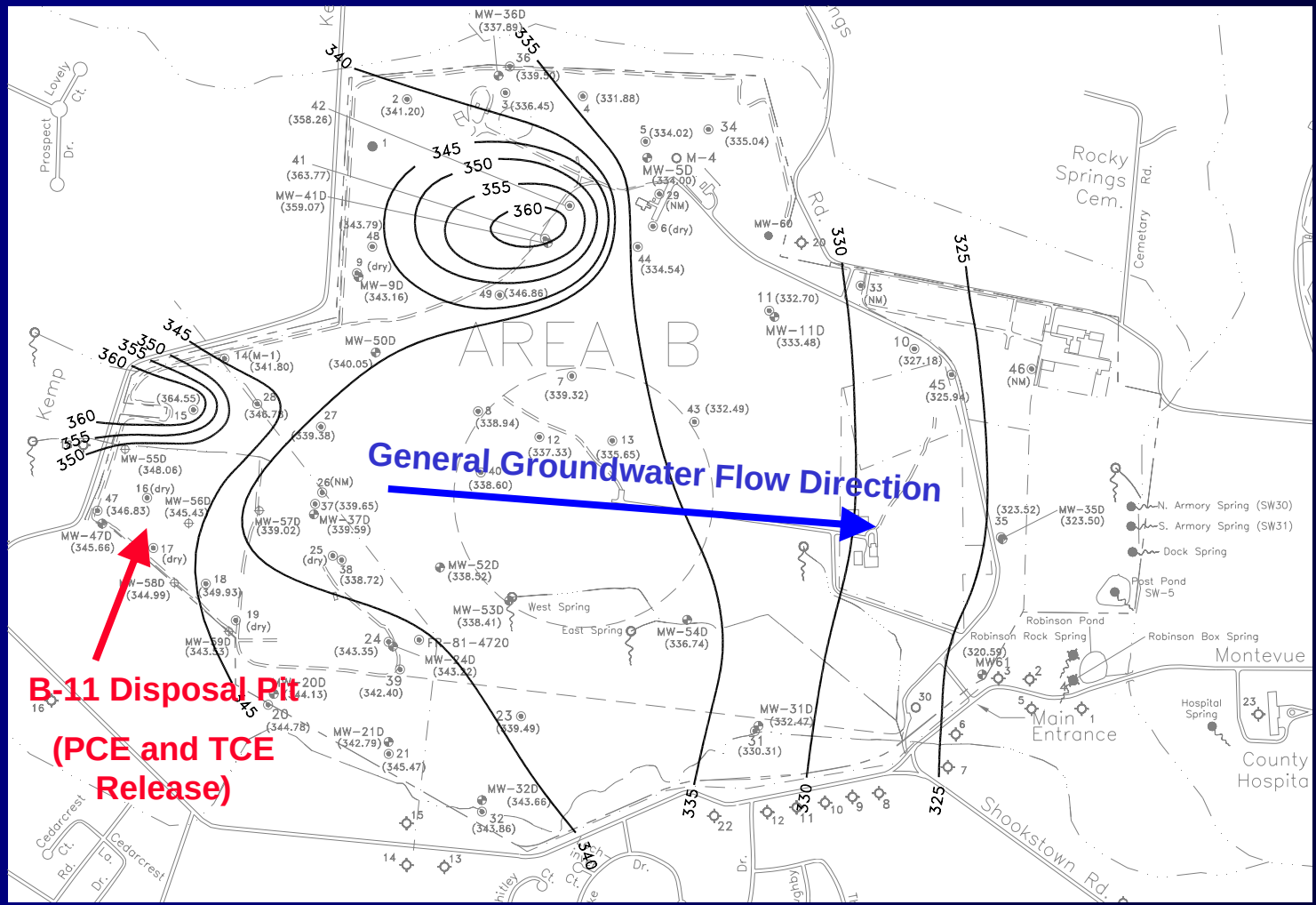
- Utilize EPA Presumptive Remedy for Landfills B-2, B-3 Inactive, B-6, B-8, Trenches North of B-8, B-10, and B-11
- Comply with current Code of Maryland Regulation 26.04.07.21 for Sanitary Landfill Closure as a relevant and appropriate requirement

Area B Former Disposal Site Schedule

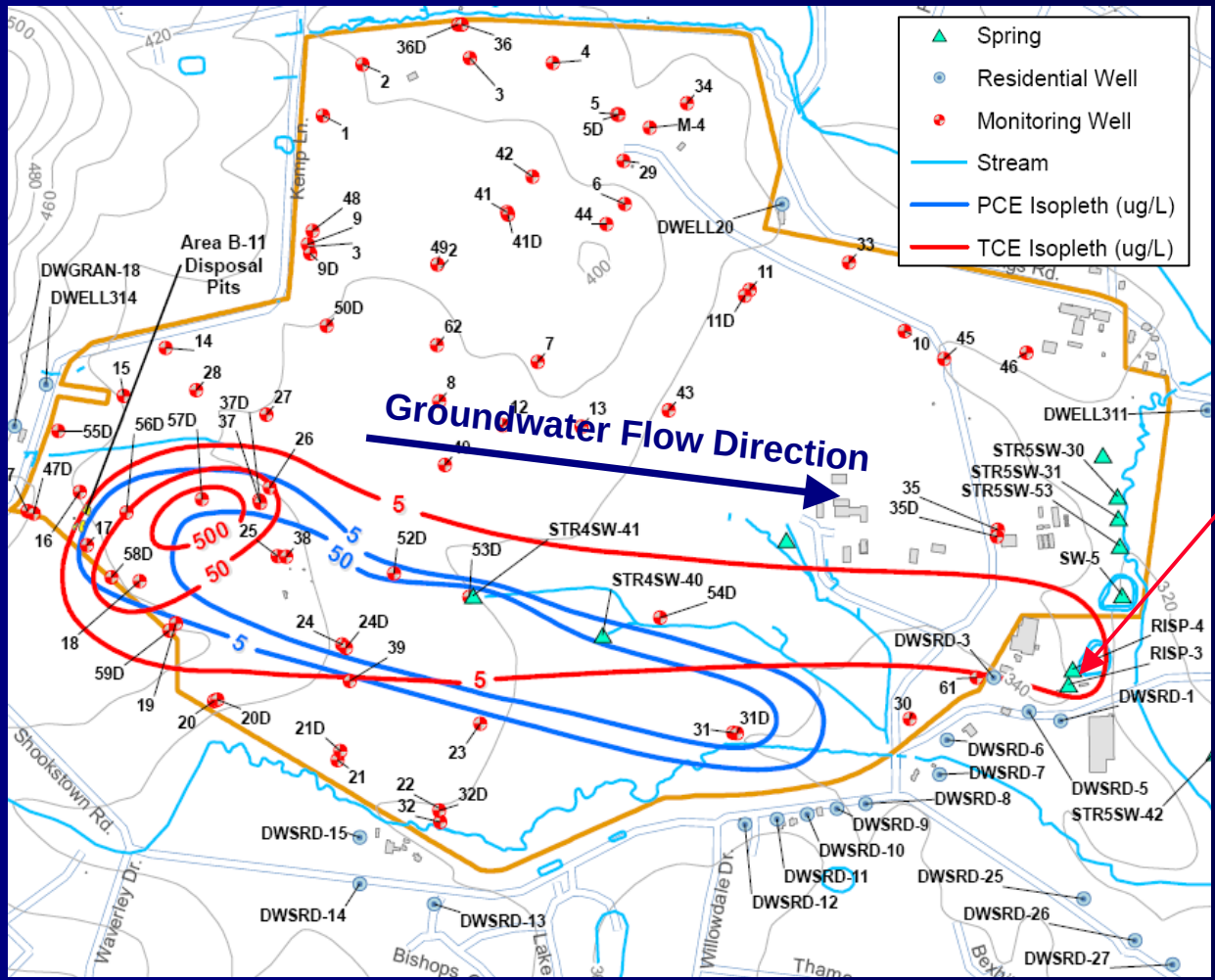
Site	RI/FS	Proposed Plan Public Comment	Decision Document	Capping Work Plan	Construction
B-2	Finalized Oct 2006	Aug 24 - Sep 23 2007	Signed 21 February 2008	Summer 2008 (Aug/Oct)	Winter 2008
B-3 Inactive	Addressing Comments from MDE. Final RI/FS projected for Spring 2008	Spring 2008 (April/May)	Summer 2008 (June/July)		
B-6	Finalized Feb 2007				
B-8 Trenches North B-8 B-10/B-10 Grove B-11	Addressing Comments from MDE. Final RI/FS projected for Spring 2008				
B-18	Further investigation to occur in March 2008 to assess whether buried waste is present.				

Area B Groundwater

Area B Groundwater Monitoring September 2007 Sampling



Area B PCE and TCE Concentrations September 2007



Robinson Spring is highest observed off-post detection at

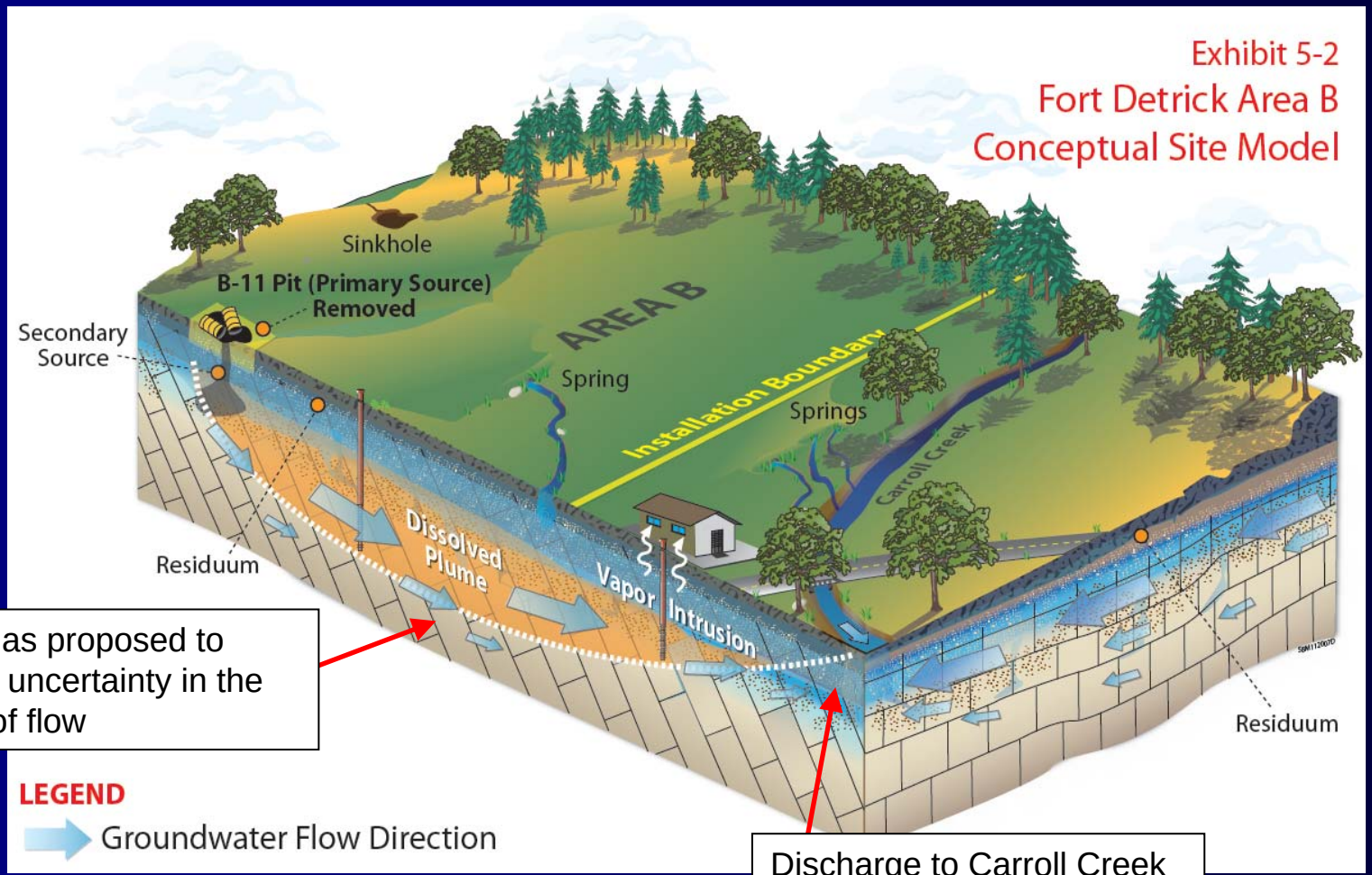
TCE 8.5 µg/L

PCE 1.0 µg/L

Area B Groundwater Discussion

- Regulators had expressed concern that further characterization of groundwater was needed.
- The Army developed and submitted a report to MDE and EPA describing the Conceptual Site Model (CSM) for Area B Groundwater.
- A Meeting was held on 28 Feb 2008 with Fort Detrick, MDE, AEC, OMB, Dept. of the Army, and EPA to present and discuss the Army's Conceptual Site Model and path forward.
- Additional partnering meetings will be held with MDE and EPA to refine the CSM and develop a Work Plan for any additional work that is determined to be necessary.

Area B Groundwater Conceptual Site Model



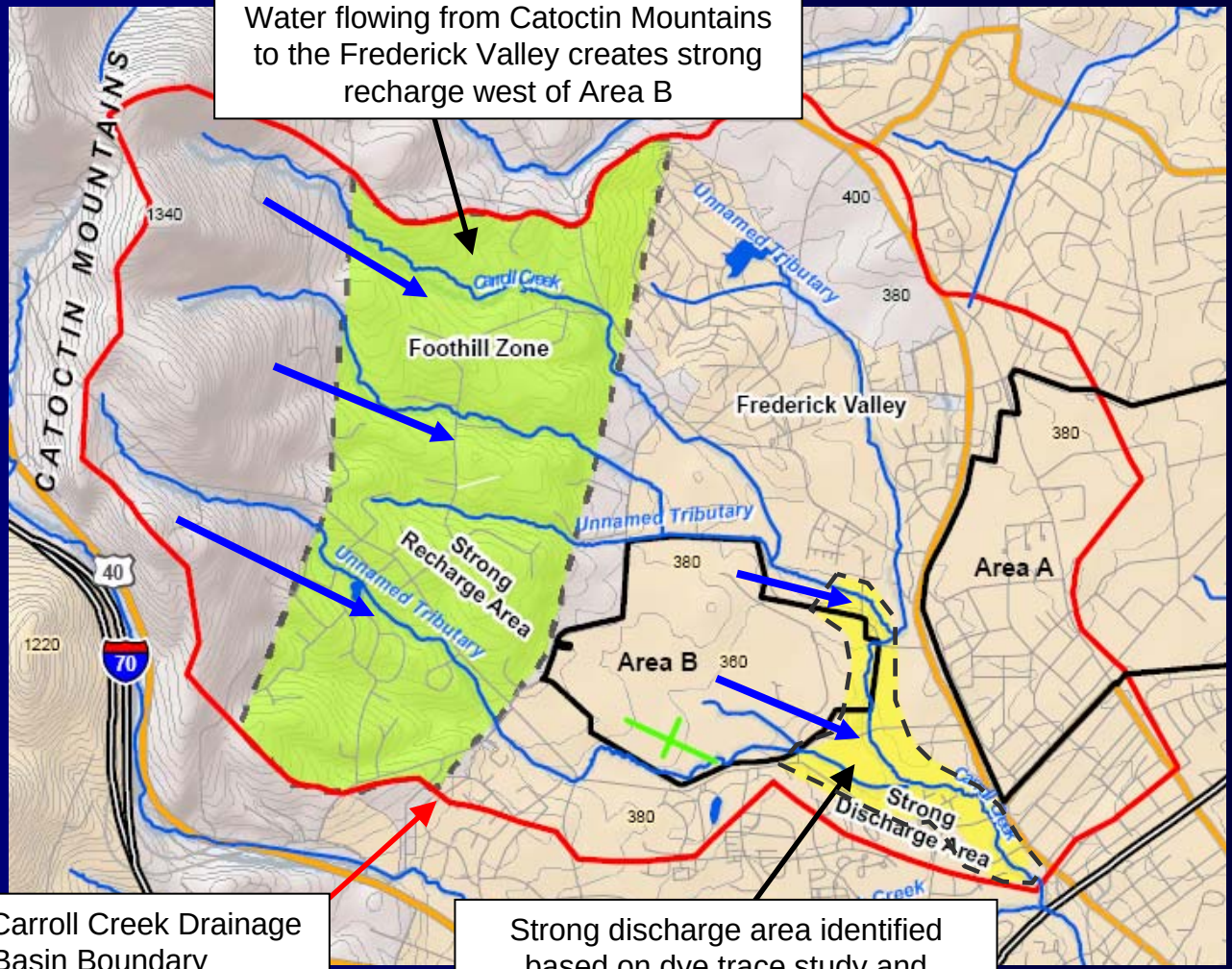
Army has proposed to reduce uncertainty in the depth of flow

Discharge to Carroll Creek at concentrations near MCL

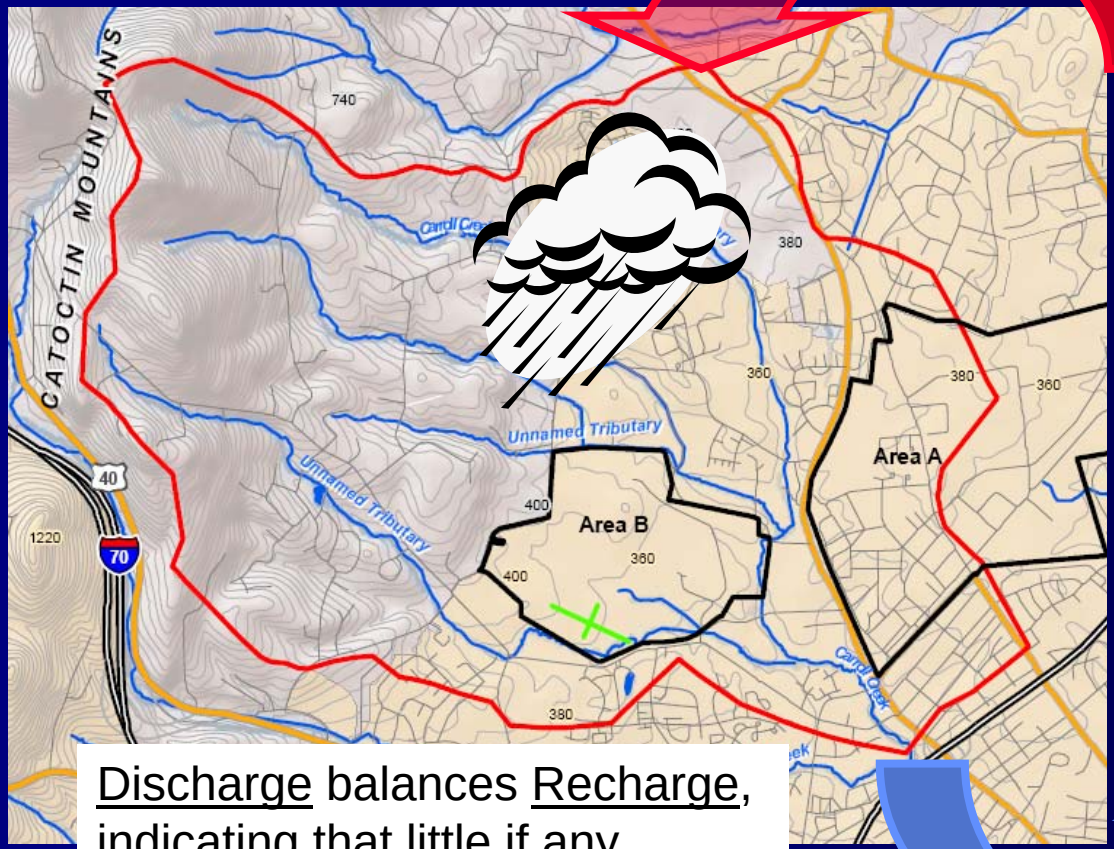
Upper Carroll Creek Recharge and Discharge Areas

-Area B transitions from recharge on the west to discharge on the east, consistent with regional studies:

"Water that has descended to the zone of saturation does not move very far horizontally (a few miles at most) before being discharged to one of the numerous streams in the county." (ref. Water Resources of Frederick County, Maryland Geologic Survey, Duigon & Dine 1987)



Water Balance for the Upper Carroll Creek Drainage Basin



RECHARGE

Precipitation = 40 inches/year (NCDC Station: 183348 Frederick Police Barracks)

Infiltration = 12% to 30% for individual drainage basins in Frederick County (Duigon & Dine, 1987)

Area of Drainage Basin = 4,620 acres

Ranges From 2.6 to 6.4 cfs

DISCHARGE

4 cfs in September 2000 (dry season)
9 cfs in April 2001 (wet season)

Estimated Average 6.5 cfs

Discharge balances Recharge, indicating that little if any groundwater underflow occurs

Area B Groundwater RI/FS Path Forward

- The Army has re-established partnering agreement with MDE and EPA
  - First meeting tentatively planned for 16/17 April 2008
- Shaw will conduct a well inventory and assessment to determine if there are existing wells available for plume characterization
  - March 2008
- The Partnering team will evaluate the conceptual site model, identify potential data gaps, develop work plan, and collect additional data as necessary