

**US Army Corps
of Engineers
Baltimore District**

Fort Detrick Remedial Investigation/Feasibility Study

Restoration Advisory Board Meeting

**24 March 1999 7:30 PM
Fort Detrick, Frederick, Maryland**



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Fort Detrick RI/FS

Area A Feasibility Study

- **Received Comments from RAB on 20 Jan 1999**
- **Response to Comments Distributed this Evening**
- **Waiting for MDE Comments.**

Schedule:

No Currently Planned RI/FS Data Acquisition Activities

Final - July 1999



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Area B Update

DOCUMENTS

Currently in Production

- Area B RI Draft - MDE Comments Received, Army Review and Response, Final Pending MDE Concurrence on Responses and MDE Review of Risk Assessment

	Completion Date
RI	Jun 99
FS	Sep 00
PP (NFA Sites)	Mar 01
DD (NFA Sites)	Aug 01
PP (FTD49/Area B GW)	Mar 01
DD (FTD49/Area B GW)	Aug 01
RD (FTD49/Area B GW)	Feb 02
RA (FTD49/Area B GW)	Apr 02



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Area B Update

Completed and Scheduled Field Activities

COMPLETED

- Perimeter Sampling Accomplished - January 5 - 7, 1999
- Quarterly Sampling Accomplished - February 22 - March 5, 1999
(Groundwater from wells with known or suspected contamination at or above 100 ug/L containerized for disposal off-site)
- Water Level Survey Completed February 22, 1999
- Residential Well Survey Completed March 16, 1999

SCHEDULED

- Perimeter Sampling - April 27, August 31, 1999 - Low Flow Sampling to be Tested
- Quarterly Sampling - June 29, October 19, 1999
- Other Activities as outlined in ITR responses - Schedule not yet fully developed



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Fort Detrick RI/FS Area B Update

RESIDENTIAL WELL SURVEY

Five (5) residences assessed for sampling potential on 16 March 1999.

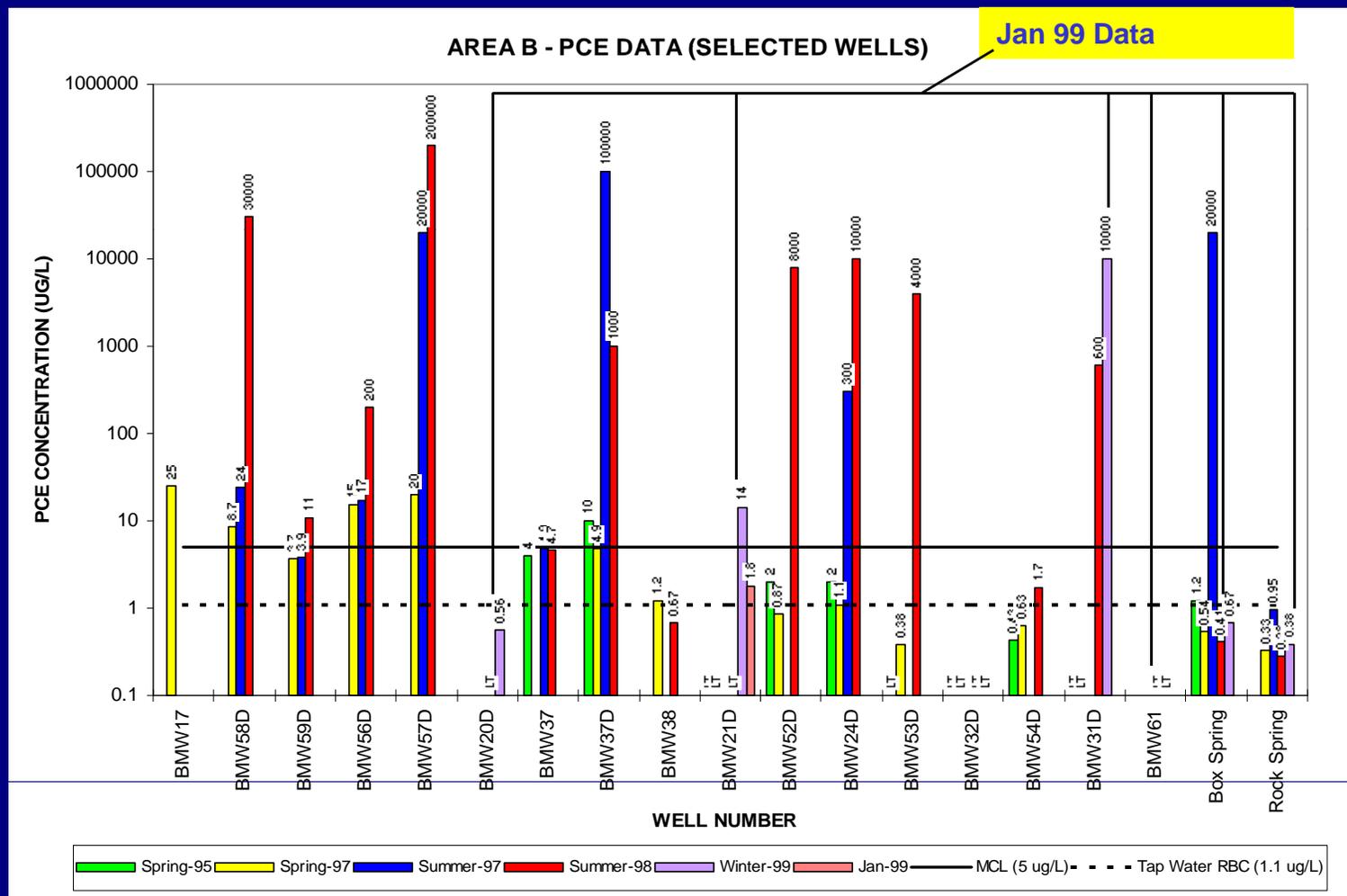
DOMESTIC WELLS - SHOOKSTOWN ROAD						
ADDRESS	ROAD	RESIDENT	WELL PRESENT	FUNCTIONAL	SAMPLEABLE	WILL SAMPLE?
1699	SHOOKSTOWN	BARGIS	YES	NO	YES	
1679	SHOOKSTOWN	VACANT	YES	YES	YES	
1669	SHOOKSTOWN	HARTMAN	YES	NO	SEALED	
1671	SHOOKSTOWN	MEYERS	YES	NO	CAPPED	
1653	SHOOKSTOWN	BARRIMOND	YES	NO	CAPPED	



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Sampling Data - Area B New Data - January 1999



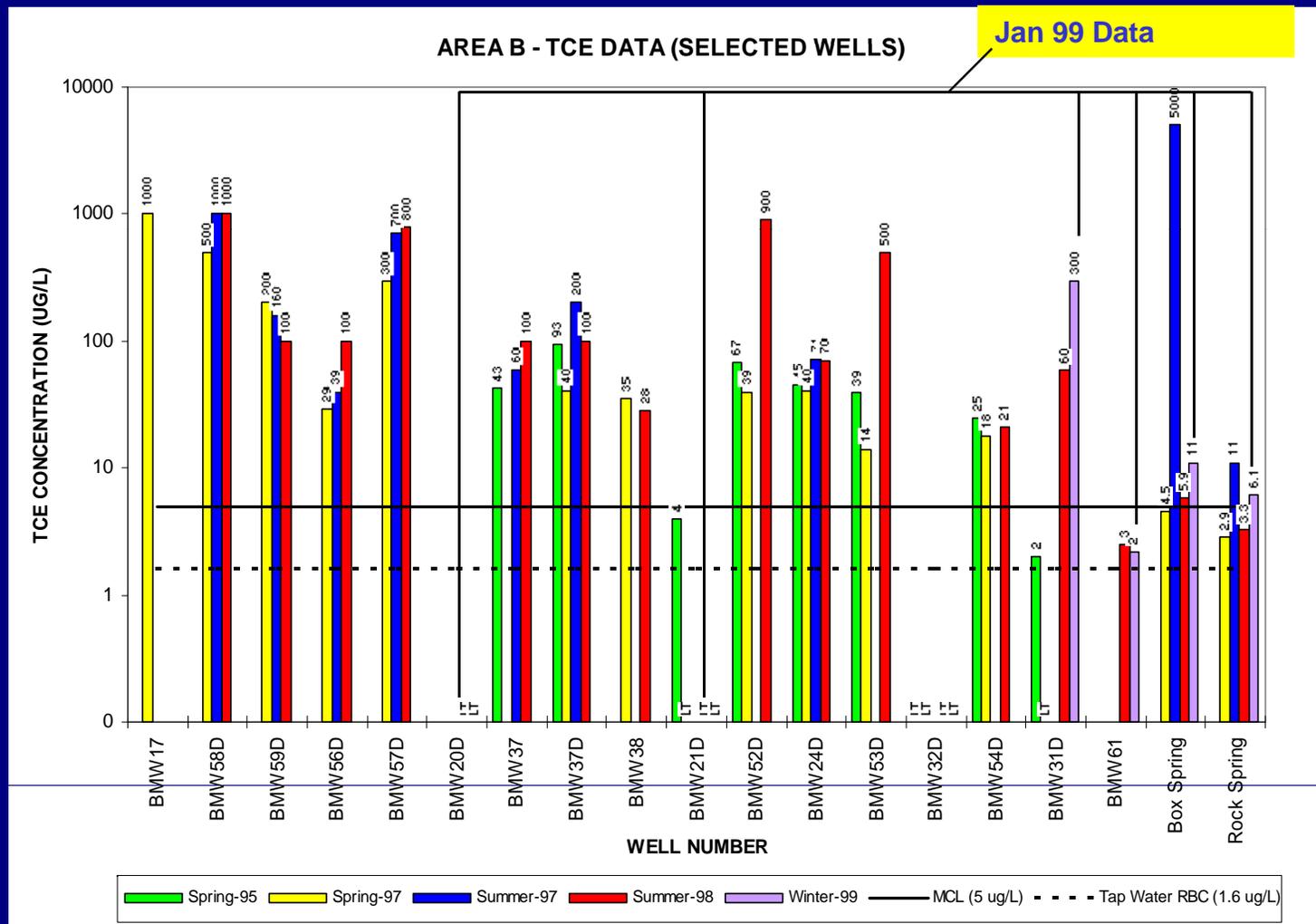
BMW21D was re-sampled 11 Feb 1999. Preliminary result - PCE 1.8 ug/L



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Sampling Data - Area B New Data - January 1999





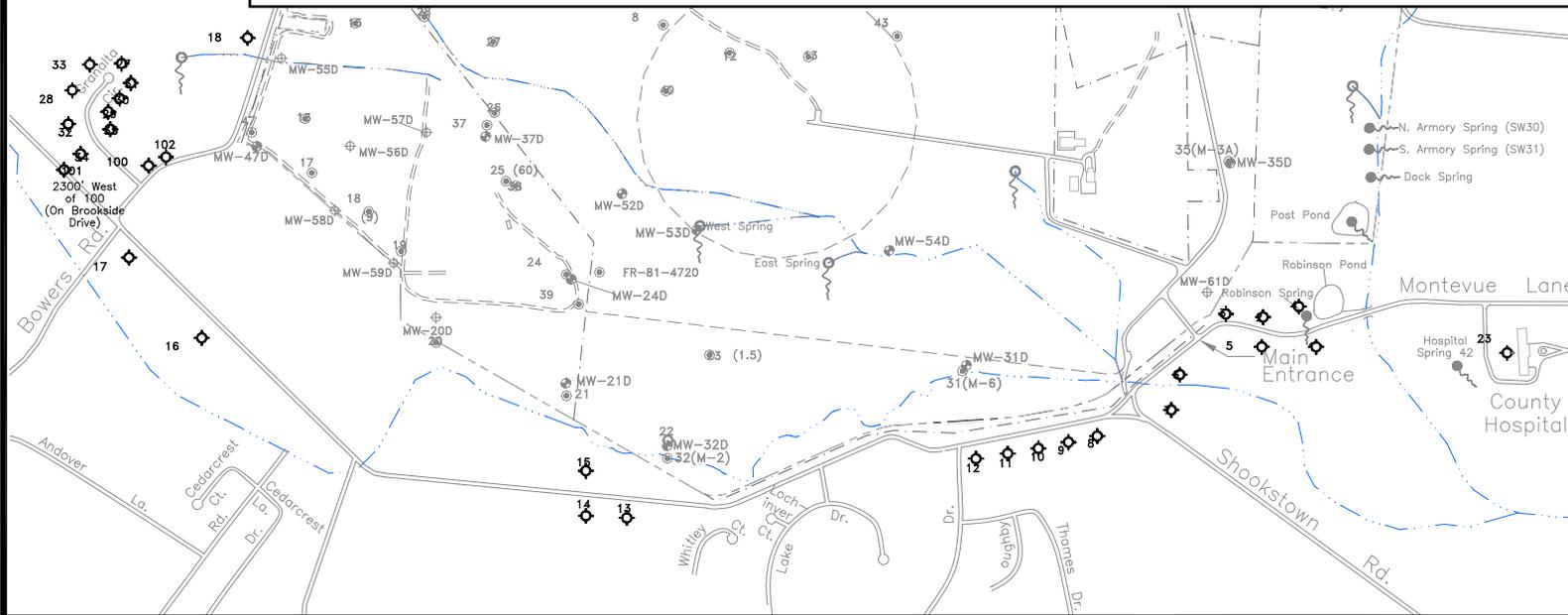
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PCE DATA - RESIDENTIAL

BOUNDARY WELLS

Site ID	DWSRD-1		DWSRD-11		DWSRD-15		DWSRD-16		DWGRAN-17		DWSRD-23		
	Date	Result (ug/L)	Flag	Result (ug/L)	Flag	Result (ug/L)	Flag						
May-95		LT		LT		LT		LT				LT	
August-97								LT		LT		LT	
November-97				LT		LT							
July-98		0.26	JP	LT		LT		LT		LT		LT	
August-98				LT		LT							
October-98		LT		LT		LT		LT		LT		LT	
January-99		LT		LT		LT		LT		LT		LT	





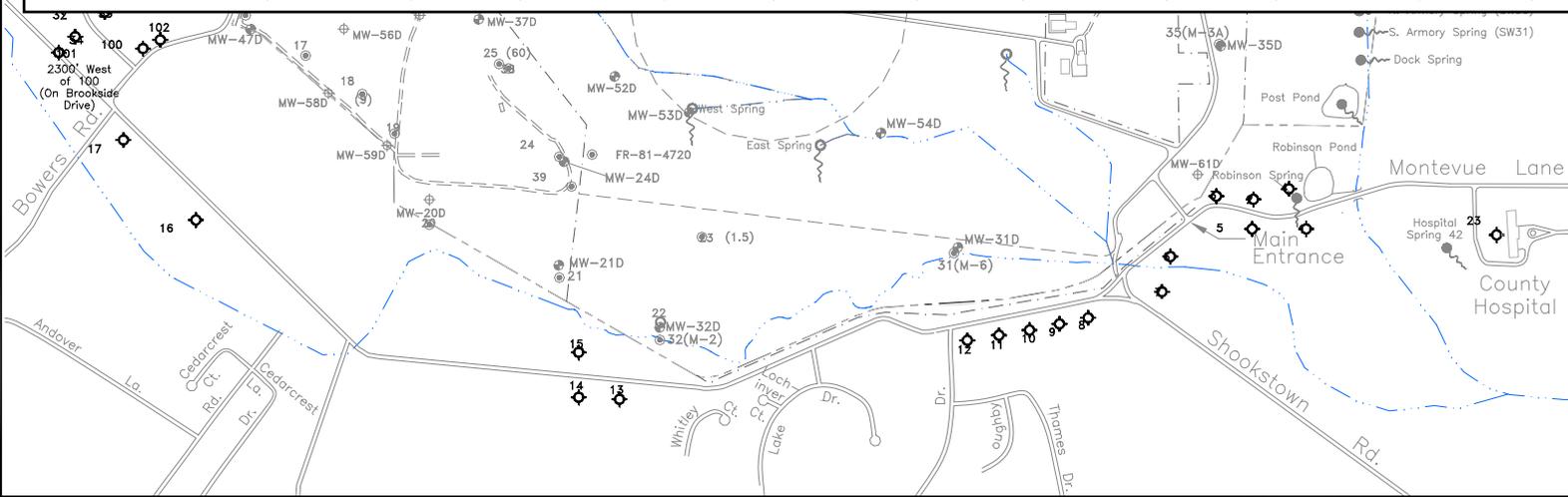
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TCE DATA - RESIDENTIAL

BOUNDARY WELLS

Site ID	DWSRD-1		DWSRD-11		DWSRD-15		DWSRD-16		DWGRAN-17		DWSRD-23	
	Result (ug/L)	Flag										
May-95	5	JP	LT		LT		LT				LT	
August-97							LT		LT		LT	
November-97			LT		LT							
July-98	3.4		LT		0.99	JP	LT		LT		LT	
August-98			LT		0.66	JP						
October-98	2.9		LT		0.45	JP	LT		LT		LT	
January-99	1.9		LT									



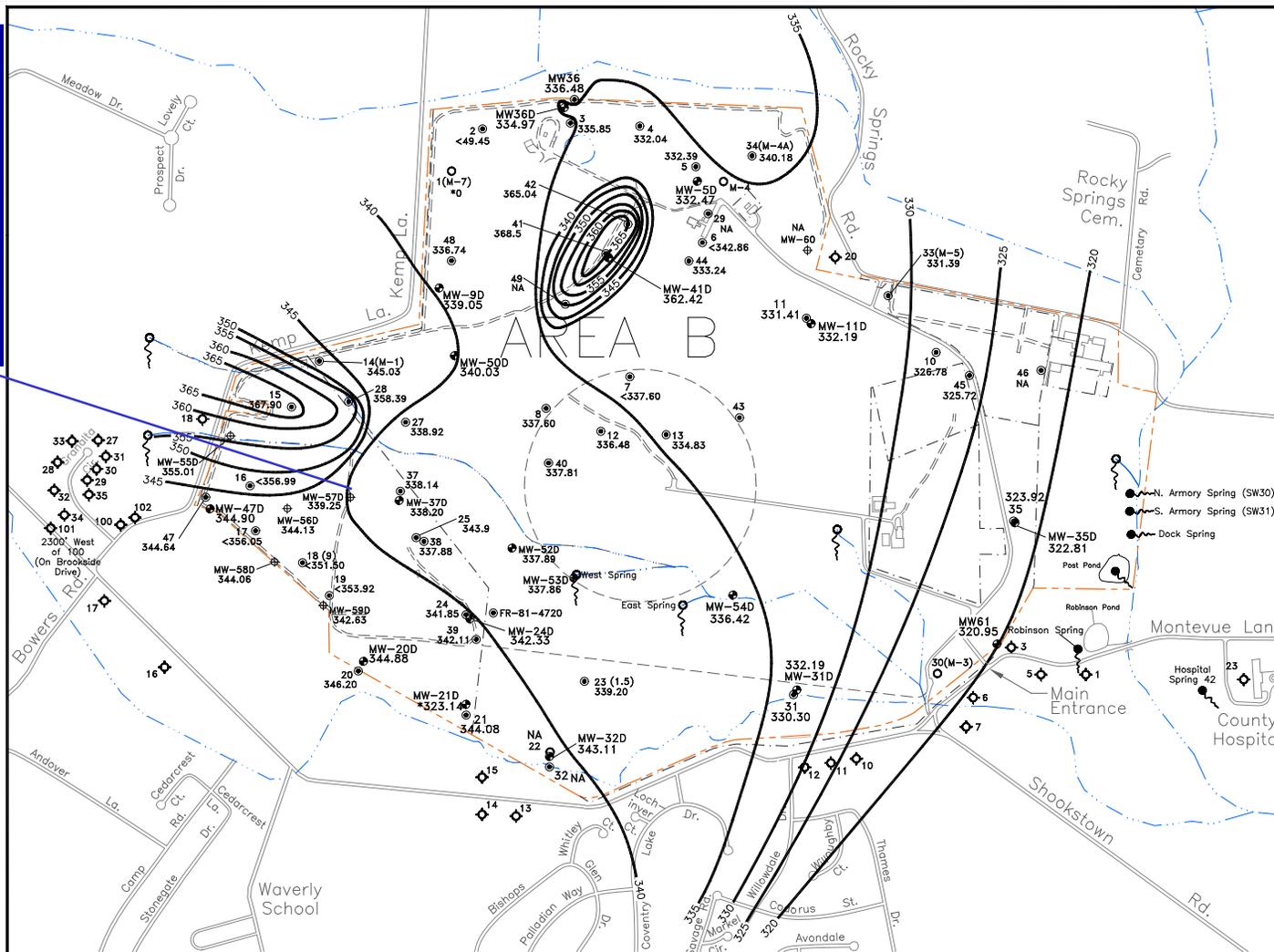


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Groundwater Elevations - 22 February, 1999

No separate-phase DNAPL was found using an interface probe in well 57D



Water levels are generally 5-ft lower in central portion of area compared to Summer 1998.

Gradient directions similar in all measuring events



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Area C ESI Update

COMPLETED

- **Area C - Wastewater Treatment Plant Expanded Site Investigation (ESI)**

Sampled - three (3) background locations

- **five (5) sludge staging area locations**
- **eight (8) sludge drying beds**
- **two trickling filters**
- **the plant outfall (sediment)**
- **one soil fill location**
- **one incinerator ash location**

WORK IN PROGRESS

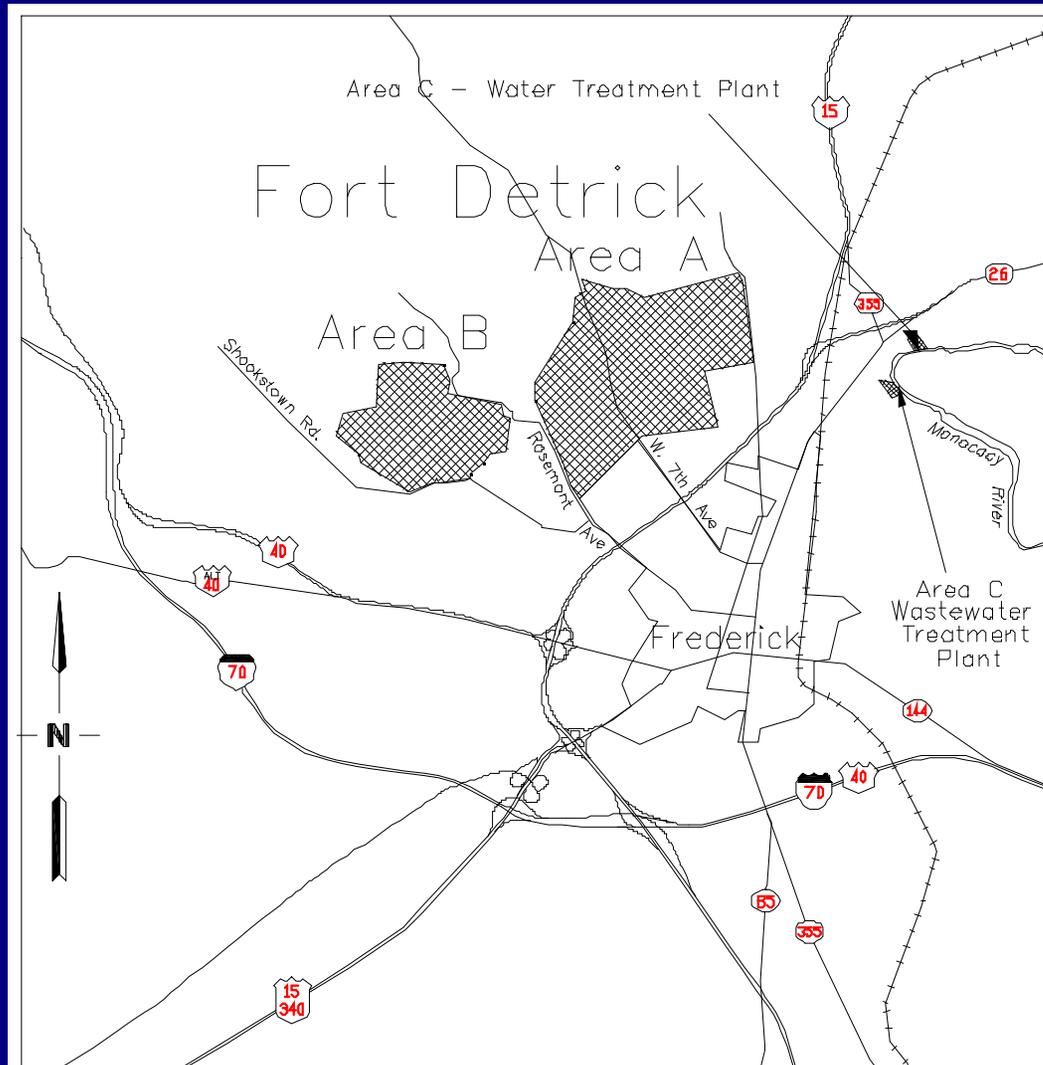
- **Complete Qualitative Human Health Risk Assessment - March/Early April**
- **Final Report August 1999**



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Area C - Location

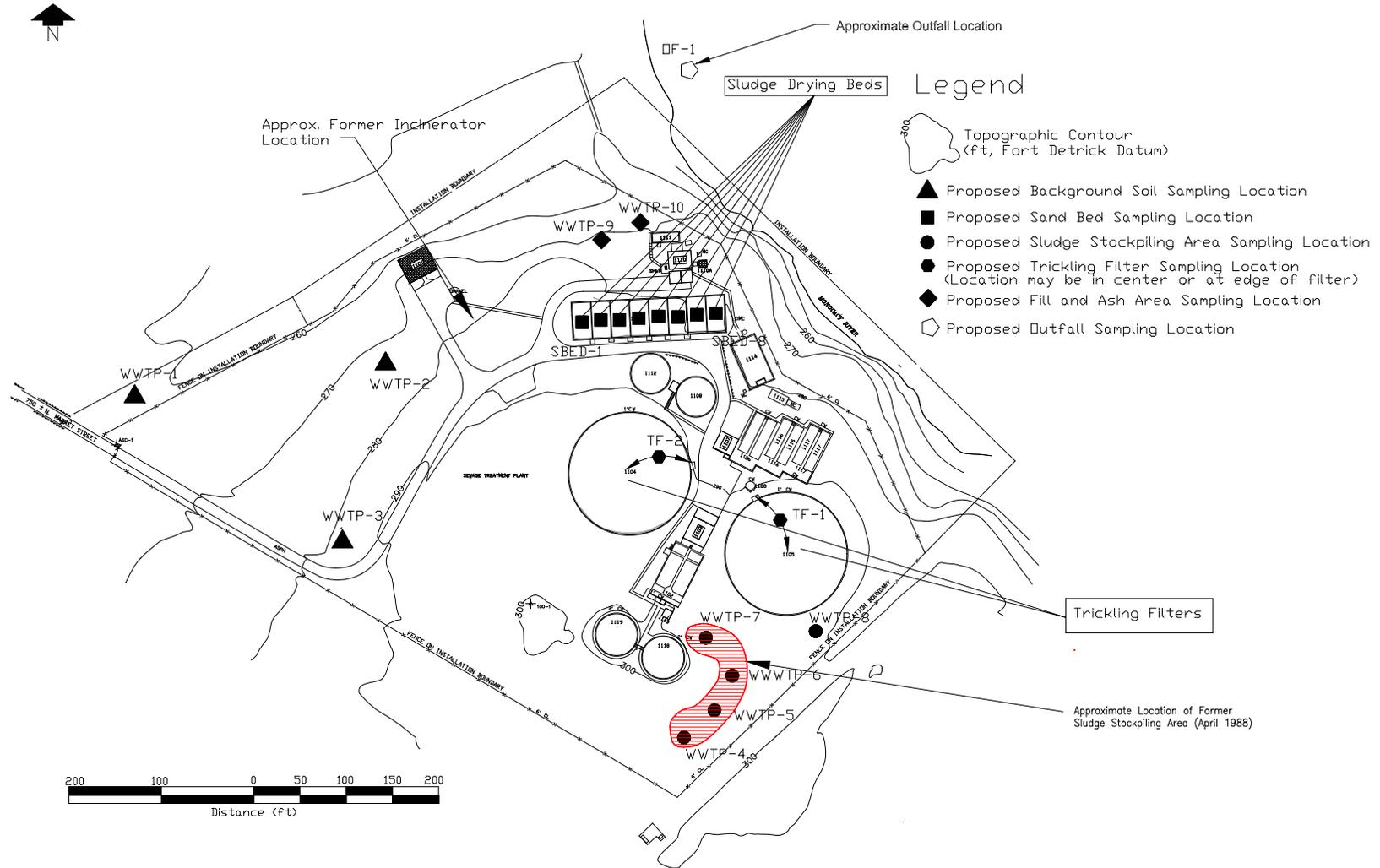




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Area C - Wastewater Treatment Plant Sampling Locations





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Independent Technical Review (ITR) Draft Responses

Four general recommendations were made by the ITR.

Recommendations

- Identify and document the specific legal and risk factors driving remedial response at Area B-11.

- Develop a Strategic Plan and updated conceptual model for Area B-11.

- Identify and implement interim actions for Area B-11, such as soil vapor extraction, using a risk-based approach.

- Collect additional data to support a focused feasibility study of alternatives for final remedial response actions.

Fort Detrick Responses

- Agree to have legal resources review drivers. Requested that State review drivers. Risk factors being assessed with additional investigation.

- FTD agrees that a strategic plan and a new conceptual model for Area B-11 and groundwater will need to be developed using current data and any data which may be acquired for enhancement of current knowledge of source area(s) and transport.

- FTD agreed to assess the potential for soil vapor extraction using soil vapor permeability tests. Options for removal of separate-phase product would also be addressed.

- FTD has agreed to an expanded groundwater tracer study, installation of additional monitoring wells, reassessment of current data to examine for differentiating chemical signatures for the shallow and deep aquifer areas, long term monitoring, further assessment of the fate of contaminated water and identification of any additional off-site receptors. A focused feasibility study will be conducted.



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IRP Priority List

PRI	DESCRIPTION	COMMENT
	RAB Admin Contract RAB	N/A
	PM support	N/A
A	GW Treatment System for 3 Residences	Residents
B	RAD GW Sampling-Wells 17,56,58,& 59	MDE Comments
B	Robinson Spring - SVOC Sample	MDE Comments
B	Test Low Flow Sampling - Apr 99 Round	MDE Comments
B	ITR Efforts	ITR Comment
B	Additional Sampling and Analysis	Other Work
B	Shookstown Rd Wells Survey and Sampling	Other Work
B	Well Maintenance	Other Work



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IRP Priority List (Continued)

PRI	DESCRIPTION	COMMENT
C	FFS for GW in Area B	ITR Comment
C	Well 57D Rehab & Product Removal	ITR Comment
D	Area C - Investigation	Other Work
D	Water Towers Sample and Analysis	Other Work
E	Area B6 & B8: EM61 Survey	MDE Comments
E	B-3 Inactive Landfill Sample and Anal	MDE Comments
E	Review of Risk (by site) for all new data.	MDE Comments
E	Area B - Weather Station	Other Work
F	Water Towers - IRA of Soil	Other Work



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IRP Priority List (Continued)

<u>PRI</u>	<u>DESCRIPTION</u>	<u>COMMENT</u>
G	SVE Permeability Testing	ITR Comment
FY00	Portable Carbon Treatment Unit	Other Work
FY00	Area B - Deep Aquifer Testing	ITR Comment
FY00	Dye Trace Study	ITR Comment
FY00	Area B Data Gaps - Install 11 Wells	ITR Support
FY00	Area A - IRA (Carbon Filter System)	Other Work