



Fort George G. Meade

Groundwater Contamination, Odenton, Maryland Interim Measures Update

Restoration Advisory Board Meeting January 28, 2009



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Study Areas



- 1-mile radius surrounding monitoring wells MW-125d/123s & MW-126d/124s located at the intersection of North Patuxent Road and Dovetail Lane, Odenton
- Old Dairy Farm Road, Gambrills



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Monitoring Well Results



Analytes	Maximum Contaminant Level(MCL)	MW-125d	2004 Results	2005 Results	2008 Results	March 2009 Results	June 2009 Results	MW-126d	2004 Results	2005 Results	2008 Results	March 2009 Results	June 2009 Results
METALS													
Lead	15		16.3	ND	NT	NT	NT		14.4	ND	NT	NT	NT
Thallium	2		6.9	ND	NT	NT	NT		ND	ND	NT	NT	NT
VOLATILE ORGANICS													
Acetone			49.2	120	ND	ND	ND		ND	ND	ND	ND	ND
CCl ₄	5		21.3	20	25	20.3	17.0		4.1	3	51	21.8	65.8
Chloroform	-		0.851	0.8	11	ND	1.0		0.431	0.29	21	ND	1.6
DCE	70		ND	ND	-0.8	ND	ND		0.421	2.3	33	0.691	2.3
PCE	5		2.8	1.2	5	0.661	ND		12.4	6.5	51	11.5	31.4
Toluene	1,000		0.361	1.8	ND	ND	ND		0.51	ND	ND	ND	ND
TCE	5		0.5	0.28	11	ND	ND		3.5	2.4	16	4.9	13.1

Analytes	MW-123s	2004 Results	March 2009 Results	June 2009 Results	MW-124s	2004 Results	March 2009 Results	June 2009 Results
METALS		All Below MCLs	NT	NT		All Below MCLs	NT	NT
VOLATILE ORGANICS		Dry Well	All ND	All ND		All ND	All ND	All ND

All results in micrograms per liter (ug/L)

NT = Not Tested

ND = Not Detected

CCl₄ = Carbon Tetrachloride

DCE = cis-1,2-Dichloroethene

PCE = Tetrachloroethene

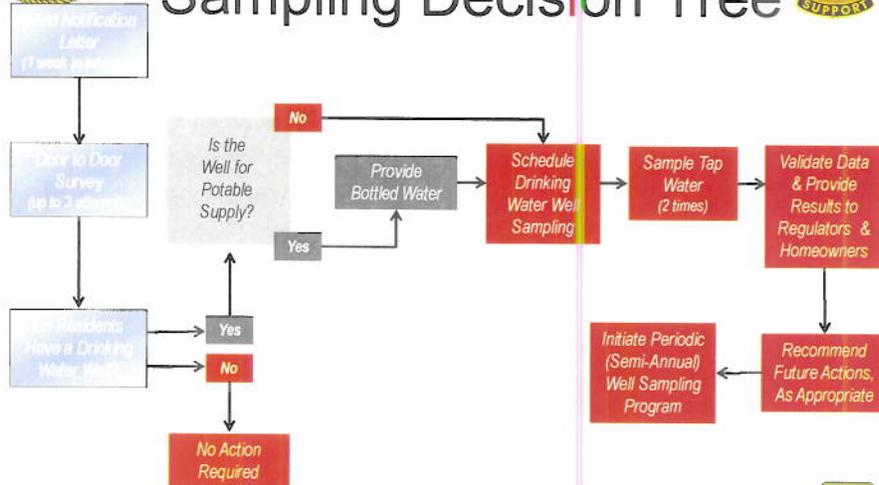
TCE = Trichloroethene



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Drinking Water Well Sampling Decision Tree



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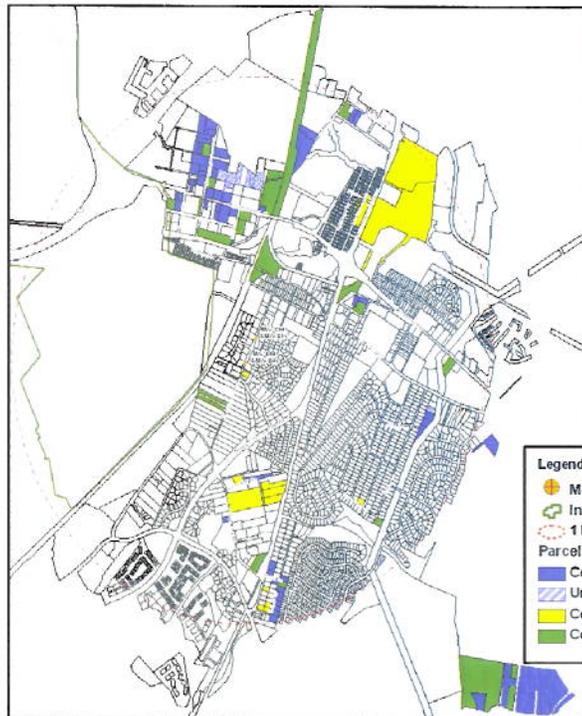
Drinking Water Well Survey



- Initiated April 29, 2009
- Concluded January 21, 2010
- Over 2,500 properties within 1-mile radius
- 16 additional properties on Old Dairy Farm Road
- Results; 1,679 surveys answered
 - 71 Confirmed Primary Drinking Water Source
 - 10 Unconfirmed Primary Drinking Water Source
 - 21 Confirmed Non-Drinking Water Source
 - 24 Confirmed No Well on Property

Definitions:

- *Primary Source:* Well is used as sole source of drinking water for property
- *Non-Drinking Water Source:* Well is present on property, but public water is used as drinking water source. Well water may be used for other purposes, such as watering gardens.
- *Confirmed:* A response to survey was received from property owner/tenant.
- *Unconfirmed:* No response to survey to date, but Anne Arundel County data indicates a well is present on the property.



Drinking Water Well Survey Results

Legend

- Monitoring Well
- Installation Boundary
- 1 Mile Radius from Monitoring Wells
- Parcel Boundary
- Confirmed Primary Source (71)
- Unconfirmed Primary Source (10)
- Confirmed Secondary Source (21)
- Confirmed No Well on Property (24)





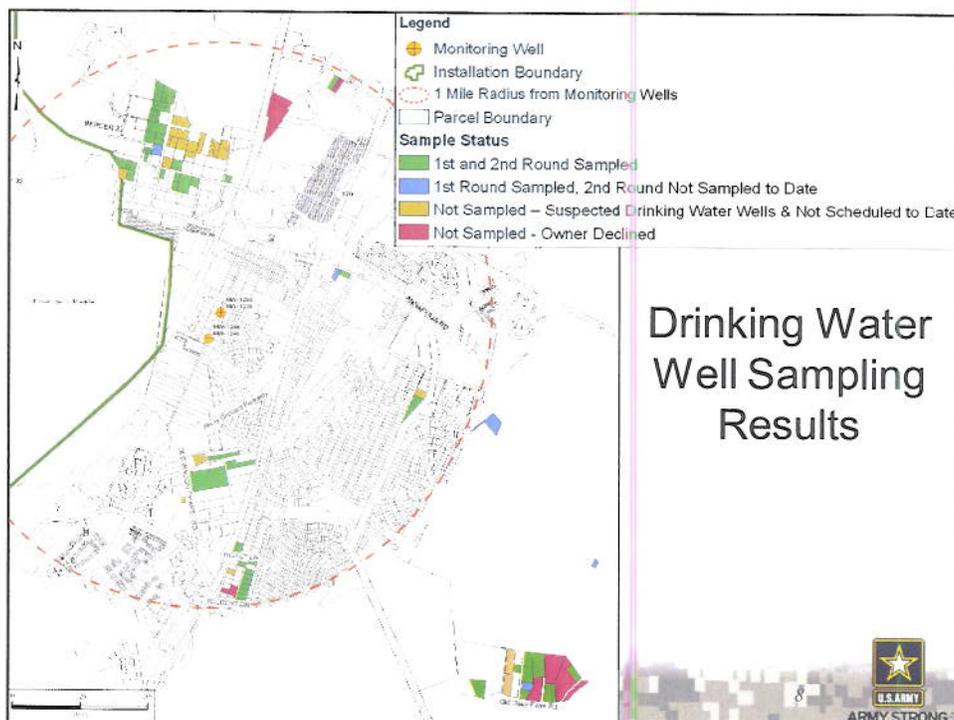
Drinking Water Well Sampling



- Initiated June 5, 2009
- 71 Confirmed drinking water wells
- Round #1
 - 55 drinking water wells sampled
- Round #2
 - 51 drinking water wells sampled
- Reasons why all 71 confirmed wells were not sampled
 - Owner/tenant unresponsive to sampling request
 - Owner/tenant unresponsive to attempts to schedule
 - Owners declined sampling



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Drinking Water Well Results



Street	Addresses with Detections		Dichloroethene (MCL - 70 µg/L)		Dichloroethane (MCL - 5 µg/L)		Trichloroethene (MCL - 5 µg/L)		Tetrachloroethene (MCL - 5 µg/L)		Carbon Tetrachloride (MCL - 5 µg/L)		Methylene Chloride (MCL - 5 µg/L)	
	Round 1	Round 2	# of Detections	Range (µg/L)	# of Detections	Range (µg/L)	# of Detections	Range (µg/L)	# of Detections	Range (µg/L)	# of Detections	Range (µg/L)	# of Detections	Range (µg/L)
Baliol Ln	0	1	--	--	--	--	--	--	1	0.72J	--	--	--	--
Berger St	0	1	--	--	1	0.15J	--	--	--	--	--	--	--	--
Murray Rd	2	1	--	--	--	--	--	--	2	0.94J-2.6	3	0.88J-1.2	--	--
Nevada Ave	6	7	6	1.1-1.7	--	--	3	0.46J-0.87J	8	0.60J-5.7	--	--	1	0.60J
Galloway Rd	1	1	--	--	--	--	2	3.2-3.5	2	1.3-1.9	--	--	--	--
Robey Ln	3	2	5	0.22J-0.44J	--	--	--	--	--	--	--	--	--	--
Tolbert Ln	0	1	1	0.18J	--	--	--	--	--	--	--	--	--	--

J = Estimated value
MCL = Maximum Contaminant Level for tap water as defined by the US Environmental Protection Agency
µg/L - one microgram per liter which is equivalent to one part per billion
*Only properties with detections related to the Interim Measures for Monitoring Wells 125d and 126d study are included in the table.
** Bold indicates value above MCL. Only one sample was above the MCL and resident is receiving bottled water.
*** Data is current as of 25 January 2010.



Evaluation of Drinking Water Well Interim Results



- No MCL exceedances downgradient of MWs 125d/123s and 126d/124s
- Only one detection above MCL within study area
 - Nevada Ave
 - Resident supplied bottled water (beginning July 2009)
 - Cross-gradient and approximately 0.75 miles from MW-125d/123s and MW-126d/124s
 - Monthly drinking water sampling initiated





Nevada Avenue Monthly Sampling - Interim Results



- Initiated in October 2009 for property with MCL exceedance and 2 adjacent properties
- No MCL exceedances to date (one equal to PCE MCL)

Month	Dichloroethene (MCL - 70 µg/L)		Tetrachloroethene (MCL - 5 µg/L)		Trichloroethene (MCL - 5 µg/L)	
	# of Detections	Range (µg/L)	# of Detections	Range (µg/L)	# of Detections	Range (µg/L)
Oct 09	3	1.1-1.8	3	2.7-5.0	2	0.77J-0.84J
Nov 09	2	1.7	2	4.3-4.6	2	0.52J-0.71J
Dec 09	2	1.8-109K	2	3.6-4.2	2	0.63J-0.68J

Data Qualifiers:

- B - compound was not detected substantially above the level reported in laboratory or field blanks
- K - reported value may be biased high
- J - estimated concentration below the method detection limit



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Bottled Water



- Bottled water is supplied to properties:
 - Identified drinking water drinking water well, and
 - Used as primary source for drinking water (i.e., not connected to county water), and
 - Accepted by tenant/owner
- Status:
 - 44 properties supplied water to date
 - Additional deliveries available pending tenant/owner's agreement



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Next Steps



- Complete private well survey – send certified letters requesting participation
- Complete drinking water well sampling
- Continue to supply bottled water
- Reporting
 - Survey Summary Report (Feb 2010)
 - Round #1 Sample Summary Report (Mar 2010)
 - Interim Measures Report (May 2010)



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Additional Information



- Additional information available at:
 - Fort Meade Environmental Management System (EMS) website:
<http://www.fortmeade-ems.org>
 - U.S. Environmental Protection Agency website on Fort Meade:
<http://www.epa.gov/reg3hwmd/super/sites/MD9210020567/index.htm>
 - Maryland Department of Environment website:
<http://www.mde.state.md.us/>
 - Anne Arundel County Department of Health website:
www.aahealth.org
 - Agency for Toxic Substances and Disease Registry website for chemical factsheets: <http://www.atsdr.cdc.gov/az/a.html>
- A copy of this presentation can be found on the Fort Meade EMS website



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