

Drinking Well Impact and Environmental Investigation
Grave Run-Hoffmanville Area, Manchester, Carroll County, Maryland
Groundwater Investigation Case No. 2006-1127-CL

The Maryland Department of the Environment (MDE), Oil Control Program (OCP), is investigating the source of methyl tertiary-butyl ether (MTBE) detected in several drinking water wells in the Grave Run Road/Hoffmanville Road community. The MDE-OCP has been coordinating this investigation with the Carroll County Health Department (CCHD).

MTBE is a fuel additive commonly used to reduce carbon monoxide and ozone levels caused by auto emissions. There is no national regulatory standard for MTBE in drinking water. In 1997, the U.S. Environmental Protection Agency (EPA) issued an advisory for MTBE based on taste and odor of 20 to 40 parts per billion (ppb). Although the EPA has not established a regulated Maximum Contaminant Level (MCL) for MTBE, the MDE has adopted an action level of 20 ppb.

On June 7, 2006, the CCHD alerted the Oil Control Program of MTBE impact above the State's action level to private drinking water supply wells located on Grave Run Road. On June 21, 2006, the CCHD provided written notification to residents in the area regarding the MTBE impact to drinking water wells. The MDE is currently conducting a groundwater investigation in the Grave Run Road/Hoffmanville Road community to determine the source(s) of the problem. There are no nearby gas stations or large petroleum sources in the area.

The only historic MDE-OCP case in the area involved the removal of a 2,000-gallon heating oil steel underground storage tank (UST) in November 1998, located 1.5 miles to the north and topographically downgradient of the impacted area. After conducting several field reconnaissances in the Grave Run Road/Hoffmanville Road community, the MDE-OCP identified two locations with petroleum USTs and opened two new cases. In July 2006, the Department issued directive letters to two property owners requiring the removal of the out-of-service USTs and the testing/removal of an active heating oil UST. In September 2006, both property owners commissioned the removals of their USTs. The Department subsequently closed these respective cases in June 2008.

To date, the CCHD has sampled sixty-five (65) drinking water wells in the area. The MDE has installed granular activated carbon (GAC) filtration systems for private drinking water wells that have been impacted by petroleum constituents above the State's action level. A total of five (5) treatment systems will be monitored and maintained by the Department at no expense to residents.

65 private drinking water wells have been sampled to date :

- 41 wells - No detectable levels of MTBE
- 16 wells - Detectable levels of MTBE below 5 ppb
- 2 wells - Detectable levels of MTBE between 5 and 10 ppb
- 6 wells - MTBE detected above 20 ppb. GAC filtration systems have been installed.
 - 3812 Grave Run Road - (GAC installed 07/19/06)
 - 3904 Grave Run Road - (GAC installed)
 - 3926 Grave Run Road - (GAC installed 07/19/06)
 - 5254 Hoffmanville Road - (GAC 08/07/06)
 - 5400 Hoffmanville Road - (refused GAC installation)
 - 5405 Hoffmanville Road - (GAC installed 07/20/06)

Chronology

- June 2006. CCHD received drinking water sample results collected 05/17/06 from a private well.
 - 3904 Grave Run Road MTBE at 63.8 ppb; TAME at 0.54 ppb.
- June 7, 2006. MDE-OCP field reconnaissance to determine potential sources of MTBE contamination.

- June 16, 2006. MDE-OCP site visit to inspect an abandoned 550-gallon gasoline UST at 5400 Hoffmanville Road.
- June 22, 2006. MDE-OCP site visit to 3904 Grave Run Road. No USTs were present on site.
- June 26, 2006. CCHD notified approximately 91 area residents of the MTBE contamination.
- June 26, 2006. Letter from the resident at 3904 Grave Run Road to MDE-OCP requesting financial reimbursement for a GAC filtration system.
- June 27, 2006. MDE received 14 drinking water sample results from the State Lab. CCHD collected these samples 6/22/06.
- June 28, 2006. MDE received 4 drinking water sample results from the State Lab. CCHD collected these samples 6/07/06.
- June 29, 2006. MDE-OCP notified CCHD, via e-mail, of plans to install GAC filtration systems on the 4 homes exceeding the MTBE action level. One home had already installed a GAC filtration system, which will be taken over by the State.
- June 30, 2006. MDE-OCP visited 4 properties to offer the installation of GAC filtration systems. The resident at 5400 Hoffmanville Road refused to sign the access agreement for the GAC system.
- June 30, 2006. CCHD received drinking water sample results collected 6/07/06 from a private well.
 - 3904 Grave Run Road MTBE at 63.6 ppb; TAME at 0.81 ppb.
- July 5, 2006. CCHD letter notifying area residents of a public meeting on July 20, 2006.
- July 19, 2006. MDE received 18 drinking water sample results from the State Lab. CCHD collected these samples 06/23/06, 7/07/06 and 07/10/06.
- Public Meeting on July 20, 2006 attended by MDE and CCHD.
- August 8, 2006. CCHD faxed drinking water sample results collected 07/2006 from a private well.
- August 8, 2006. MDE granted access to take over maintenance of the GAC system, at 3904 Grave Run Road.
- August 10, 2006. MDE sampled GAC systems at 3926 Grave Run Road and 5405 Hoffmanville Road. Residents notified of results August 30, 2006 and September 1, 2006.
- August 11, 2006. MDE-OCP on-site at 5233 Hoffmanville Road – metal detector use indicates no underground storage tanks on property.
- August 18, 2006. MDE sampled GAC system at 3904 Grave Run Road. Residents notified of results September 1, 2006.
- August 28, 2006. MDE sampled GAC system at 5254 Hoffmanville Road. Residents notified of results October 10, 2006.
- September 28, 2006. MDE sampled 5400 Hoffmanville Road and the GAC systems at 5254 Hoffmanville Road and 3926 Grave Run Road. Residents notified of results 10/12 – 13/06.
- August 18, 2006. MDE sampled GAC system at 3904 Grave Run Road. Residents notified of results 09/01/06.

- November 15 – 17, 2006. MDE and the CCHD targeted select drinking water wells for another round of sampling (*see table for results*).
- February 22, 2007. MDE notified residents of results of the GAC system samples collected on January 31, 2007 (*see table for results*).
- March 5, 2007. MDE received the results of a water sample collected by the CCHD at 3740 Line Drive, Millers (*see table for results*).
- April 23, 2007. MDE selected 22 residences for another round of sampling.
- April 25, 2007. MDE letters to three residential properties with home heating oil USTs, requiring their removal and, or proper abandonment of the given the age of these tanks.
 - 5248 Hoffmanville Road
 - 5218 Hoffmanville Road
 - 5408 Hoffmanville Road
- April 25 – 26, 2007. CCHD collected another round of drinking samples (*see table for results*), the residents notified of sampling results in writing by the CCHD.
- May 16, 2007. MDE notified residents of results of the GAC system samples collected on April 2007 (*see table for results*).
- May 18, 2007. MDE site visit to 5408 Hoffmanville Road to observe the proper abandonment in place of the 1,000-gallon #2 heating oil UST. No obvious perforations were observed. Post abandonment soil samples were collected for lab analysis.
- May 24, 2007. MDE-OCP received *Tank Abandonment Report – May 23, 2007*.
 - The 1000-gal UST was properly cleaned and filled with an inert material at 5408 Hoffmanville Road.
 - A new AST was placed in the basement of the home.
 - A post-abandonment soil sample was collected. Results were non-detect for petroleum constituents.
- August 8, 2007. MDE notified residents of results of the GAC system samples collected on July 19, 2007 (*see table for results*).
- August 27, 2007. MDE notified residents of results of the GAC system samples collected on July 30, 2007 (*see table for results*).
- September 6, 2007. MDE notified residents of results of the GAC system samples collected on August 8, 2007 (*see table for results*).
- November 8, 2007. MDE notified residents of results of the GAC system samples collected on October 23, 2007 (*see table for results*).
- March 10, 2008. CCHD notified residents of results of drinking water samples collected on January 16, 2008 (*see table for results*).
- March 12, 2008. MDE notified residents of results of the GAC system samples collected on February 20, 2008 (*see table for results*).
- March 14, 2008. MDE notified residents of results of the GAC system samples collected on February 28, 2008 (*see table for results*).
- July 18, 2008. MDE notified residents of results of the GAC system samples collected on June 30, 2008 (*see table for results*).

- December 1, 2008. MDE notified residents of results of the GAC system samples collected on October 29, 2008 (*see table for results*).

Other Related Cases

Wisner Residence – 5400 Hoffmanville Road Case No. 2007-0021-CL (open)

- June 16, 2006. MDE-OCP site visit to inspect two abandoned USTs (a 550-gallon gasoline and a 1,000-gallon diesel). Property owner indicated that the gasoline UST was installed in the 1940s and last used in 1979. The former egg plant utilized the diesel tank and the gasoline tank was utilized by a general store that operated on the premises.
- June 28, 2006. CCHD received drinking water sample results collected 6/07/06 from a private well.
 - 5400 Hoffmanville Road MTBE at 114 ppb; TAME at 6.46 ppb.
- June 30, 2006. MDE-OCP site visit. Property owner refused offer of a GAC filtration system.
- July 13, 2006. MDE letter required removal of the abandoned USTs and post-excavation soil samples.
- September 20, 2006. MDE-OCP site visit to observe the removal of three unregulated farm tanks. Post excavation samples were collected for lab analyses.
 - A 550-gallon leaded gasoline UST was removed from the corner of Grave Run and Hoffmanville Road. No obvious perforations observed.
 - A 10,000-gallon diesel UST, adjacent to the former egg house. No obvious perforation observed.
 - A 3,000-gallon gasoline UST, adjacent to the former egg house. No obvious perforations were observed.
- October 10, 2006. MDE-OCP received *Tank Removal Report –October 5, 2006*.
 - Based on interviews with the homeowner it is believed that the tanks were last used in the 1970s.
 - All 3 USTs were properly disposed of off-site.
 - Each tank excavation was backfilled with clean fill material.
 - A total of 4 post-excavation soil samples were collected.
 - A 550-gallon leaded gasoline UST - tank pumped of 750 gallons of oily water. S1 – (TPH-GRO – 206 ppm; TPH-DRO – 1120 ppm). Due to the close proximity of impacted soils to the road these soils could not be removed.
 - A 10,000-gallon diesel UST – tank was empty S2 and S3 – below regulatory levels for petroleum constituents (TPH-DRO – 23 ppm in S2).
 - A 3,000-gallon gasoline UST – tank pumped of 750 gallons of oily water for proper disposal off-site. S4 – non-detect for petroleum constituents.
- June 20, 2008. *MDE-OCP closed case no 2007-0021-CL*.

Feeser Residence – 3812 Grave Run Road – Case No. 2007-0022-CL (open)

- June 28, 2006. CCHD received drinking water sample results collected 6/07/06 from a private well.
 - 3812 Grave Run Road MTBE at 210 ppb; TAME at 6.17 ppb.
- June 30, 2006. MDE-OCP site visit to offer the installation of a GAC system. A 550-gallon heating oil UST was discovered, approximately 50 years old.
- July 12, 2006. MDE-OCP letter requiring testing or removal of the 550-gallon heating oil UST.
- August 10, 2006. MDE collected samples from the GAC system. Resident notified of results on September 1, 2006.
- August 30, 2006. MDE-OCP issues notice of Violation NV-2007-007 requiring the removal of the heating oil UST.

- September 20, 2006. MDE-OCP on-site to observe the removal of the 550-gallon #2 heating oil UST. No obvious perforations were observed. Post excavation soil samples were collected for lab analysis.
- October 30, 2006. MDE-OCP received *Tank Removal Report –October 23, 2006*.
 - The UST was properly disposed of off-site.
 - The tank excavation was backfilled with clean fill material and a new AST was placed over the excavation.
 - A post-excavation soil sample was collected. Results were non-detect for petroleum constituents.
- June 20, 2008. *MDE-OCP closed case no 2007-0022-CL*.

Contacts:

- Maryland Department of the Environment (MDE) 410-537-3443 (Oil Control Program)
- Carroll County Health Department (CCHD) 410-876-1884

Future Updates

- Future updates on this case investigation will be posted at www.mde.state.md.us [at the MDE home page, (select) Land, (select) Program, (select) Oil Control, (select) Remediation Sites].

Disclaimer:

The intent of this fact sheet is to provide the reader a summary of site events as they are contained within documents available to MDE. To fully understand the site and surrounding environmental conditions, MDE recommends that the reader review the case file that is available at MDE through the Public Information Act. The inclusion of a person or company's name within this fact sheet is for informational purposes only and should not be considered a conclusion by MDE on liability, involvement in a wrongful act or contribution to environmental damage.

Drinking Water Sampling results in the Grave Run-Hoffmanville Community

GAC Systems ✓ Installed ✗ Refused	Sample location	Sample dates	Petroleum Constituents of Concern	
			MTBE (20 ppb – action level)	Other petroleum constituents TAME is unregulated TBA is unregulated 1,2 DCA MCL at 5ppb
	3700 Grave Run Road	CCHD- 07/25/06	ND	ND
	3708 Grave Run Road	CCHD- 07/25/06	ND	ND
	3714 Grave Run Road	CCHD- 07/10/06	ND	ND
	3718 Grave Run Road	CCHD- 07/10/06	ND	ND
	3722 Grave Run Road	CCHD- 07/10/06	ND	ND
	3730 Grave Run Road	CCHD- 07/10/06	ND	ND
	3731 Grave Run Road	CCHD- 06/23/06	0.56	ND
		CCHD- 11/15/06	0.89	ND
		CCHD – 04/25/07	ND	ND
	3734 Grave Run Road	CCHD- 06/23/06	ND	ND
		CCHD – 11/15/06	ND	ND
		CCHD- 04/26/07	ND	ND
	3736 Grave Run Road	CCHD- 06/22/06	4.28	ND
		CCHD- 11/15/06	4.71	ND
		CCHD – 04/30/07	5.24	TAME – 0.70
	3739 Grave Run Road	CCHD- 06/22/06	1.08	ND
		MDE – 11/15/06	1.06	ND
		CCHD – 04/25/07	1.91	ND
	3800 Grave Run Road	CCHD- 06/07/06	ND	ND
		MDE – 11/15/06	ND	ND
		CCHD – 04/25/07	ND	ND
✓ GAC installed on 07/19/06	3812 Grave Run Road	CCHD- 06/07/06	210	TAME – 6.17
		MDE – 8/10/06	Pre-filter – 400 Mid-filter – ND After filter – ND	TAME – 10 (pre-filter)
		MDE – 10/26/06	Pre filter – 570 Mid-filer – ND After filter- -ND	TAME – 14 (pre-filter)
		MDE – 12/1/06	Pre filter – ND Mid-filer – ND After filter -ND	ND
		MDE – 01/31/07	Pre-filter – 660 Mid-filter – ND After-filter - ND	TBA – 28 (pre-filter) TAME – 16 (pre-filter)
		MDE – 04/26/07	Pre-filter – 470 Mid-filter – 4.5 After-filter - ND	TAME – 12 (pre-filter)
		MDE – 07/19/07	Pre-filter – 370 Mid-filter – 0.60 After filter – ND	TAME – 21 (pre-filter)
		MDE – 10/23/07	Pre-filter – 560 Mid-filter – ND After filter – ND	ND
		MDE – 02/26/08	Pre-filter – 820 Mid-filter – ND After filter – ND	TBA – 200 (pre-filter) TAME – 55 (pre-filter)
		MDE – 06/30/08	Pre-filter – 430 Mid-filter – 0.5 After-filter - ND	ND
		MDE – 10/01/08	Pre-filter – 510 Mid-filter – ND After-filter - ND	TAME – 35 ppb (pre-filter)
	3816 Grave Run Road	CCHD – 12/20/06	ND	ND
		CCHD – 01/06/08	ND	Toluene – 0.52 ppb
	3818 Grave Run Road	CCHD- 11/15/06	1.14	ND
		CCHD – 01/16/-8	1.48 ppb	ND
	3824 Grave Run Road	CCHD- 8/16/06	ND	ND

	3829 Grave Run Road	CCHD- 06/22/06	ND	ND
		CCHD – 11/15/06	ND	ND
		CCHD- 04/26/07	ND	ND
✓ MDE takes over system maintenance	3904 Grave Run Road	CCHD- 05/17/06	63.8	TAME – 0.54
		CCHD- 06/07/06	63.6	TAME – 0.81
		MDE – 8/14/06	Pre-filter – 90 Mid-filter – 0.5 After filter – ND	TBA – 46 (pre-filter)
		MDE – 10/26/06	Pre-filter – 110 Mid-filter – 22 After filter – ND	TAME – 2
		MDE – 01/31/07	Pre-filter – 120 Mid-filter – ND After filter - ND	ND
		MDE – 04/26/07	Pre-filter – 130 Mid-filter – 32 After filter - ND	ND
		MDE – 08/08/07	Pre-filter – 126 Mid-filter – ND After filter – ND	ND
		MDE – 10/23/07	Pre-filter – 110 Mid-filter – 47 After filter - ND	ND
		MDE – 02/20/08	Pre-filter – 98 Mid-filter – 7.3 After filter - ND	ND
		MDE – 06/12/08	Pre-filter – 110 Mid-filter – 29 After-filter - ND	ND
		MDE – 10/29/08	Pre-filter – 63 Mid-filter – 12 After-filter - ND	ND
	3908 Grave Run Road	CCHD- 06/22/06	0.51	ND
		CCHD- 11/17/06	0.79	Tetrachloroethene – 0.5e
		CCHD – 05/08/07	1.93	ND
	3914 Grave Run Road	CCHD- 06/22/06	ND	ND
	3920 Grave Run Road	CCHD- 08/01/06	ND	ND
✓ GAC installed on 07/19/06	3926 Grave Run Road	CCHD- 06/07/06	28.6	TAME – 0.58
		MDE – 8/10/06	Pre-filter – 33 Mid-filter – ND After filter - ND	1,2-Dichloroethane – 180
		MDE – 9/28/06	Pre-filter – 43 Mid-filter – ND After filter - ND	ND
		MDE – 12/1/06	Pre-filter – 47 Mid-filter – 3 After filter - ND	TAME 1
		MDE – 01/31/07	Pre-filter – 48 Mid-filter – 9 After filter - ND	
		MDE – 04/26/07	Pre-filter – 50 Mid-filter – ND After filter - ND	ND
		MDE – 07/30/07	Pre-filter – 46 Mid-filter – ND After filter - ND	ND
		MDE – 10/23/07	Pre-filter – 50 Mid-filter – ND After filter - ND	ND
		MDE – 02/26/08	Pre-filter – 48 Mid-filter – 5.90 After filter - ND	ND
		MDE – 06/12/08	Pre-filter – 41 Mid-filter – 1.1 After-filter - ND	ND
		MDE – 10/29/08	Pre-filter – 31 Mid-filter – 0.5 After-filter - ND	ND
	3932 Grave Run Road	CCHD- 06/22/06	ND	ND
	3935 Grave Run Road	CCHD-08/01/06	ND	ND
	3948 Grave Run Road	CCHD- 07/25/06	ND	ND
		MDE – 11/15/06	ND	ND
		CCHD – 04/26/07	ND	ND

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			MTBE (20 ppb – action level)	Other petroleum constituents TAME is unregulated TBA is unregulated 1,2 DCA MCL at 5ppb
	3950 Grave Run Road	CCHD- 07/25/06	ND	ND
	4005 Grave Run Road	CCHD- 07/25/06	ND	ND
	4008 Grave Run Road	CCHD- 08/09/06	ND	ND
	4013 Grave Run Road	CCHD- 08/01/06	ND	ND
	4015 Grave Run Road	CCHD- 08/01/06	ND	ND
	4022 Grave Run Road	CCHD- 07/25/06	ND	ND
	4808 Hoffmanville Road	Private -	0.7	ND
	5190 Hoffmanville Road	CCHD- 07/25/06	ND	ND
	5130 Hoffmanville Road	CCHD- 07/24/06	ND	ND
	5131 Hoffmanville Road	CCHD- 07/24/06	ND	ND
	5135 Hoffmanville Road	CCHD – 07/24/06	ND	ND
	5137 Hoffmanville Road	CCHD- 07/24/06	ND	ND
	5140 Hoffmanville Road	CCHD – 07/25/06	ND	ND
	5141 Hoffmanville Road	CCHD – 07/25/06	ND	ND
	5143 Hoffmanville Road	CCHD- 08/01/06	1.09	ND
	5145 Hoffmanville Road	CCHD- 08/01/06	ND	ND
	5210 Hoffmanville Road	CCHD- 07/25/06	ND	ND
	5211 Hoffmanville Road	CCHD- 07/24/06	ND	ND
	5217 Hoffmanville Road	CCHD- 07/24/06	1.43	ND
	5218 Hoffmanville Road	CCHD- 07/24/06	ND	ND
		CCHD – 04/26/07	1.47	ND
	5223 Hoffmanville Road	CCHD- 07/24/06	4.25	ND
		CCHD- 11/15/06	7.77	ND
		CCHD – 04/30/07	5.60	ND
	5233 Hoffmanville Road	CCHD- 07/10/06	6.71	ND
		CCHD – 11/15/06	1.54	ND
		CCHD- 04/26/07	1.82	ND
	5244 Hoffmanville Road	CCHD- 07/07/06	0.96	ND
		MDE- 11/16/06	1.34	ND
		CCHD – 04/30/07	1.95	ND
	5248 Hoffmanville Road	CCHD- 07/07/06	ND	ND
		MDE – 11/15/06	1.37	ND
		CCHD – 04/27/07	ND	ND
	5250 Hoffmanville Road	CCHD – 07/18/06	4.5	ND
		MDE- 11/16/06	5.13	ND
		CCHD – 04/27/07	4.34	ND
	5265 Hoffmanville Road	CCHD- 07/10/06	3.18	ND
		CCHD- 11/15/06	6.23	TAME – 0.62
		CCHD – 04/27/07	0.62	ND

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			MTBE (20 ppb – action level)	Other petroleum constituents TAME is unregulated TBA is unregulated 1,2 DCA MCL at 5ppb	
✓ Aug 2006	5254 Hoffmanville Road	CCHD- 07/07/06	20.2	TAME – 8.02	
		CCHD- 07/24/06	30.1		
		MDE – 08/28/06	Pre-filter – 26 Mid-filter – ND After filter - ND	TAME 9 (pre-filter)	
		MDE – 09/28/06	Pre-filter – 30 Mid-filter – ND After filter - ND	TAME 10 (pre-filter)	
		MDE – 12/1/06	Pre-filter – 36 Mid-filter – ND After filter - ND	TAME 10 (pre-filter)	
		Mde – 01-31-07	Pre-filter – 37 Mid-filter – 0.5 After filter - ND	TAME 10 (pre-filter)	
		MDE – 04/26/07	Pre-filter – 26 Mid-filter – 2.4 After filter - ND	ND	
		GAC exchanged 06/14/07			
		MDE – 07/19/07	Pre-filter – 20 Mid-filter – ND After filter – ND	ND	
		MDE – 10/23/07	Pre-filter – 23 Mid-filter – ND After filter - ND	ND	
		MDE – 02/20/08	Pre-filter – 25 Mid-filter – ND After filter – ND	ND	
		MDE – 06/12/08	Pre-filter – 19 Mid-filter – ND After-filter – ND	ND	
		MDE – 10/29/08	Pre-filter – 18 Mid-filter – ND After-filter - ND	ND	
			5301 Hoffmanville Road	CCHD- 07/07/06	ND
		CCHD- 11/15/06	ND	ND	
	5308 Hoffmanville Road	CCHD- 07/07/06	ND	ND	
	5309 Hoffmanville Road	CCHD- 07/07/06	ND	ND	
	5312 Hoffmanville Road	CCHD- 06/22/06	1.46	ND	
		MDE – 11/15/06	1.11	ND	
		CCHD – 04/26/07	0.85	ND	
	5314 Hoffmanville Road	CCHD- 06/22/06	ND	ND	
	5315 Hoffmanville Road	CCHD- 06/22/06	3.54	ND	
		CCHD- 11/15/06	1.66	ND	
		CCHD – 04/26/07	1.20	ND	
	5316 Hoffmanville Road	CCHD- 06/22/06	0.81	ND	
		CCHD- 11/16/06	1.26	ND	
		CCHD – 04/26/07	0.56	ND	
	5321 Hoffmanville Road	CCHD- 06/22/06	3.58	ND	
		CCHD- 11/15/06	5.15	ND	
Privately installed GAC	5324 Hoffmanville Road	CCHD- 06/22/06	3.25	ND	
		CCHD – 11/16/06	Pre-filter – 4.38 Mid- Filter- ND After filter – ND		
		CCHD- 11/16/06	Pre-filter – 3.78 Mid- Filter – 1.16 After filter – ND	ND	
	5330 Hoffmanville Road	CCHD- 06/23/06	7.49	ND	
		MDE – 11/15/06	10.7	ND	
		CCHD – 04/26/07	12.7	Toluene – 1.67	

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			MTBE (20 ppb – action level)	Other petroleum constituents TAME is unregulated TBA is unregulated 1,2 DCA MCL at 5ppb
✗	5400 Hoffmanville Road	CCHD- 06/07/06	114	TAME - 6.46
		MDE - 09/28/06	160	TAME –8
		MDE – 11/15/06	173	TAME – 7.59
		MDE – 121/1/06	170	TAME – 6
		MDE – 01/31/07	120	TAME – 6 TBW – 6
		MDE – 04/26/07	180	TAME – 6.6
		MDE – 07/19/07	100	ND
		MDE – 10/23/07	73	ND
		MDE – 02/20/08	100	ND
		MDE – 06/12/08	89	
MDE – 10/29/08	55			
✓ GAC installed on 07/19/06	5405 Hoffmanville Road	CCHD- 06/22/06	24.8	TAME – 0.79
		MDE – 8/10/06	Pre-filter – 29 Mid-filter – ND After filter – ND	ND
		MDE – 10/12/06	Pre-filter – 14 Mid-filter – 1 After filter – ND	ND
		MDE – 01/31/07	Pre-filter – 35 Mid-filter – 7 After filter – ND	ND
		MDE – 04/26/07	Pre-filter – 31 Mid-filter – ND After filter – ND	ND
		MDE – 07/30/08	Pre-filter – 28 Mid-filter – ND After filter – ND	ND
		MDE – 10/23/08	Pre-filter – 27 Mid-filter – ND After filter – ND	ND
		MDE – 02/26/08	Pre-filter – 28 Mid-filter – 1.6 After filter – ND	ND
		MDE – 06/12/08	Pre-filter – 21 Mid-filter – ND After-filter – ND	ND
MDE – 10/29/08	Pre-filter – 46 Mid-filter – ND After-filter - ND	ND		
	5408 Hoffmanville Road	CCHD- 06/22/06	ND	ND
		MDE – 11/15/06	ND	ND
		CCHD – 04/25/07	0.57	ND
	3739 Line Drive Road	CCHD- 07/07/06	ND	ND
	3740 Line Drive Road	CCHD- 07/07/06	ND	ND
		CCHD- 02/26/07	1.06	ND
	3749 Line Drive Road	CCHD- 07/07/06	ND	ND
	3750 Line Drive Road	CCHD- 07/07/06	0.54	ND
		CCHD- 11/16/06	ND	ND