

MARYLAND DEPARTMENT OF THE ENVIRONMENT

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**Environmental Investigation
High's Store No. 1
2420 Whiteford Road, Whiteford
Harford County, Maryland
Case No. 2006-0441-HA**

The Maryland Department of the Environment (MDE), Oil control Program (OCP), in coordination with the Harford County Health Department (HCHD), is evaluating the impact of methyl tertiary-butyl ether (MTBE) at High's Store No. 1, located in Harford County.

In fall of 2005, the MDE-OCP received groundwater sampling results from the three newly installed monitoring wells. MTBE contamination was detected in a monitoring well up to 570 ppb. The station's drinking water supply well was sampled in June and December 2005 and was non-detect for petroleum constituents.

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 of 20 to 40 parts per billion (ppb), based on taste and odor. Although the EPA has not established a regulated Maximum Contaminant Level (MCL) for MTBE, the MDE has adopted an action level of 20 ppb.

This High's facility, operated by High's of Baltimore, Inc., has been an active store and service station since September 1993 when four underground storage tanks (USTs) were installed. There are currently five USTs on site: a 10,000-gallon gasoline; two 8,000-gallon gasoline; a 10,000-gallon compartmentalized diesel/kerosene; and a 12,000-gallon compartmentalized gasoline installed in March 1996. The UST system comprises double-walled composite steel with fiberglass-reinforced plastic and double-walled flexible plastic piping. Three monitoring wells, six tank field observation pipes, and a transient non-community drinking water supply well are located on-site.

Chronology

- September 28, 2005. MDE-OCP received electronic notification from High's consultant's of preliminary groundwater sampling data collected at 18 facilities operated by High's of Baltimore. The preliminary data included sampling results for the on-site drinking water well and monitoring well network located at the Whiteford High's #1.
 - June 23, 2005 sampling event.
PW (on-site drinking water supply well) non-detect for petroleum constituents (ND)
 - In June 2005, monitoring wells installed pursuant to the new MTBE emergency regulations.
 - July 15, 2005 Sampling event:
 - MW-1 MTBE at 570 ppb
 - MW-2 MTBE at 4 ppb
 - MW-3 MTBE at 120 ppb
- November 14, 2005. MDE-OCP received detailed sampling results *Monitoring Well Installation and Sampling Report - November 3, 2005*.
 - Groundwater flow southwesterly.

- November 30, 2005. MDE-OCP issued directive letter to High's requiring the following:
 - Perform a helium test to check vapor leaks in the gasoline UST system;
 - Test all spill catchment basins and containment sumps;
 - Conduct a self-audit of UST system;
 - Conduct semi-annual sampling of all monitoring wells and tank field monitoring pipes;
 - Conduct semi-annual sampling of the transient non-community drinking water supply well on-site;
 - Identify the drinking water supply well on a site map; and
 - Perform a half-mile survey.

- January 24, 2006. MDE-OCP received the UST system test results, well receptor survey, and well sampling results – *January 18, 2006*.
 - UST system testing results:
 - Stage II Pressure Decay: passed 7/6/05
 - Stage II Liquid Blockage: passed 7/6/05
 - Line leak detector test: passed 1/13/06
 - Tank tightness test: passed 7/6/05
 - Line tightness test: passed 7/6/05
 - Helium test: passed 1/13/06 (replaced risers)
 - Catch basin test: passed 1/3/06 (replaced premium)
 - December 21, 2005 sampling event (*see Table*).

- February 8, 2006. MDE-OCP received further well receptor survey information.

- March 15, 2006. MDE-OCP received further UST system test results:
 - Stage II Pressure Decay: passed 2/28/06
 - Stage II A/L Ratio: passed 2/28/06
 - Line leak detector test: passed 2/28/06
 - Line tightness test: passed 2/28/06

- June 14, 2006. MDE-OCP directive letter to High's, MDE requiring the following:
 - Submit containment sump testing; and
 - Stage II Dynamic Backpressure testing results.

- July 25, 2006. MDE-OCP received UST test results in response to the June 14, 2006 directive letter.
 - High's is unable to test the containment sumps at this site, due to Tight-Flex piping, and are working on development of a test boot. Once test results are completed, they will be forwarded to OCP.
 - The results of the Stage II Dynamic Backpressure testing were submitted. Testing was completed 2/28/06.

- August 3, 2006. MDE-OCP received *Semi-Annual Monitoring Well and Domestic Well Sampling Report - July 14, 2006*.
 - June 14, 2006 Sampling event (*see Table*).

- February 2, 2007. MDE-OCP received *Semi-Annual Monitoring Well and Domestic Well Sampling Report – January 26, 2007*.
 - January 15, 2007 Sampling event (*see Table*).

- March 16, 2007. MDE-OCP received the results of spill basin and containment sump testing, performed 2/28/07. All spill basins and containment sumps passed.

- August 16, 2007. MDE-OCP received *Semi-Annual Monitoring Well and Domestic Well Sampling Report – August 14, 2007*.

- July 18, 2007 Sampling event (*see Table*).
- February 11, 2008. MDE-OCP received *Semi-Annual Monitoring Wells and Domestic Well Sampling – February 6, 2008*.
 - January 24, 2008 sampling event (*see Table*).

Future Activities:

- The next sampling event is scheduled for July 2008.

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].

Contacts

- Maryland Department of the Environment (MDE) Oil Control Program: 410-537-3443
- Harford County Health Department (HCHD) at 443-643-0322 or 443-643-0321

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 guilt, involvement in a wrongful act or contribution to environmental damage.

Groundwater Sampling Results for Whiteford High's at 2420 Whiteford Road

Well Information	Sample Dates	Benzene (MCL –5 ppb)	MTBE (Action Level – 20 ppb)	Other petroleum constituents of concern <i>Ethylbenzene – MCL at 700 ppb Toluene – MCL at 1000 ppb Xylene – MCL at 10,000 ppb</i>
Monitoring Wells				
MW-1 HA-94-7031 4 in. diameter well; borehole depth 40 ft. Screen depth 5 to 40 ft; casing depth 0 – 5 ft.	7/15/05	ND	570	---
	12/21/05	ND	4	ND
	6/14/06	ND	18	ND
	1/15/07	ND	160	ND
	7/18/07	ND	300	ND
	1/24/08	1	280	ND
MW-2 HA-94-7032 4 in. diameter well; borehole depth 30 ft. Screen depth 5 to 30 ft; casing depth 0 – 5 ft.	7/15/05	ND	4	ND
	12/21/05	ND	2	---
	6/14/06	ND	ND	ND
	1/15/07	ND	ND	ND
	7/18/07	ND	2	ND
	1/24/08	ND	13	ND
MW-3 HA-94-7033 4 in. diameter well; borehole depth 40 ft. Screen depth 5 to 40 ft; casing depth 0 – 5 ft.	7/15/05	ND	120	---
	12/21/05	ND	58	ND
	6/14/06	ND	ND	ND
	1/15/07	ND	ND	ND
	7/18/07	ND	1	ND
	1/24/08	ND	ND	ND
Tank field Monitoring Pipes				
TF-1 (unknown depth)	7/18/07	ND	91	ND
	1/24/08	ND	2	ND
TF-2 (unknown depth)	7/18/07	ND	21	ND
	1/24/08	ND	8	ND
Transient Non-community Supply well				
High's Station's Supply Well (300 ft.)	6/23/05	ND	ND	ND
	12/21/05	ND	ND	ND
	6/14/07	ND	ND	ND
	1/15/07	ND	ND	ND
	7/18/07	ND	ND	ND
	1/24/08	ND	ND	ND