

**Quarterly Groundwater Monitoring Report**

Prepared for  
**Black & Decker (U.S.) Inc.**

Hampstead, Maryland

January 2008

Prepared by

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## 1. INTRODUCTION

This Groundwater Monitoring Report has been prepared to meet the requirements of Condition IV.G of the Administrative Consent Order between the State of Maryland Department of the Environment (MDE) and Black & Decker (U.S.) Inc. (April 1995) (Consent Order). Specifically, Condition IV.G calls for preparation of a Groundwater Monitoring Report containing the following information for each reporting period:

- The quantities of groundwater pumped, treated, and discharged.
- The calculation of quantities of contaminants removed from groundwater.
- A summary of all sampling analyses.
- An explanation of all operational or other problems encountered, and the manner in which each problem was resolved.
- Copies of all reports submitted to the Department of Natural Resources in conjunction with the Groundwater Appropriations Permit.
- Recommendations for changes to the Interim Groundwater Treatment System.

This document is one of several which are being prepared in response to the Consent Order; each of these documents are to be submitted to the MDE in accordance with the schedule outlined in the Consent Order. This document will become part of the Administrative Record for the site, which is maintained at the Hampstead Public Library.

## **2. SITE CHARACTERISTICS**

### **2.1 HYDRAULIC PROPERTIES**

In accordance with the Consent Order and the Water Appropriation Permit issued to the Black and Decker (U.S.) Inc. Hampstead, Maryland, facility, the following pumping and water level information is included for the period of October through December 2007.

Pumping records showing the total gallons pumped per month of treatment system operation are presented in Table 2-1. The complete groundwater treatment system pumping records are included in Appendix A.

Monthly water levels for wells included in the water level monitoring plan are presented in Table 2-2. For the reporting period of October through December 2007, the extraction wells were pumping at an average combined rate of approximately 163 gallons per minute (gpm).

### **2.2 EFFLUENT CHARACTERISTICS**

Effluent characteristics of the NPDES discharge points are recorded monthly on Discharge Monitoring Reports (DMRs) and are submitted to MDE, Water Management Administration, on a quarterly basis. A summary of the sample results from the DMRs is presented in Table 2-3. DMRs for the period of October through December 2007 are included in Appendix B.

### **2.3 GROUNDWATER QUALITY DATA**

For the reporting period of October through December 2007, approximately 20.4 pounds of total volatile organic compounds (VOCs) were removed from the groundwater by the extraction and treatment system. In general, the total VOCs removed from the groundwater were comprised primarily of trichloroethene (TCE) (80 %) and tetrachloroethene (PCE) (20 %). Analytical results of the groundwater collected from the air stripper for the period of October through December 2007 are included in Appendix C.

A summary of the analytical results from the fourth quarter (November 2007) groundwater sampling round of the extraction and monitor wells is included in Table 2-4. The complete

**Table 2-1**  
**Treatment System Pumping Records - 4th Quarter 2007**  
**Black & Decker**  
**Hampstead, Maryland**

<b>Date</b>	<b>Water Pumped (gallons)</b>
October 2007	7,014,176
November 2007	6,606,981
December 2007	6,587,914

**Table 2-2**  
**Groundwater Elevation Data - 4th Quarter 2007**  
**Black & Decker**  
**Hampstead, Maryland**

WELL NO.	TOC ELEV.	TOTAL DEPTH	10/18/2007		11/19/2007		12/19/2007	
			DTW	ELEV	DTW	ELEV	DTW	ELEV
EW-1	847.21	55	DRY	NA	DRY	NA	DRY	NA
EW-2	849.21	110	79.43	769.78	75.33	773.88	77.42	771.79
EW-3	846.64	118	90.02	756.62	93.41	753.23	92.24	754.40
EW-4	858.01	97.5	NA	NA	NA	NA	NA	NA
EW-5	864.17	98	73.46	790.71	76.50	787.67	79.90	784.27
EW-6	831.98	115	93.61	738.37	101.20	730.78	98.17	733.81
EW-7	818.38	78	49.40	768.98	54.01	764.37	56.65	761.73
EW-8	811.13	98	85.84	725.29	91.45	719.68	90.80	720.33
EW-9	811.35	141	103.90	707.45	101.90	709.45	101.40	709.95
EW-10	807.74	NA	58.20	749.54	61.88	745.86	62.60	745.14
RFW-1A	864.37	78	49.69	814.68	53.15	811.22	53.24	811.13
RFW-1B	864.23	200	49.75	814.48	53.18	811.05	53.28	810.95
RFW-2A	857.41	35	20.02	837.39	20.99	836.42	18.74	838.67
RFW-2B	857.73	75	20.62	837.11	21.66	836.07	19.20	838.53
RFW-3B	839.21	153	35.27	803.94	39.47	799.74	38.94	800.27
RFW-4A	830.37	62	39.97	790.40	39.47	790.90	39.63	790.74
RFW-4B	830.37	120	39.91	790.46	39.10	791.27	39.51	790.86
RFW-5A	817.50	30	DRY	NA	DRY	NA	DRY	NA
RFW-6	785.04	120	6.47	778.57	4.92	780.12	5.41	779.63
RFW-7	805.14	29	8.14	797.00	7.53	797.61	7.87	797.27
RFW-8	860.07	56	DRY	NA	DRY	NA	DRY	NA
RFW-9	862.02	49	29.93	832.09	30.08	831.94	29.94	832.08
RFW-10	852.06	58	DRY	NA	DRY	NA	DRY	NA
RFW-11A	849.32	72	NA	NA	NA	NA	NA	NA
RFW-11B	849.62	116	68.66	780.96	68.82	780.80	69.03	780.59
RFW-12B	844.87	264	50.83	794.04	52.04	792.83	53.41	791.46
RFW-13	849.11	150	61.01	788.10	63.69	785.42	64.11	785.00
RFW-14B	812.39	281	54.94	757.45	55.12	757.27	NA	NA
RFW-16	856.14	41	DRY	NA	DRY	NA	DRY	NA
RFW-17	834.66	60.5	29.13	805.53	29.63	805.03	29.80	804.86
RFW-20	842.49	142	35.37	807.12	38.13	804.36	39.02	803.47
RFW-21	832.65	102	23.90	808.75	24.86	807.79	24.81	807.84
PH-7	805.94	89	37.67	768.27	38.84	767.10	39.12	766.82
PH-9	814.94	98	41.52	773.42	46.27	768.67	46.81	768.13
PH-11	820.68	78	47.72	772.96	47.63	773.05	47.71	772.97
PH-12	828.35	87	49.11	779.24	49.94	778.41	50.03	778.32
B-3	803.02	83	9.53	793.49	9.12	793.90	9.61	793.41
Amoco	842.29	NA	NA	NA	NA	NA	NA	NA
Hamp. Town #22	804.96	NA	19.56	785.40	NA	NA	27.44	777.52
Pembroke #1	NA	NA	18.08	NA	NA	NA	17.85	NA
Pembroke #2	NA	NA	NA	NA	NA	NA	NA	NA
N. Houcks. Rd.	NA	NA	10.78	NA	NA	NA	10.68	NA
E. Century St.	NA	NA	12.87	NA	NA	NA	13.45	NA
Lwr. Beckleys. Rd.	NA	NA	54.51	NA	NA	NA	54.77	NA

NA - Not Available/Not Accessible

**Table 2-3**  
**Effluent Characteristics Summary - 4th Quarter 2007**  
**Black & Decker**  
**Hampstead, Maryland**

Discharge Number	Parameter	Units	Permit Limits	DMR DATE			
				October 2007	November 2007	December 2007	
001	FLOW	average	MGD	NA	0.084	0.151	0.212
		maximum	MGD	NA	0.172	0.238	0.442
	1,1,1-Trichloroethane		ug/l	5	< 1	< 1	< 1
	Tetrachloroethylene		ug/l	5	< 1	< 1	< 1
	Trichloroethylene		ug/l	5	< 1	< 1	< 1
	Total Residual Chlorine		mg/l	< 0.1	< 0.1	< 0.1	< 0.1
	Oil & Grease	maximum	mg/l	15	< 5	< 5	< 5
		quarterly average	mg/l	10	0	0	0.0
	pH	minimum	STD	6.0	6.60	6.40	6.00
		maximum	STD	8.5	8.20	6.70	6.90
	BOD		mg/l	15	4.0	2.0	4.0
TSS	maximum	mg/l	30	11.0	6.0	6.0	
	quarterly average	mg/l	20	11.0	6.0	6.0	
101 (Monitoring Point)	FLOW	average	MGD	NA	0.194	0.200	0.208
		maximum	MGD	NA	0.650	0.429	0.750
	Fecal Coliform		MPN/100ml	200	2.0	1.0	1.0
201 (Monitoring Point)	FLOW	average	MGD	NA	NR	NR	0.220
		maximum	MGD	NA	NR	NR	0.254
	1,1,1-Trichloroethane		ug/l	NA	NR	NR	< 1
	Tetrachloroethylene		ug/l	NA	NR	NR	< 1
	Trichloroethylene		ug/l	NA	NR	NR	< 1

DMR - Discharge Monitoring Report

NA - Not Applicable

NR - Not Reported



**Table 2-4**  
**Summary of Groundwater Analytical Results - November 2007**  
**Black & Decker**  
**Hampstead, Maryland**

PARAMETER	Units	EW-1	EW-2 (2)	EW-3	EW-3 (DUP)	EW-4 (10)	EW-5	EW-6	EW-7	EW-8	EW-9	EW-10
Chloromethane	ug/L	NS	2 U	1 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromomethane	ug/L	NS	2 U	1 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U
Vinyl Chloride	ug/L	NS	2 U	1 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U
Chloroethane	ug/L	NS	2 U	1 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U
Methylene Chloride	ug/L	NS	4 U	2 U	2 U	20 U	2 U	2 U	2 U	2 U	2 U	2 U
Acetone	ug/L	NS	10 U	5 U	5 U	50 U	5 U	5 U	5 U	5 U	5 U	5 U
Carbon Disulfide	ug/L	NS	10 U	5 U	5 U	50 U	5 U	5 U	5 U	5 U	5 U	5 U
1,1-Dichloroethene	ug/L	NS	2 U	1 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethane	ug/L	NS	2 U	1 U	1 U	10 U	1 U	1 U	1 U	1.2	1 U	1 U
1,2-Dichloroethene (total)	ug/L	NS	3	1.8	1.9	10 U	1 U	1 U	7.1	29	1.1	1 U
Chloroform	ug/L	NS	2 U	1 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethane	ug/L	NS	2 U	1 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U
2-Butanone	ug/L	NS	10 U	5 U	5 U	50 U	5 U	5 U	5 U	5 U	5 U	5 U
1,1,1-Trichloroethane	ug/L	NS	2 U	1 U	1 U	10 U	1	1 U	1 U	1 U	1 U	1 U
Carbon Tetrachloride	ug/L	NS	2 U	1 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromodichloromethane	ug/L	NS	2 U	1 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloropropane	ug/L	NS	2 U	1 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U
cis-1,3-Dichloropropene	ug/L	NS	2 U	1 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U
Trichloroethene	ug/L	NS	420	150	130	1200	200	11	5.5	15	1.7	1 U
Dibromochloromethane	ug/L	NS	2 U	1 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2-Trichloroethane	ug/L	NS	2 U	1 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U
Benzene	ug/L	NS	2 U	1 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U
Trans-1,3-Dichloropropene	ug/L	NS	2 U	1 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromoform	ug/L	NS	2 U	1 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U
4-Methyl-2-pentanone	ug/L	NS	10 U	5 U	5 U	50 U	5 U	5 U	5 U	5 U	5 U	5 U
2-Hexanone	ug/L	NS	10 U	5 U	5 U	50 U	5 U	5 U	5 U	5 U	5 U	5 U
Tetrachloroethene	ug/L	NS	67	3.7	3.4	24	7.8	21	11	130	230	6.7
1,1,2,2-Tetrachloroethane	ug/L	NS	2 U	1 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U
Toluene	ug/L	NS	2 U	1 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U
Chlorobenzene	ug/L	NS	2 U	1 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U
Ethylbenzene	ug/L	NS	2 U	1 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U
Styrene	ug/L	NS	2 U	1 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U
Xylene (total)	ug/L	NS	2 U	1 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U

Notes: U = Compound was analyzed for but not detected. Value shown is the method detection limit for quantification.  
J = Indicates an estimated value.

**Table 2-4**  
**Summary of Groundwater Analytical Results - November 2007**  
**Black & Decker**  
**Hampstead, Maryland**

PARAMETER	Units	RFW-1A	RFW-1B	RFW-2A	RFW-2B	RFW-3B	RFW-4A	RFW-4B	RFW-4B (DUP)	RFW-5A	RFW-6	RFW-7	RFW-8	RFW-9	RFW-10
Chloromethane	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NS	1 U	1 U	NS	1 U	NS
Bromomethane	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NS	1 U	1 U	NS	1 U	NS
Vinyl Chloride	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NS	1 U	1 U	NS	1 U	NS
Chloroethane	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NS	1 U	1 U	NS	1 U	NS
Methylene Chloride	ug/L	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	NS	2 U	2 U	NS	2 U	NS
Acetone	ug/L	5 U	5.4	5 U	5 U	5 U	5 U	5 U	5 U	NS	5 U	5 U	NS	5 U	NS
Carbon Disulfide	ug/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	NS	5 U	5 U	NS	5 U	NS
1,1-Dichloroethene	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NS	1 U	1 U	NS	1.1	NS
1,1-Dichloroethane	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NS	1 U	1 U	NS	1 U	NS
1,2-Dichloroethene (total)	ug/L	1 U	1 U	1 U	1 U	4.8	1.1	2.5	2.7	NS	1.1	1 U	NS	2.9	NS
Chloroform	ug/L	1 U	1 U	1 U	1 U	1 U	1.2	1.5	1.6	NS	1 U	1 U	NS	1 U	NS
1,2-Dichloroethane	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NS	1 U	1 U	NS	1 U	NS
2-Butanone	ug/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	NS	5 U	5 U	NS	5 U	NS
1,1,1-Trichloroethane	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NS	1 U	1 U	NS	1	NS
Carbon Tetrachloride	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NS	1 U	1 U	NS	1 U	NS
Bromodichloromethane	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NS	1 U	1 U	NS	1 U	NS
1,2-Dichloropropane	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NS	1 U	1 U	NS	1 U	NS
cis-1,3-Dichloropropene	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NS	1 U	1 U	NS	1 U	NS
Trichloroethene	ug/L	1 U	1 U	1 J	1 U	2.7	36	48	51	NS	5.7	3.2	NS	14	NS
Dibromochloromethane	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NS	1 U	1 U	NS	1 U	NS
1,1,2-Trichloroethane	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NS	1 U	1 U	NS	1 U	NS
Benzene	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NS	1 U	1 U	NS	1 U	NS
Trans-1,3-Dichloropropene	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NS	1 U	1 U	NS	1 U	NS
Bromoform	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NS	1 U	1 U	NS	1 U	NS
4-Methyl-2-pentanone	ug/L	5 U	5 U	5 U	1 U	5 U	5 U	5 U	5 U	NS	5 U	5 U	NS	5 U	NS
2-Hexanone	ug/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	NS	5 U	5 U	NS	5 U	NS
Tetrachloroethene	ug/L	1 U	1 U	1 U	1 U	2.9	33	71	77	NS	4.6	1 U	NS	1.5	NS
1,1,2,2-Tetrachloroethane	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NS	1 U	1 U	NS	1 U	NS
Toluene	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NS	1 U	1 U	NS	1 U	NS
Chlorobenzene	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NS	1 U	1 U	NS	1 U	NS
Ethylbenzene	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NS	1 U	1 U	NS	1 U	NS
Styrene	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NS	1 U	1 U	NS	1 U	NS
Xylene (total)	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NS	1 U	1 U	NS	1 U	NS

Notes: DUP = Duplicate sample  
NS = Not sampled

U = Compound was analyzed for but not detected. Value shown is the method detection limit for quantification.  
J = Indicates an estimated value.

Table 2-4  
 Summary of Groundwater Analytical Results - November 2007  
 Black & Decker  
 Hampstead, Maryland

PARAMETER	Units	RFW-11A	RFW-11B	RFW-12B	RFW-13	RFW-16	RFW-17	Leister Dairy	Leister Res. #1	Leister Res. #2	Trip Blank	RFW-20	RFW-21	Town #22	Town #23	Trip Blank
				(5)								USEPA drinking water method 524.2				
Chloromethane	ug/L	NS	1 U	5 U	1 U	NS	1 U	1 U	1 U	NS	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromomethane	ug/L	NS	1 U	5 U	1 U	NS	1 U	1 U	1 U	NS	1 U	1 U	1 U	1 U	1 U	1 U
Vinyl Chloride	ug/L	NS	1 U	5 U	1 U	NS	1 U	1 U	1 U	NS	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroethane	ug/L	NS	1 U	5 U	1 U	NS	1 U	1 U	1 U	NS	1 U	1 U	1 U	1 U	1 U	1 U
Methylene Chloride	ug/L	NS	2 U	10 U	2 U	NS	2 U	2 U	2 U	NS	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Acetone	ug/L	NS	5 U	25 U	5 U	NS	5 U	5 U	5 U	NS	5 U	10 U	10 U	10 U	4.9 J	10 U
Carbon Disulfide	ug/L	NS	5 U	25 U	5 U	NS	5 U	5 U	5 U	NS	5 U	NA	NA	NA	NA	NA
1,1-Dichloroethene	ug/L	NS	1 U	5 U	1 U	NS	1 U	1 U	1 U	NS	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloroethane	ug/L	NS	1 U	5 U	1 U	NS	1 U	1 U	1 U	NS	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloroethene (total)	ug/L	NS	1 U	3.6 J	1 U	NS	1 U	1 U	1 U	NS	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroform	ug/L	NS	1 U	5 U	1 U	NS	1 U	1 U	1 U	NS	1 U	0.5 U	0.5 U	0.5 U	8.7	0.5 U
1,2-Dichloroethane	ug/L	NS	1 U	5 U	1 U	NS	1 U	1 U	1 U	NS	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2-Butanone	ug/L	NS	5 U	25 U	5 U	NS	5 U	5 U	5 U	NS	5 U	10 U	10 U	10 U	10 U	10 U
1,1,1-Trichloroethane	ug/L	NS	1 U	5 U	1 U	NS	1 U	1 U	1 U	NS	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Carbon Tetrachloride	ug/L	NS	1 U	5 U	1 U	NS	1 U	1 U	1 U	NS	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromodichloromethane	ug/L	NS	1 U	5 U	1 U	NS	1 U	1 U	1 U	NS	1 U	0.5 U	0.5 U	0.5 U	10	0.5 U
1,2-Dichloropropane	ug/L	NS	1 U	5 U	1 U	NS	1 U	1 U	1 U	NS	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
cis-1,3-Dichloropropene	ug/L	NS	1 U	5 U	1 U	NS	1 U	1 U	1 U	NS	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Trichloroethene	ug/L	NS	15	540	11	NS	1 U	1 U	1 U	NS	1 U	1	0.5 U	0.5 U	0.5 U	0.5 U
Dibromochloromethane	ug/L	NS	1 U	5 U	1 U	NS	1 U	1 U	1 U	NS	1 U	0.5 U	0.5 U	0.5 U	8.3	0.5 U
1,1,2-Trichloroethane	ug/L	NS	1 U	5 U	1 U	NS	1 U	1 U	1 U	NS	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Benzene	ug/L	NS	1 U	5 U	1 U	NS	1 U	1 U	1 U	NS	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Trans-1,3-Dichloropropene	ug/L	NS	1 U	5 U	1 U	NS	1 U	1 U	1 U	NS	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromoform	ug/L	NS	1 U	5 U	1 U	NS	1 U	1 U	1 U	NS	1 U	0.5 U	0.5 U	0.5 U	1.5	0.5 U
4-Methyl-2-pentanone	ug/L	NS	5 U	25 U	5 U	NS	5 U	5 U	5 U	NS	5 U	10 U	10 U	10 U	10 U	10 U
2-Hexanone	ug/L	NS	5 U	25 U	5 U	NS	5 U	5 U	5 U	NS	5 U	10 U	10 U	10 U	10 U	10 U
Tetrachloroethene	ug/L	NS	1 U	49	37	NS	1 U	1 U	1 U	NS	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2,2-Tetrachloroethane	ug/L	NS	1 U	5 U	1 U	NS	1 U	1 U	1 U	NS	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Toluene	ug/L	NS	1 U	5 U	1 U	NS	1 U	1 U	1 U	NS	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chlorobenzene	ug/L	NS	1 U	5 U	1 U	NS	1 U	1 U	1 U	NS	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Ethylbenzene	ug/L	NS	1 U	5 U	1 U	NS	1 U	1 U	1 U	NS	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Styrene	ug/L	NS	1 U	5 U	1 U	NS	1 U	1 U	1 U	NS	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Xylene (total)	ug/L	NS	1 U	5 U	1 U	NS	1 U	1 U	1 U	NS	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

Notes: Samples from wells RFW-20 & 21, Town-22&23 are analyzed with the USEPA drinking water method 524.2 at the request of the MDE Source Protection and Appropriation Division. Samples from all of the other wells are analyzed with USEPA Method 8260.

NS = Not sampled

U = Compound was analyzed but not detected.

analytical data package is included in Appendix D.

As found in earlier sampling events at the Black & Decker facility, TCE and PCE were the VOCs detected at the highest concentrations in the groundwater samples. The highest concentration of TCE was detected in the groundwater samples collected from wells RFW-12B and EW-4 and the highest concentration of PCE was detected in the groundwater sample collected from wells RFW-4B and EW-9. The remainder of VOCs present were detected at levels below the Federal Maximum Contaminant Levels (MCL).

### **3. OPERATION AND MAINTENANCE OF THE TREATMENT SYSTEM**

A summary of the maintenance activities which were undertaken with the extraction and treatment system during the reporting period (October through December 2007) is provided in Table 3-1. This table is comprehensive in summarizing significant maintenance events or activities, while not including those activities considered unworthy of note (such as replacement of light bulbs, lubrication of moving parts as appropriate or other routine activities).

**Table 3-1**  
**Treatment System Maintenance Activities - 4th Quarter 2007**  
**Black & Decker**  
**Hampstead, Maryland**

Date	Event/Corrective Action
Oct-07	Alarm at air stripper. EW-2 had a bad timer relay and control relay. Both were replaced and EW-2 is back online.
Oct-07	EW-2 off for 4 days due to a bad control contactor. The control contactor was replaced and the well is back online.
Oct-07	Alarm at the air stripper. Due to high pressure in the high column. Adjustments were made to the pressure and the system is back online
Oct-07	Short power outage. The system was reset and is back online.
Dec-07	Alarm at stripper. EW-10 tripped off due to 115 volt power breaker turned off in the old boiler room causing the heater in the well house to be turned off. The breaker was turned back on. EW-10 is back online.
Dec-07	Alarm at stripper. High column blower failure. Found ice on the intake of the blower. The system was reset and the blower is back online.

#### 4. RECOMMENDATIONS

For the reporting period of October through December 2007, the treatment system continued to create a hydraulic boundary preventing off-site migration of groundwater. The extraction system will continue to operate as currently configured to pump and treat contaminated groundwater. Depth-to-water measurements will continue to be collected on a monthly basis in all site monitor wells to construct a groundwater elevation contour map for the site. The groundwater elevation contour map will be used to verify that the required area of groundwater capture is being maintained. If necessary, pumping rates will be adjusted to maintain groundwater capture due to seasonal fluctuations in groundwater elevations. The treatment system will also continue to operate as currently configured, as data collected have proven that the treatment system is fully effective in removing VOCs from the extracted groundwater.

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**APPENDIX A**  
**GROUNDWATER TREATMENT SYSTEM PUMPING RECORDS**  
**(OCTOBER - DECEMBER 2007)**

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MARYLAND DEPARTMENT of the ENVIRONMENT, WATER MANAGEMENT ADMINISTRATION, 1800 WASHINGTON BLVD, BALTIMORE, MD 21230

Operator Justin Myers, ESS Certification # 8406

**Black & Decker WTP**

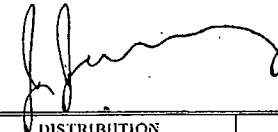
PWSID # 106-0004

County: Carroll

Month: OCTOBER

Operated by  
Maryland Environmental Service

Address: BTR CAPITAL GROUP, Hampstead, MD 21073  
625 Hanover Pike, Hampstead, Carroll County, Maryland



Year: 2007

GENERAL (DOMESTIC WATER)				CHEMICAL							MONITORING				DISTRIBUTION			RAW WATER		Comments
Date	Day	Weather	Flow meter reading o	MGD Total FQIR	pH P.O.E	Free Cl <sub>2</sub>	Na <sub>2</sub> CO <sub>3</sub> Level	Na <sub>2</sub> CO <sub>3</sub> (gpd)	NaOCl Level	NaOCl (gpd)	VOC'S (ppb)	Bacti Pos/Neg	pH su	TRC mg/l	DISTRIBUTION LOCATION	Operator Initials	pH su	TOTAL RAW WATER WELL (mgd)		
1	mon	clr	0	0.0082	7.9	1.32	37.00	3.00	60.00	0.00			6.90	0.80	Loading Dock	ss		0.215257	Oct	
2	tue	clr	0	0.0082	7.0	1.33	34.00	2.00	60.00	0.00						ss		0.198289		
3	wed	cldy	0	0.0071	6.9	1.59	32.00	3.00	60.00	0.00			6.80	1.40	Eng Lab	dj	5.00	0.219369		
4	thur	clr	0	0.0062	7.0	1.58	29.00	2.00	60.00	0.00						dj		0.234430		
5	fri	cldy	0	0.0026	7.1	1.51	27.00	1.00	60.00	0.00			7.0	1.40	Admin 1st FL	dj		0.235252		
6	sat	cldy	0	0.0024	7.0	1.10	46.00	1.00	60.00	0.00						ss		0.223800		
7	sun	clr	0	0.0051	7.1	0.74	45.00	1.00	60.00	0.00						ss		0.229700		
8	mon	clr	0	0.0054	6.9	1.26	44.00	1.00	60.00	0.00			7.0	1.00	Eng Lab	dj		0.229174		
9	tue	clr	0	0.0059	6.8	1.23	43.00	2.00	60.00	0.00						dj		0.227553		
10	wed	clr	0	0.0079	6.8	1.18	41.00	2.00	60.00	0.00			6.8	0.90	Loading Dock	dj	5.20	0.232984		
11	thur	cldy	0	0.0056	6.7	1.16	39.00	2.00	60.00	0.00						dj		0.235168		
12	fri	clr	0	0.0086	6.7	1.12	37.00	3.00	60.00	0.00			6.7	1.00	Admin 1st FL	dj		0.234271		
13	sat	clr	0	0.0024	7.6	1.15	34.00	1.00	60.00	0.00						bc		0.221260		
14	sun	clr	0	0.0029	8.1	1.06	33.00	1.00	60.00	0.00						bc		0.210866		
15	mon	clr	0	0.0054	7.2	1.14	32.00	1.00	60.00	0.00			6.9	0.90	Eng Lab	dj		0.222135		
16	tue	clr	0	0.0082	6.9	1.16	31.00	3.00	60.00	0.00						dj		0.228931		
17	wed	clr	0	0.0057	7.0	1.13	28.00	2.00	60.00	0.00			6.8	0.80	Loading Dock	dj	5.30	0.228920		
18	thur	clr	0	0.0054	6.8	1.15	26.00	2.00	60.00	0.00						dj		0.238736		
19	fri	rain	0	0.0051	6.8	1.09	44.00	1.00	60.00	0.00			6.9	0.70	Admin 1st FL	dj		0.210518		
20	sat	clr	0	0.0000	6.7	1.15	43.00	0.00	60.00	0.00						dj		0.253850		
21	sun	clr	0	0.0052	6.9	1.08	43.00	2.00	60.00	0.00						dj		0.239453		
22	mon	clr	0	0.0056	7.0	1.08	41.00	2.00	60.00	0.00			7.4	0.70	Loading Dock	ss		0.228237		
23	tue	cldy	0	0.0053	7.1	0.99	39.00	2.00	60.00	0.00						ss		0.220140		
24	wed	rain	0	0.0065	6.9	1.25	37.00	1.00	60.00	0.00			6.8	1.00	Eng Lab	dj	5.10	0.208420		
25	thur	rain	0	0.0067	7.0	1.46	36.00	2.00	60.00	0.00						dj		0.226792		
26	fri	clr	0	0.0041	6.9	1.42	34.00	2.00	60.00	0.00			6.9	1.10	Admin 1st FL	dj		0.246092		
27	sat	cldy	0	0.0014	7.0	1.32	32.00	1.00	60.00	0.00						ss		0.222100		
28	sun	clr	0	0.0041	7.0	1.30	31.00	1.00	60.00	0.00						ss		0.215039		
29	mon	clr	0	0.0074	7.2	1.37	30.00	2.00	60.00	0.00			7.1	1.30	Eng Lab	dj		0.231104		
30	tue	clr	0	0.0067	7.1	1.45	28.00	2.00	60.00	0.00						dj		0.243802		
31	wed	clr	0	0.0050	7.0	1.36	26.00	2.00	60.00	0.00			6.9	1.40	Loading Dock	dj	5.30	0.202534		
Total				0.1663	218.1	38.23	1102.0	53.00	1860.0	0.00	0.0	0.0	96.9	14					7.014176	
Average				0.0054	7.04	1.23	35.55	1.71	60.00	0.00	0.0	0.0	6.92	1.03					0.226264	
Minimum				0.0000	6.70	0.74	26.00	0.00	60.00	0.00	0.0	0.0	6.70	0.70					0.198289	MOR
Maximum				0.0086	8.10	1.59	46.00	3.00	60.00	0.00	0.0	0.0	7.40	1.40					0.253850	04/09/07