
Baltimore Inner Harbor Environmental Media Monitoring Plan Quarterly Report No. 92 Third Quarter 2012

Prepared for

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Acronyms and Abbreviations

EMMP	Environmental Media Monitoring Plan
EPA	U.S. Environmental Protection Agency
MDE	Maryland Department of the Environment
MES	Maryland Environmental Services
ppb	parts per billion
Site	Honeywell Baltimore Inner Harbor Site
SSMP	Surface Soil Monitoring Plan

Introduction

1.1 Purpose

This document represents the partial fulfillment of the Consent Decree entered into by Honeywell (formerly AlliedSignal, Inc.), the U.S. Environmental Protection Agency (EPA), and the Maryland Department of the Environment (MDE) on September 29, 1989. Specifically, this document satisfies Section V.3 of the Consent Decree, Exhibit 4 (RCRA Correction Action Plan Task XV.A.9). This section requires that a progress report be submitted every calendar quarter during the life of the Consent Decree. This report provides the data required by the Environmental Media Monitoring Program, as set forth in the Environmental Media Monitoring Plan (EMMP) and the Surface Soil Monitoring Plan (SSMP), as submitted to MDE and EPA.

This report summarizes the data collected during third quarter 2012.

1.2 Scope of Work

The scope of work outlined in the EMMP covers sampling and analysis of environmental media before, during, and after dismantlement of the former plant, and the completion of the corrective measures implementation activities at the Honeywell Baltimore Inner Harbor Site (Site). The environmental media sampled as part of the EMMP are air, surface water, groundwater, and sediment.

The scope of work outlined in the SSMP covers sampling and analysis of environmental media after completion of Corrective Measures Implementation activities at the Site. The only environmental medium sampled as part of the SSMP is the drainage layer effluent.

Media are sampled on varying frequencies as required by the EMMP and the SSMP (quarterly, twice annually, annually, and every 3 years). Only data for the media sampled during each quarter are reported in the associated quarterly report.

1.3 Sampling Conducted this Quarter

Surface water samples were collected during third quarter 2012, as well as during second quarter 2012. Appendix A provides data associated with sampling during the second quarter; results for the third quarter will be provided in the fourth quarter report. The surface water sample results for second quarter 2012 were validated by Critigen, and the validation report for this event is provided in Appendix B. All data quality objectives were met for surface water samples collected during second quarter 2012.

1.4 Progress Report Organization

Progress reports prepared in accordance with the Consent Decree are organized by medium. The media section included in this document provides a summary of methodology, the current quarter's sampling plan, and a summary of results. Also provided in the medium section are a discussion of the sampling event; explanations for any deviations from the EMMP or SSMP procedures; data summaries; and discussion of the data, quality control results, and pertinent data trends. Raw data and chain-of-custody records are provided in Appendix A.

This progress report describes the surface water monitoring performed during third quarter 2012. Drainage layer effluent, groundwater, sediment, and air monitoring were not performed during the quarter.

Surface Water Monitoring

2.1 Methodology

The surface water monitoring program provides information about surface water quality around the perimeter of the Site, at 18 predetermined stations, and at 2 stations upstream from the Site. Samples are collected at each station during each quarter and analyzed for total dissolved chromium.

Sampling is conducted within 1 hour of low tide and close to the predetermined sampling locations. The pH, temperature, specific conductance, and depth to the river bottom are measured before each sample is collected. A decontaminated Kemmerer sampler is used to collect the samples, which are placed in 500-milliliter plastic bottles. Two samples are collected – the first 1 foot below the water surface and the second 1 foot above the river bottom – at all locations except Station 20, where the water depth may be at or below 1 foot. When this is the case, only one sample is collected at Station 20. A mid-depth sample is required from sampling locations where the depth is more than 10 feet. The lateral placement of each sample location is about 5 feet from the bulkhead/shoreline. Laboratory sampling personnel record measurements and observations on sampling sheets, which are presented in Appendix A.

Surface water sample containers are placed on ice as soon as samples are collected. Field duplicate samples, field blanks, and rinsate blanks are also collected. At the end of the sample round, the samples are filtered and preserved. The samples are then transferred to the laboratory using documented chain-of-custody procedures and a dedicated courier. The samples are analyzed for total dissolved chromium using EPA SW-846 Method 6010B.

The results received from the laboratory are entered into a database in which data for each month are tabulated. When duplicate samples for a given station are taken, the average of the concentrations is used for that station. The analytical results, chain-of-custody documentation, and field sampling reports are presented in Appendix A.

2.2 Current Quarter Results

Surface water sampling for the second and third quarters of 2012 was performed by Maryland Environmental Services (MES) at all 20 sampling locations on May 4, 2012, and during the surface water sampling event on August 27, 2012. Results for the surface water samples collected by on May 4, 2012, are included in this report. Results of the analysis of the surface water samples collected on August 27, 2012, will be reported in fourth quarter 2012 report. All of the collected samples were transported to Lancaster Laboratories in Lancaster, Pennsylvania, for total dissolved chromium analysis.

Surface water samples were collected from all 20 sampling locations on May 4, 2012, and on August 27, 2012. The surface water sampling locations are shown on Figure 2-1 (at the end of this section). Summaries of the surface water data and average concentrations for May 2012, including individual sample detection limits and validated data qualifiers, are presented in Table 2-1.

2.3 Data Review

The surface water monitoring program is intended to provide information on surface water quality in the immediate vicinity of the waterside perimeter of the Site. This information is used to assess the performance of the corrective measures.

The Consent Decree, Section V, Part 12, establishes the Surface Water Performance Standard: “The surface water performance standard [...] for total chromium shall be 50 parts per billion (ppb), calculated for each sample location by arithmetically averaging the samples taken at all depths over 4 consecutive days.” In October 2002, the sample frequency was amended to be 1 day of sampling at each sampling location per quarter.

In addition, the EMMP states that Honeywell will review analytical data for results greater than 11-ppb of dissolved hexavalent chromium. The 11-ppb reporting level is based on the following:

- Code of Maryland Regulation 26.08.02.03-1B, which states that the numerical toxic substance criteria for freshwater shall be applied to the surface water near the Site
- National Recommended Water Quality Criteria Correction EPA 822-Z-99-001 (April 1999), which states that the chronic exposure level for dissolved hexavalent chromium in freshwater is 11 ppb

Total dissolved chromium concentrations in surface water reported for third quarter 2012 (second quarter 2012 results) are similar to the analytical values reported in second quarter 2012 (first quarter 2012 results). The percentages of actual or average surface water results meeting specific criteria (performance standard, chronic freshwater exposure, and detection limit) are listed in Table 2-1. Results of analyses for total dissolved chromium from each sampling location and each depth are presented in Table 2-2. The average analytical result from each sampling location is presented in Table 2-3.

Table 2-1
Percent of Average or Actual Surface Water Results Below Specific Criteria

Sample Event	<u>Performance Standard</u> Actual Concentration < 50 ppb	<u>Fresh Water Chronic Exposure Level</u> Actual Concentration <11 ppb	Analytical Detection Limit† Actual Concentration <10 ppb	Method Detection Limit† Actual Concentration <1.1 ppb
May	100%	100%	100%	80%

† The Analytical Detection Limit as determined by the Laboratory QC is ppb

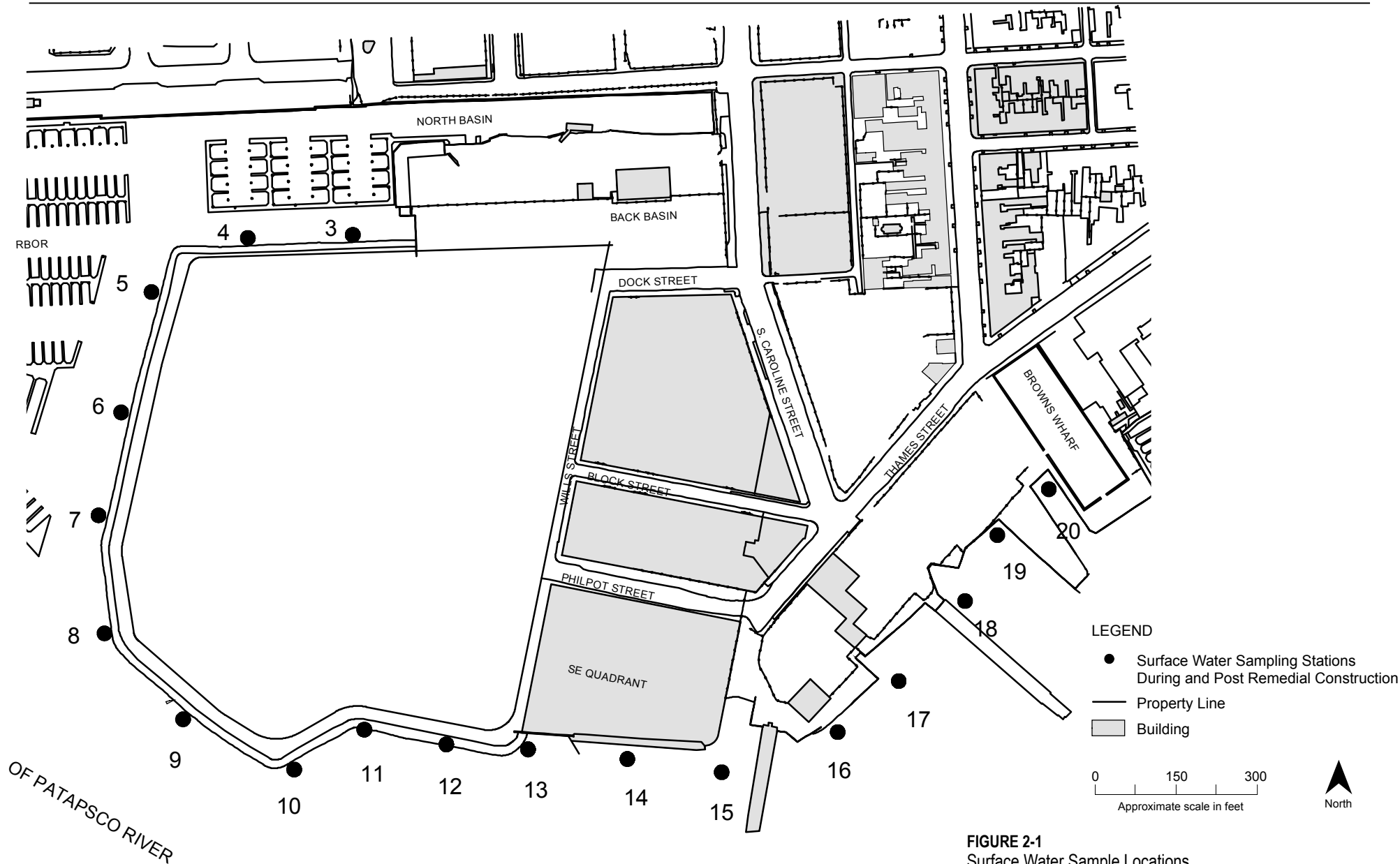


FIGURE 2-1
 Surface Water Sample Locations
 Environmental Media Monitoring

Table 2-2
Surface Water Sampling Data per Location
May 2012

Station Number	Detection Limit	Total Dissolved Chromium (mg/L)
		5/3/2012
3B	0.01	0.005 U
3T	0.01	0.005 U
4B	0.01	0.005 U *
4T	0.01	0.005 U *
5B	0.01	0.005 U
5T	0.01	0.005 U
6B	0.01	0.005 U
6T	0.01	0.005 U
7B	0.01	0.005 U
7T	0.01	0.005 U
8B	0.01	0.005 U
8T	0.01	0.005 U
9B	0.01	0.005 U
9T	0.01	0.005 U
10B	0.01	0.001 J *
10T	0.01	0.005 U *
11B	0.01	0.005 U
11T	0.01	0.005 U
12B	0.01	0.005 U
12T	0.01	0.005 U
13B	0.01	0.005 U
13T	0.01	0.005 U
14B	0.01	0.005 U
14T	0.01	0.005 U
15B	0.01	0.005 U
15T	0.01	0.005 U
16B	0.01	0.001 J
16M	0.01	0.001 J
16T	0.01	0.002 J
17B	0.01	0.002 J
17T	0.01	0.002 J
18B	0.01	0.005 U
18M	0.01	0.005 U
18T	0.01	0.002 J
19B	0.01	0.005 U
19T	0.01	0.005 U
20B	0.01	0.005 U
20T	0.01	0.005 U
Cent B	0.01	0.005 U
Cent T	0.01	0.005 U
LADY B	0.01	0.005 U
LADY T	0.01	0.005 U

NOTES

- T - Sample collected 1 foot below the surface (TOP)
- M - Sample collected from the measured middle of the TOP and BOTTOM measurements (MIDDLE)
- B - Sample collected 1 foot from the bottom (BOTTOM)
- * - Average of the sample and its Field Duplicate
- J - Results was reported below the Report Detection Limit
- U - Result below the Method Detection Limit

Table 2-3
 Surface Water Sampling Data per Sampling Station
 May 2012

Station Number	Total Dissolved Chromium (mg/L)
	5/3/2012 Station Average of All Depths
3	0.005
4	0.005
5	0.005
6	0.005
7	0.005
8	0.005
9	0.005
10	0.002
11	0.005
12	0.005
13	0.005
14	0.005
15	0.005
16	0.001
17	0.002
18	0.004
19	0.005
20	0.005
Cent	0.005
Lady	0.005