

Weekly Air Monitoring Summary

Client: Jersey City Redevelopment Authority

Location: Morris Canal Chromium Sites 121 & 207

Berry Lane Park - Jersey City, NJ

Period: November 12 through November 17, 2012

This weekly air monitoring summary report includes both tabular information and written discussions summarizing the ambient air-quality data collected in accordance with the Air Monitoring Plan for the above referenced project and reporting period. The following information is provided in the data summary:

- **Table 1:** Site Specific Alarm Levels;
- **Table 2:** Weekly Real-time PM₁₀ Data Summary;
- **Table 3:** Weekly Elevated Readings Summary for PM₁₀;
- **Table 4:** Program-to-Date Average Concentrations for Time Integrated Hexavalent Chromium, Time Integrated Total Dust, and Real-time PM₁₀;
- **Figure 1:** Meteorological data; and
- **Figure 2:** Daily/Weekly Site Map(s).

This report covers the real-time air monitoring from Monday, November 12 through Saturday, November 17, 2012 at the Berry Lane Park Site (Site). Real-time air monitoring is divided into three types of monitoring including; fenceline air monitoring (at the Site boundaries), exclusion zone monitoring (at the perimeter of the exclusion zone), and meteorological monitoring (at multiple fenceline stations). Each monitoring type is described in more detail in the following sections.

Fenceline air monitoring includes five Fixed Air Monitoring (FAM) stations.

Fenceline air monitoring includes the following:

- Real-time 15-minute average PM₁₀ readings at each of the five fenceline locations. (All FAM stations operate 8 -10 hours during remedial activities, Monday through Friday);
- Time integrated 8 - 10 hour Total Dust and Hexavalent Chromium laboratory sampling at three of the FAM stations (FAM stations 1, 3, and 5 – see Figure 2); and
- Time integrated 24-hour Total Dust and Hexavalent Chromium laboratory sampling at two of the FAM stations (FAM stations 2 and 4 – see Figure 2).

Exclusion Zone air monitoring includes the following:

- Real-time 15-minute average PM₁₀ readings at each of the four exclusion zone locations (PAM stations operate 8-10 hours during remedial activities, Monday through Friday).
- Time integrated 8-hour Total Dust and Hexavalent Chromium laboratory samples at each of the four exclusion zone locations;

Meteorological measurements of 15-minute average wind speed, relative humidity, and temperature are recorded onsite at a central location.

Summary of Real-Time Air Monitoring Results for PM₁₀

During the period of November 12 through November 17, 2012, there was one elevated 15 minute Time Weighted Average (TWA) PM₁₀ reading above the Site action level. The Site action was exceeded due to the upwind location of the diesel power plant associated with the vibratory hammer used to install sheet piles. PAM 2 was located downwind once the winds had shifted. The station was relocated after the action level exceedence to avoid further diesel emissions. The maximum 15 minute TWA PM₁₀ readings at the fenceline and exclusion zone are shown in Table 2. Elevated readings above the Site alarm levels are presented in Table 3, if applicable. On Saturday the 17th, a small crew completed some earth work at the southern end of the site. FAM 3 & 5 and PAM 2 & 3 were in operation during this localized work.

Summary of the Program-to-Date Integrated Sampling and Continuous Air Monitoring Results

Time integrated sampling results for Total Dust and Hexavalent Chromium (Cr6) are updated every week. The program-to-date average concentrations for the 8-hour integrated Cr6 and Total Dust are shown in Table 4. The program-to-date average real-time PM₁₀ TWA readings are also shown in Table 4 for the same period.

Summary of Meteorological Monitoring

The time series plots of wind speed, temperature, and relative humidity for the report period are shown in **Figure 1**.

Summary of the Air Monitoring Locations

A summary of the air monitoring locations during the report period are shown in **Figure 2**.

Table 1: Site Specific Action Levels

Alarm Levels	Alert Level (15 minute TWA)	Action Level (15 minute TWA)
PM ₁₀	250 µg/m ³	333 µg/m ³

Table 2: Weekly Real-Time PM₁₀ Data Summary (11/12/12 – 11/17/12)

Date	<i>Fenceline Maximum 15-Minute PM₁₀ TWA (Action Level = 333 µg/m³)</i>					<i>Exclusion Zone Maximum 15-Minute PM₁₀ TWA (Action Level = 333 µg/m³)</i>			
	FAM 1	FAM 2	FAM 3	FAM 4	FAM 5	PAM 1	PAM 2	PAM 3	PAM 4
Mon 11/12/12	41.6	30.6	80.9	155.5	33.2	101.9	156.3	67.2	206.0
Tue 11/13/12	11.6	11.7	12.3	8.5	19.0	57.2	95.2	29.3	60.5
Wed 11/14/12	10.9	24.6	12.6	23.0	67.9	81.9	91.0	39.3	50.5
Thu 11/15/12	17.1	23.7	35.8	23.3	10.2	97.1	305.7	33.1	58.9
Fri 11/16/12	77.4	38.8	60.7	48.2	18.8	126.3	570.4	56.0	113.1
Sat 11/17/12	NA	NA	74.6	NA	36.5	NA	204.6	98.5	NA
Weekly Statistics									
Weekly Maximum	77.4	38.8	80.9	155.5	67.9	126.3	570.4	98.5	206.0
Weekly Average	10.6	18.6	17.5	17.3	10.9	56.2	118.1	31.2	56.8
<p>FAM = Fixed Air Monitoring Station PAM = Portable Air Monitoring Station PM₁₀ = Respirable Particulate Matter (µg/m³) µg/m³ = Micrograms per cubic meter NA = Not Applicable ND = No Data</p> <p>- Highlighted concentrations require further analysis based on Site and off Site activities (see the elevated concentration summary report). - FAM and PAM reported PM₁₀ readings at the fenceline and at the perimeter of the exclusion zone represent 15-minute block averages.</p>									

Table 3: Weekly Elevated Readings Report (11/12/12 – 11/17/12)

Parameter	Date	Time	Location	Wind Conditions	Elevated Concentration	Explanation
<i>Fenceline Air Monitoring (15-Minute Average Readings)</i>						
NA	NA	NA	NA	NA	NA	NA
<i>Exclusion Zone Air Monitoring (15-Minute Average Readings)</i>						
Dust	11.16.12	0801	PAM 2	NNW	570.4	Station upwind of excavation. Diesel power pack associated with vibratory hammer located upwind of station blowing diesel emissions toward station.
<p>* 15 minute TWA reading above the site Alert Level. * 15 minute TWA reading above the site Action Level</p> <p>FAM = Fixed Air Monitoring Station PAM = Portable Air Monitoring Station PM₁₀ = Respirable Particulate Matter measured in micrograms per cubic meter (µg/m³) NA = Not Applicable ND = No Data</p> <p>- FAM reported PM₁₀ readings represent 15-minute block averages at the fenceline. - PAM reported PM₁₀ readings represent 15-minute block averages at the exclusion zone.</p>						

Table 4: Program-to-Date Average Concentrations (11/12/12 – 11/17/12)

	Fenceline Air Sampling Stations					Exclusion Zone Air Sampling Stations			
Program-to-Date Averages	FAM 1	FAM 2	FAM 3	FAM 4	FAM 5	PAM 1	PAM 2	PAM 3	PAM 4
Cr6 Concentration (ng/m ³)	8.9	4.6	8.3	4.3	9.7	9.4	8.3	8.9	8.8
Total Dust Concentration (µg/m ³)	69.6	45.7	46.2	47.4	49.2	74.3	54.0	66.8	61.5
Real-Time PM ₁₀ TWA (µg/m ³)	21.7	26.4	18.6	22.7	18.3	54.1	62.7	48.9	62.7

FAM = Fixed Air Monitoring Station

PAM = Portable Air Monitoring Station

Cr6 = Hexavalent Chromium measured in nanograms per cubic meter (ng/m³)

PM₁₀ = Respirable Particulate Matter measured in micrograms per cubic meter (µg/m³)

NA = Not Applicable

ND = No Data

- FAM/PAM Total Dust and Cr6 results represent time integrated 8-hour concentrations at the perimeter and exclusion zone. Results of the integrated laboratory analysis lag the real time results because of standard laboratory analysis periods (5 days).
- FAM/PAM Real-time PM₁₀ readings represent 15-minute block averages at the fenceline and exclusion zone, respectively.
- Baseline monitoring conducted between July 12 through 16, 2012. Baseline concentrations for Cr6, Total Dust, and PM₁₀ not included in table.

Figure 1: Meteorological Monitoring Results Summary (11/12/12 – 11/17/12)

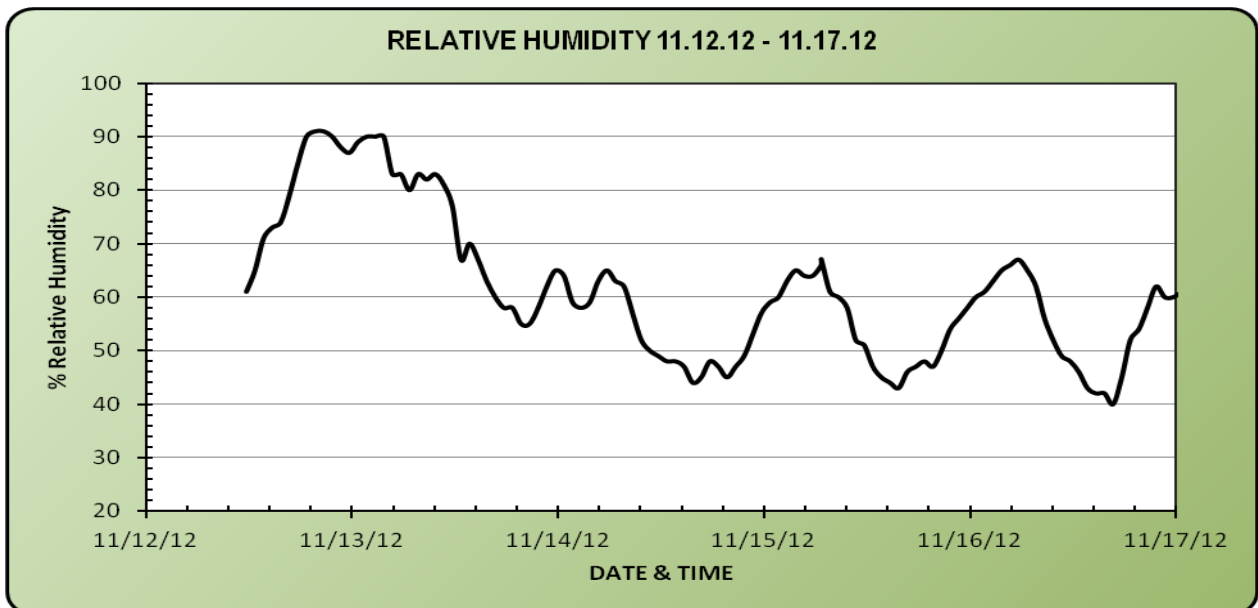
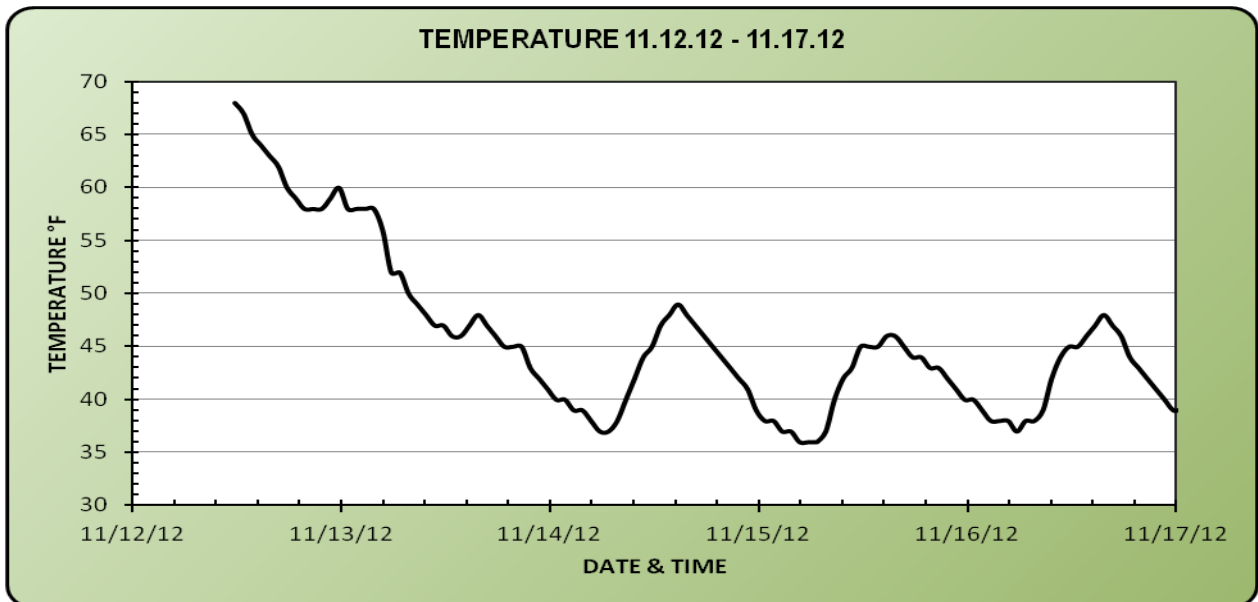
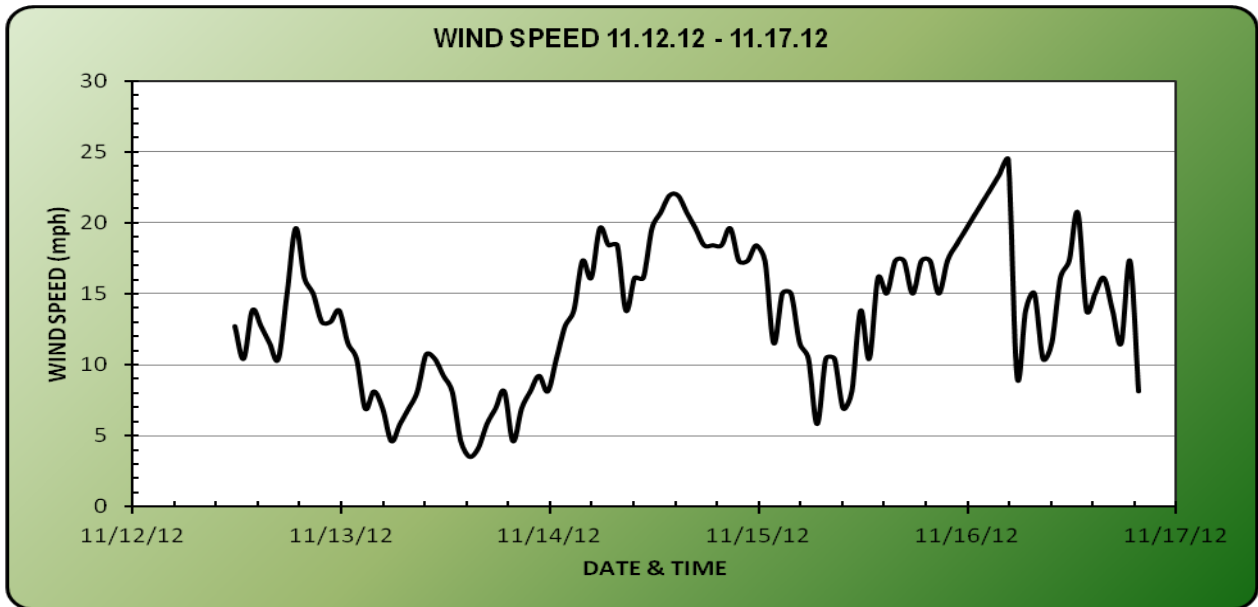
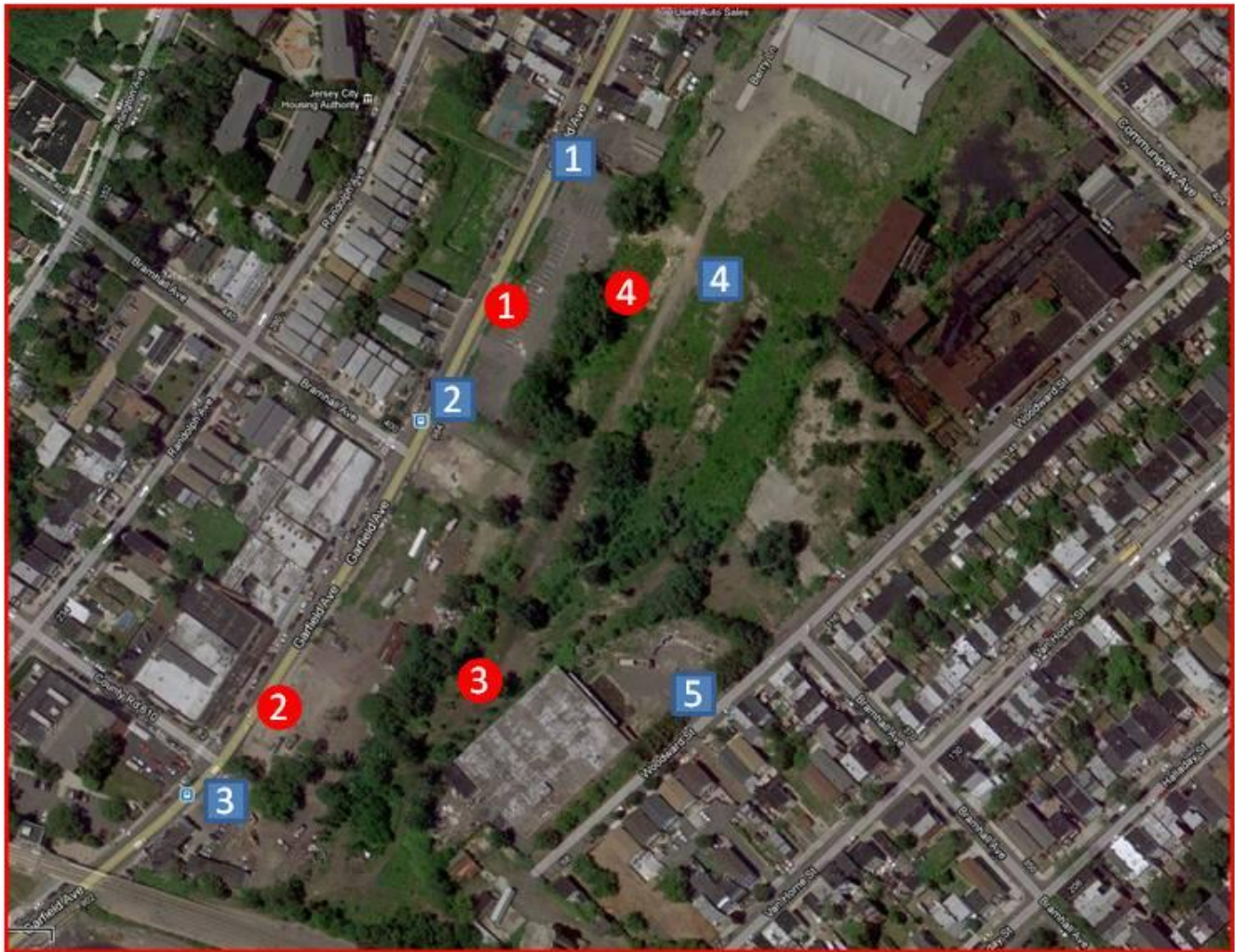


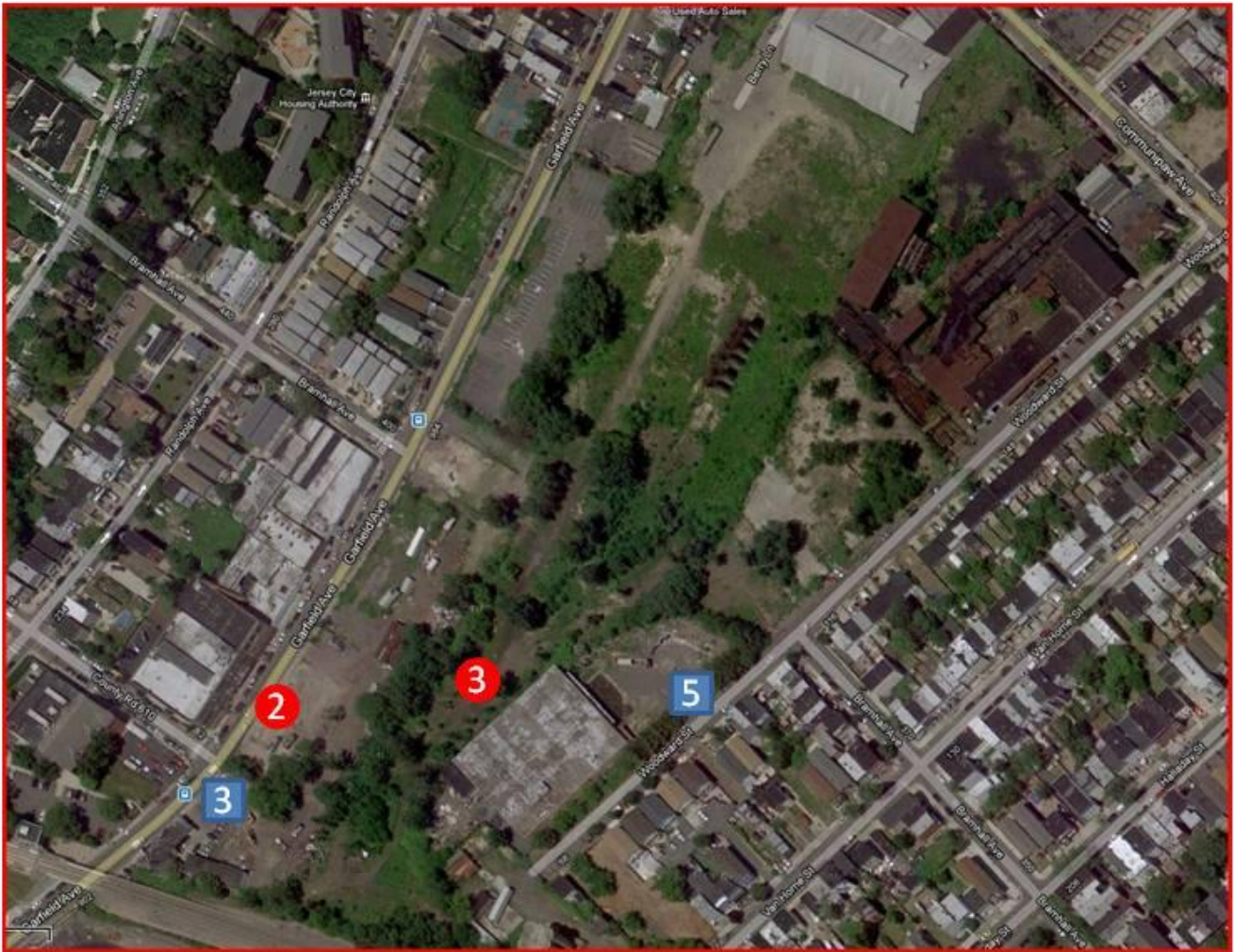
Figure 2: Weekly/Daily Site Map (10/12/12 – 11/16/12)



Fenceline Fixed Air Monitoring Station (FAM)

Perimeter of the Exclusion Zone Portable Air Monitoring Station (PAM)

Figure 2: Weekly/Daily Site Map (10/17/12)



Fenceline Fixed Air Monitoring Station (FAM)



Perimeter of the Exclusion Zone Portable Air Monitoring Station (PAM)