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January 27, 2017

VIA REGULAR MAIL AND EMAIL

The Honorable Barry P. Sarkisian, P.J. Ch.
Superior Court of New Jersey
Brennan Courthouse
583 Newark Avenue
Jersey City, New Jersey 07306

Re: **PROGRESS REPORT (July 1, 2016 through December 31, 2016)**: New Jersey Department of Environmental Protection, et al. v. Honeywell International, Inc. et al. v. City of Jersey City et al., Superior Court of New Jersey, Chancery Division, Hudson County, Civil Action No. HUD-C-77-05; Partial Consent Judgment Concerning the PPG Sites (the **"JCO"**)

Dear Judge Sarkisian:

I respectfully submit this Progress Report for the period July 1, 2016 through December 31, 2016 pursuant to my responsibilities as independent Site Administrator operating under the JCO. I refer Your Honor to my first Progress Report dated July 29, 2016, covering the period January through June 2016 (the **"First Progress Report"**), a copy of which is enclosed. Capitalized terms used in this Progress Report that are not defined shall have the meanings as set forth in the First Progress Report.

I am submitting this Progress Report pursuant to paragraph 1(b)(i)1 of the "Order Administratively Dismissing This Matter Without Prejudice and Retaining Jurisdiction" entered by Your Honor on May 4, 2016 (the **"May 2016 Order"**). That Order requires that I submit Progress Reports to the Court twice per year.

In addition to serving as Site Administrator, I am also serving as a Court-appointed Mediator pursuant to the February 22, 2016 "Order Referring Third-Party Complaint and Referring Certain Matters to Mediation and Entering Stay" (the **"Mediation Order"**). A summary of the progress of the Mediation is included in this Progress Report.

I. Monitoring the Master Schedule

Included with my First Progress Report was the revised Master Schedule dated as of July 29, 2016 (the "July 2016 Master Schedule"). The July 2016 Master Schedule was amended by a two page amendment signed by the JCO Parties.[1] This amendment relates solely to Sites 107/108 (see Section V. E. herein).

II. Issuance of EOHSI Blood Monitoring Report

In June and July 2016 the Environmental and Occupational Health Sciences Institute, Rutgers School of Public Health (**"EOHSI"**) conducted their seventh and final round of blood sampling pursuant to a six-year study program. The blood samples were collected from residents living in a Study Area[2] near the PPG Garfield Avenue cleanup sites. On December 6, 2016, EOHSI issued its final report summarizing the results of all seven rounds of blood sampling. The EOHSI report confirmed that the multiple and overlapping measures[3] to prevent human exposure to harmful chromium during the soil cleanup activities at the PPG Garfield Avenue cleanup sites have been effective. The report concluded that the blood sampling did not find any evidence of an increase in the blood chromium levels of the Study Area participants, despite the digging up and hauling away of nearly 1 million tons of chromium-contaminated soil and debris at the PPG Garfield Avenue cleanup sites.

The blood study has its origins in a series of public meetings held before the excavation began at the PPG Garfield Avenue cleanup sites when the former Site Administrator recommended the blood study be conducted to monitor potential chromium exposure to residents. The EOHSI report is posted on the Chromium Cleanup Partnership web site. A copy of the EOHSI report is enclosed.

III. Status of Residential Inspection Program

As discussed in my First Progress Report, my staff and I also oversee a Residential Inspection Program. The Program offers owners/occupants of residential properties who live within defined areas of PPG cleanup sites the opportunity to request an inspection of the exterior of their homes if they suspect chromium waste is in, or on, their property. When I started my tenure in January 2016 there were forty-seven (47) such properties remaining in the Program that potentially required inspection, sampling and/or remediation. As of December 31, 2016, only nine (9) of those properties require further action. It is anticipated that the remaining nine (9) properties will be studied and, where necessary, remediated in 2017.

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[1] As used herein, the "JCO Parties" are PPG Industries, ("PPG"), the New Jersey Department of Environmental Protection ("DEP") and the City of Jersey City ("City")

[2] The "Study Area" is defined in the EOHSI Report to include the area from 880 Garfield Avenue (the location of the former PPG chromate production facility) west to Ocean Avenue; south to Bayview Avenue and north to Bramhall Avenue.

[3] My First Progress Report included a discussion of these protective measures.

IV. Status of Interim Remedial Measures

Interim Remedial Measures (**"IRMs"**) are in place at certain of the PPG chromium sites that have not as yet been fully remediated. These IRMs serve as temporary safeguards to prevent exposure to hexavalent chromium. Inspections of the IRMs are performed weekly, twice per month, monthly or quarterly depending upon various factors, such as the levels of contamination, the potential for exposures and the type of IRM being utilized. The IRM inspection reports for the period covered by this Report did not reveal problems of any significance.

V. Summary of Remediation Progress at the PPG Sites

A. Remediation of the GAG Sites[4]

Excavation and partial backfilling of all Phases of the GAG Sites[5] have been completed as of this Report, with the exception of the parcels encompassing Phase 3B South and a small area adjacent to the Al Smith Moving building and Building 51. Phase 3B South consists of Site 133 West, a portion of Site 137B, the Fishbein property (816 Garfield Avenue) and the Ten West Apparel property (800 Garfield Avenue).

Your Honor is well aware of the litigation between PPG and Ten West Apparel over access to the Ten West Apparel property and the impact of that litigation on remediation. Not only has remediation been delayed at the Ten West site, but, also, excavation of the portions of Phase 3B South not owned by Ten West Apparel has been delayed due to the proximity of these parcels to the Ten West Apparel warehouse building and the concern for potential damage to the warehouse should further excavation be performed in these surrounding areas.

The GAG Sites are the group of sites that represent the focus of the most community interest. While these sites have been the most challenging in terms of planning and complexity, through December 31, 2016, approximately 891,000 tons of CCPW-contaminated soils/materials have been removed from these sites. In addition, through December 31, 2016, approximately 814 million gallons of contaminated water have been treated and removed.

The July 2016 Master Schedule requires that "restoration complete" for the GAG Sites be achieved by October 2017. "Restoration" is defined to mean installation of a "capillary break" and final remediation grading.[6] A "capillary break" is a sufficient height of soil, coarse graded stone or other material above the groundwater that is designed to prevent the upward migration of dissolved phase contaminants through capillary action (e.g., capillary rise). Installing a capillary break prevents direct human exposure to

4 For the purpose of this Progress Report, the "GAG Sites" do not include the "GAG Roadways" and the "GAG Offsite Properties." My First Progress Report explains the differences between the "GAG Sites," the "GAG Roadways" and the "GAG Offsite Properties," including figures showing the locations of these properties/roadways.

5 As noted above, for discussion purposes, the "GAG Sites" do not include the "GAG Roadways" and the "GAG Offsite Properties."

6 This term is defined in note 5 of the July 2016 Master Schedule.

hexavalent chromium that may be deposited by the evaporation of water on porous surfaces (more commonly referred to as "blooms").

In 2015, the JCO Parties agreed upon the design parameters for a "Capillary Rise Study." This Study is designed to, among other things, evaluate different materials to best serve as the capillary break on and at the GAG Sites. The field work for this study was completed, as scheduled, last Summer.[7] Four (4) quarterly data reports generated by the Study were submitted to the JCO Parties by the end of 2016. In addition, a final Capillary Rise Study Report, which was originally intended to be submitted to the JCO Parties by December 31, 2016, will be submitted to the JCO Parties in February, 2017. DEP shall then make a final determination of the capillary break methodology by March 31, 2017. Following the capillary break methodology determination, PPG will be able to prepare the design for the capillary break and to commence installation of the break where needed at the GAG Sites.

The July 2016 Master Schedule contemplates that most of the GAG Sites shall achieve "Restoration Complete" by October 2017. In my opinion, delays are likely to occur, unless circumstances change, with respect to the Ten West property, the other parcels encompassing Phase 3B South and the small area adjacent to the Al Smith Moving building and Building 51.

B. Remediation of the GAG Roadways

The GAG Roadways include the portions of Halladay Street North, Forrest Street, Carteret Avenue and Garfield Avenue.[8] A summary of the status of each is set forth below.

Halladay Street North: CCPW has been discovered under this roadway between Carteret Avenue and Forrest Street. PPG plans to excavate this material at the same time it conducts its cleanup at 78 Halladay Street (the former Halsted Bag Company property). The excavation is scheduled to commence in June 2018.

Forrest Street: CCPW was identified in the soil under this roadway. In addition, CCPW was identified in accessible areas near the buildings along this roadway (i.e., the "Forrest Street Properties"), though it has not been identified underneath them. PPG expects to begin excavation this March 2017on both the Forrest Street roadway, as well as the Forrest Street Properties (see discussion of Forrest Street Properties below).

Garfield Avenue: PPG is currently conducting remedial investigation work on this very busy roadway between Carteret Avenue and the Hudson Bergen Light Rail overpass. The work is being performed on Sundays only due to vehicular traffic. PPG expects to complete its investigation of this roadway early this year. Like Carteret Avenue, Garfield Avenue has a sewer line and other utilities beneath it. As a result, PPG is in discussions with the City on the method and timing of the ultimate remediation.

[7] The Study parameters called for completion of test cell observations for Fall 2015, Winter 2016, Spring 2016 and Summer 2016, at a minimum.

8 See Figures 1 and 2 attached to the July 2016 Master Schedule, which was included with my First Progress Report.

Carteret Avenue: The remediation plan for the Carteret Avenue section of the GAG Roadways is complicated by the presence of a 96 inch steel combined sewer pipe that extends from the intersection of Carteret Avenue and Garfield Avenue to beyond the intersection of Carteret Avenue and Pacific Avenue. PPG has completed its predesign investigation in the section of Carteret Avenue between Garfield Avenue and Pacific Avenue.

Testing shows that soils contaminated by CCPW surround large portions of the pipe. The CCPW-impacted soils/materials that surround the pipe cannot be remediated with the sewer pipe in place for fear of damaging the pipe. Therefore, the City of Jersey City has agreed that a new pipe will be installed in or adjacent to Carteret Avenue and that the existing pipe will have to be removed. The installation of the new pipe will require the Jersey City Municipal Utilities Authority to apply for funding through the New Jersey Environmental Infrastructure Trust. This is a major project.

PPG and the City have agreed in principle on the terms of a Memorandum of Understanding (**"MOU"**) with respect to the Carteret Avenue project. The MOU is designed to coordinate the installation of the new pipe, removal of the existing pipe and the remediation work in and around the new and existing pipe trenches. The JCO Parties had previously targeted December 31, 2016 for the establishment of milestones for the Carteret Avenue work activities, but the JCO Parties have since agreed, as part of the MOU, to an implementation schedule that calls for the establishment of formal milestones by October 2017.

C. Remediation of the GAG Offsite Properties

For the purpose of this Report, the GAG Offsite Properties include Site 135 North (portion of 51-99 Pacific Avenue), Site 135 South (remainder of 51-99 Pacific Avenue), the Al Smith Moving property located at 33 Pacific Avenue, the former Halsted Bag Company property located at 78-104 Halladay Street (now owned by PPG) and the Forrest Street Properties located at 90 to 98 Forrest Street.

Site 135 North: PPG acquired this parcel in 2015. Demolition of the buildings and excavation and backfilling of CCPW-contaminated soils was completed in July 2016.

Site 135 South: PPG acquired this parcel in 2015. PPG has demolished all of the buildings on this site. Excavation of the CCPW-impacted soils/materials located at Site 135 South was completed in 2016, with the exception of impacted materials located under and in close proximity to Building 51. These remaining materials will be excavated concurrently with the remediation of the Al Smith Moving property (see below).

Al Smith Moving Property: Based upon its evaluation of soils at and under the building situated at the Al Smith Moving property, PPG determined in December 2016 that demolition of that building will be required to properly remediate CCPW-impacted soils/materials located on that parcel. The Al Smith Moving business now occupies the former Halsted Bag Company building located on Halladay Street. The contaminated

materials located under the former Building 51 on Site 135 South and in proximity to those buildings will be remediated.

Former Halsted Bag Company Property: This property was acquired by PPG in February 2016. The prior owners (the Halsted Bag Company) vacated the building. The building is currently occupied by Al Smith Moving. Al Smith Moving must vacate the building on or before October 2017 in order to allow PPG time to demolish the Halsted building and complete the remediation of chromium-impacted soil and debris underlying the building. Excavation is scheduled to start in June 2018.

Forrest Street Properties: This site consists of various multi-tenanted buildings, as well as a vacant parcel adjacent to the NJ Transit Light Rail tracks. PPG completed most of the pre-design investigation work for these parcels in 2016. The Master Schedule calls for excavation to commence in March 2017. As a result of concerns raised by tenants about building structural issues that surfaced during site work over the last several months, it is possible that the March 2017 excavation start date will be delayed.

D. Groundwater at the GAG Sites

PPG continues to sample the extensive network of groundwater monitoring wells at the GAG Sites. PPG has also installed equipment in some of the monitoring wells that is providing data to evaluate seasonal changes in local groundwater elevations and the vertical groundwater flow relationships between the shallow and intermediate groundwater zones. PPG has also conducted pilot studies to investigate the possible use of biological or chemical treatment of the chromium in the groundwater.

Data collected from the sampling of the groundwater monitoring wells, among other information, is compiled in quarterly progress reports that are supplied to the JCO Parties. The groundwater investigation conducted to date reveals that, with few exceptions, groundwater at the GAG Sites to a depth of approximately 20 feet below ground surface meets the DEP's groundwater quality standards for total chromium. The intermediate and deep zones, however, continue to demonstrate chromium exceedances.

PPG has committed to supplying the JCO Parties by the beginning of March 2017 with a work plan for the installation of additional groundwater monitoring wells and other work activities designed to assist PPG in delineating the scope of chromium contamination in the groundwater in and around the GAG Sites. While the remedial investigation work continues, PPG is considering various technologies and measures to remediate the groundwater contamination at the GAG Sites.

In July 2016, when the JCO Parties were preparing the revised Master Schedule, they agreed to establish new groundwater milestones by August 31, 2016. Unfortunately, as a result of the fact that PPG's corporate director of environmental affairs fell ill and could not return to work until December 2016, there has been a delay in establishing a schedule for future groundwater work. The JCO Parties are, however, discussing new milestones and hope to soon have work schedules or milestones in place.

E. Remediation of the Remaining PPG Sites (the "Non-GAG Sites")

1. Site 156, Metropolis Towers: This is the large apartment complex across from City Hall, known as Metropolis Towers. Soil remediation and restoration activities at this site, mainly in the parking lot area, have been substantially completed. As a result of additional, unexpected soil contamination identified at this Site, the April 2017 milestone for Remedial Action Report ("RAR") Determination set forth in the July 2016 Master Schedule must be extended. The JCO Parties are in the process of developing a new milestone for RAR Determination for the soils at this Site.

Remediation of a small area in the basement boiler room in one of the buildings located at this site is being addressed on a separate timeline from the parking lot area. The Remedial Action Work Plan for the boiler room was deemed "approvable" in February 2016, subject to receipt of written consent from the property owner to engineering controls and a deed notice, which consent was obtained. PPG and the property owner are reevaluating the engineering control design for the boiler room due to issues related to whether the currently designed remedy can meet the New Jersey Boiler Code. Development of an alternative engineering control will require a revision to the Remedial Action Work Plan and Draft Deed Notice that were previously prepared. PPG will revise the sequence of remedial activities once the remedial analysis is complete and a remedy is selected. The Master Schedule has not established milestones for the Boiler Room remedial action. Implementation of remedial action within the Boiler Room will need to take place during the non-heating season per direction previously provided by the property owner.

2. Site 16, Linden East: This site hosts a multi-tenanted warehouse building located at the intersection of Caven Point Road and Linden Avenue East in Jersey City. Remediation of the parking lot area of this site was completed in June 2014.Approximately 46,000 tons of chromium-impacted soils were excavated and removed from the site. At the request of the property owner, building demolition and excavation of chromium-impacted soils underlying the building is scheduled to commence in 2019.

3. Site 63, Baldwin Oil: This site is located at the juncture of Burma Road and Morris Pesin Drive in Jersey City. The soil remediation work at this site is substantially complete and RAR Determination for soils is projected to occur in April 2017. The investigation of groundwater has commenced and is scheduled for completion in 2018.

4. Site 65, Burma Road/Morris Pesin Drive: This site is adjacent to Site 63. PPG, the City of Jersey City and DEP have negotiated a settlement pursuant to which PPG will make a monetary payment to the City in consideration for the City's role in the remediation of this site. The terms of the settlement agreement have been agreed to by the parties and it is anticipated that it will be fully executed by the end of this month. Upon execution, this site will be removed from the Master Schedule.

5. Sites 107/108, Fashionland/Albanil: The tenant in the building located at Site 107 (EMI Millwork, Inc.) requested that the JCO Parties extend the Master Schedule milestones because of construction delays in the new building to which this tenant planned to relocate. The JCO Parties agreed to the extension and entered into a written amendment of the Master Schedule dated November 28, 2016. A copy of the amendment is attached. Site 107 is also the subject of ongoing access litigation (PPG Industries, Inc. v. Greenberg Property, LLC, et al., Docket No.: HUD-C-117-13). PPG is currently negotiating the terms of an access agreement with the new owner of Site 108. Site 108 is adjacent to Site 107. Only a small portion of Site 108, along the boundary of Site 107, is impacted by chromium. Remediation of that small area will occur concurrently with the remediation of Site 107.

6. Site 174, Dennis Collins Park (Bayonne): Excavation of certain areas of the Park was completed in July 2016. Some further remediation of the soils at the Park remains to be done. PPG, DEP and the City of Bayonne are working together to coordinate the timing of the additional remediation work with the City's plans for redevelopment of the Park. All of the Master Schedule dates will have to be reassessed based upon the discussions with representatives of Bayonne.

7. 457 Communipaw Avenue: This area is located at the intersection of Berry Lane and Communipaw Avenue. In December 2015, a JCRA contractor discovered an area potentially impacted with CCPW. It was ultimately confirmed that CCPW was present in the soils in excess of applicable DEP remediation standards. The portion of this impacted area that was accessible to PPG has been fully remediated. Because it was determined, that the CCPW impacts likely extend onto 457 Communipaw Avenue, an adjacent property, PPG is currently seeking to obtain access to that property to conduct an investigation and determine the extent of remediation required.

8. Site 147, Weehawken: This site is located at 999 Baldwin Avenue, Weehawken. The remediation field work for this site was completed in 2001 in accordance with a DEP-approved Remedial Action Work Plan. DEP provided comments in 2002 to a Remedial Action Report that was submitted for the site. The Department's comments were limited to administrative and documentation items and did not require any changes or modifications to the remediation field work. The activities required to obtain final DEP approval are limited to such items as Weehawken's execution of a Deed Notice for the remedial action implemented by PPG and another responsible party, and the need for a remedial action permit. I attended a meeting on October 20, 2016 with PPG, DEP and Weehawken's counsel to try to facilitate action by the parties to get this site closed out. In addition, DEP followed with a letter to Weehawken's counsel to help expedite the matter. This matter may ultimately need Your Honor's attention.

VI. Mediation Proceedings

Pursuant to the Mediation Order, I was appointed as Mediator with respect to the following principal issues: (i) to attempt to obtain agreement among PPG, JCRA, and the

City of Jersey City with respect to costs related to the restoration of roadways and other City improvements/infrastructure once the remediation of soils is completed, and (ii) to attempt to obtain agreement among PPG, JCRA and Hampshire with respect to reimbursement of "incremental costs" that Hampshire and JCRA allege will be incurred during the redevelopment of the properties. The definition of incremental costs is in dispute.

The Mediation Order also provided that the issues addressed by the Mediation could be expanded upon further agreement of the Parties.

Since the entry of the Mediation Order I have held mediation sessions on the following dates in 2016: March 1, May 11, May 24, June 7, June 29 and November 4. The next mediation session is scheduled for February 1, 2017. Following the February session I will report to Your Honor whether any progress is made.

VII. Current and Future Activities

Newsletter: The Chromium Cleanup Partnership has published a newsletter that summarizes the status of activities at the PPG chromium sites. A copy of the newsletter is attached. The newsletter will be distributed to a lengthy mailing list consisting of residents, business owners, public officials and other interested parties.

Updating of Chromium Cleanup Partnership Web Site: The Chromium Cleanup Partnership web site was recently updated to include PPG submittals, a summary of the EOHSI Blood Monitoring Report and other information of interest to the public. To access the web site go to: www.chromiumcleanup.com.

Public Open House: A public open house will be held on January 31 from 6:30 to 8:30 p.m., at the Mary McLeod Bethune Life Center, 140 Dr. Martin Luther King Jr. Drive. My office, DEP, PPG and its consultants, Weston, the City of Jersey City, JCRA and others will participate in the open house and respond to questions from the public about the status of the cleanup of the PPG chromium sites.

VIII. Conclusion

I am pleased, after year one of my work as Site Administrator, to be able to say that the remediation of the PPG chrome sites has been done safely for the public, the on site workers, and all persons involved with the cleanup. That remains, as it must, everyone's highest priority.

As my Report indicates, while there have been some unexpected conditions that have caused some delays in remediating the chrome sites, on balance the 2016 remediation efforts have gone smoothly, efficiently, and effectively. This is a tribute to the hard work, talent, dedication, and good faith of the JCO Parties who, despite having differences from

time to time, always manage to find common ground. It is noteworthy that I did not need to seek Your Honor's intervention during 2016 to resolve any differences between the Parties. I expect that to continue in 2017. For their cooperation and support, I am most appreciative.

My primary goal going forward is to find a pathway that will allow for remediation efforts to blend seamlessly with restoration of all of the cleanup sites as well as redevelopment of the GAG sites. The potential exists to transform the GAG sites from what was an unsafe venue and eyesore into a vibrant community that can flourish and be enjoyed by the citizens of Jersey City as well as beyond. My goal, I know, is a goal that is embraced by the Parties as well as non-parties, all of whom stand ready, willing, and able to remediate, restore, and redevelop the GAG sites. In 2017 I will continue in my efforts to convert potential into reality.

I thank the Court for considering this Progress Report. I am available at your convenience to answer any questions you may have.

Respectfully submitted,

Ronald J. Riccio
Site Administrator

Attachments:

- July 2016 Progress Report with Master Schedule (including Figures 1 and 2 to Master Schedule)
- Chromium Cleanup Partnership Newsletter
- EOHSI Blood Monitoring Report
- Site 107/108 Master Schedule Amendment

cc: Via email:
PPG Industries
NJDEP
City of Jersey City
JCRA
Hampshire

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July 29, 2016

VIA REGULAR MAIL AND EMAIL

The Honorable Barry P. Sarkisian, P.J. Ch.
Superior Court of New Jersey
Brennan Courthouse
583 Newark Avenue
Jersey City, New Jersey 07306

Re: **PROGRESS REPORT**: New Jersey Department of Environmental Protection, et al. v. Honeywell International, Inc. et al. v. City of Jersey City et al., Superior Court of New Jersey, Chancery Division, Hudson County, Civil Action No. HUD-C-77-05; Partial Consent Judgment Concerning the PPG Sites

Dear Judge Sarkisian:

I respectfully submit this Progress Report pursuant to my responsibilities as independent Site Administrator operating under the Partial Consent Judgment entered on June 26, 2009, as amended (**"JCO"**).

Effective January 4, 2016, I became Site Administrator pursuant to the December 2, 2015 "Order Setting Transition Timeline and Appointing Ronald Riccio as New Site Administrator." Under paragraph 1(b)(i)1 of the "Order Administratively Dismissing This Matter Without Prejudice and Retaining Jurisdiction" entered by Your Honor on May 4, 2016 (the **"May 2016 Order"**) I am required to submit Progress Reports to the Court twice per year.

This is my first Progress Report. A second Progress Report will be submitted to Your Honor in December 2016.

Since my appointment there have been no disputes or disagreements that could not be resolved by the Parties.[1] This is a testament to the good faith of Parties.

[1] As used herein, the Parties are PPG Industries, ("PPG"), the New Jersey Department of Environmental Protection ("DEP") and the City of Jersey City ("City").

I am also serving as Court appointed Mediator pursuant to the February 22, 2016 "Order Referring Third-Party Complaint and Referring Certain Matters to Mediation and Entering Stay" (the **"Mediation Order"**). A summary of the progress of the Mediation is included in this Progress Report.

I. Site Administrator Transition

Between October 2015 and the effective date of my appointment (January 4, 2016) as Site Administrator, the former Site Administrator, Michael McCabe, was extremely helpful and gracious in assisting my transition. I thank him for his assistance. As a result, the Site Administrator transition process has been seamless.

Since January 4, and even before that date, I have taken proactive steps so that I could "hit the ground running" as Site Administrator. Some of my efforts include:

- Attending numerous meetings and having daily communications with PPG, DEP and the City to accommodate and assess their interests/perspectives/concerns regarding cleanup of the PPG chromium sites.
- Attending several meetings and having regular communications with the Jersey City Redevelopment Authority (**"JCRA"**) and Hampshire Urban Renewal Redevelopment, LLC (**"Hampshire"**) to accommodate and assess their interests/perspectives/concerns regarding cleanup of the PPG chromium sites as well as the future redevelopment of the Garfield Avenue Group (**"GAG"**) sites.
- Attending meetings with affected, or potentially affected, business owners and property owners in and around the GAG sites, including, among others, the owners of Ten West Apparel, Al Smith Moving, the Halsted Bag Company, the owner of the Forrest Street properties, and Spectrum Health Care.
- Attending meetings with the Jersey City Environmental Commission.
- Attending meetings with community leaders.
- Attending a public "Meet and Greet" at the Bethune Center in Jersey City.
- Attending a public meeting at the Bethune Center at which representatives of DEP, the City, PPG and the JCRA were present to address questions and comments from the public.
- Responding to public inquiries both by phone and electronically.

II. Monitoring The Master Schedule

Paragraph 49(a) of the JCO requires the Site Administrator to, among other things, establish a judicially enforceable Master Schedule for the filing and review of submittals by PPG and to ensure that good faith efforts are made to meet the goals established in the Master Schedule. The last Master Schedule approved by the Court was dated as of October 13, 2015 and was the subject of an Order dated November 6, 2015 (the **"2015 Master Schedule"**).

The Parties, under my supervision, have prepared a revised Master Schedule dated as of July 29, 2016 (the **"Revised Master Schedule"**). A copy of the Revised Master

Schedule, enclosed for Your Honor's consideration, takes into account the most recent information concerning the milestones for completion of the investigation and remediation of the PPG chromium sites.

My staff[2] and I have worked with DEP, the City and PPG to establish the most aggressive milestones possible for the safe, effective, expeditious and efficient performance for remediation and restoration of the PPG chromium sites. In that regard, revised procedures have been developed to carefully track the progress of the work, such as the use of Gantt charts, submittal tracking logs and weekly conference calls and/or meetings with technical personnel and others. These procedures provide an early warning system to alert everyone whether milestones will be achieved, whether adjustments are necessary due to unforeseen ground conditions, and how best to respond to unanticipated problems.

I respectfully direct Your Honor's attention to the areas of the Revised Master Schedule shaded in green. Those green areas illustrate completion of tasks. Your Honor will notice in the "Comments" column of the Revised Master Schedule that milestones are difficult to predict for sites that are currently the subject of litigation. The Comments also take into account other complexities that can impact adherence to projected milestones.

III. Remediation Standards And The Preeminence Of Public Safety

The DEP has been vigilant in requiring and monitoring compliance with its most stringent standards for the remediation of soils and groundwater at the PPG chromium sites. In that regard, no one disagrees that DEP's most stringent standards govern the cleanup. Those standards call for the remediation of hexavalent chromium in soil to 20 mg/kg (for residential properties, to 20 feet below ground surface) in accordance with the DEP Commissioner's February 2007 Chromium Policy, and the remediation of total chromium in groundwater to 70 ug/l, which is the groundwater quality standard designated by NJDEP for use of the groundwater as potable water. PPG agreed to comply with these standards in remediating the PPG sites. It should be noted that the groundwater at the PPG sites is not a source of drinking water.

My staff and I have worked with DEP and the independent Technical Consultant[3] to ensure that these standards are strictly met. In that regard, great care has been taken to ensure that all aspects of the cleanup are conducted with the highest regard for public safety.

All of the objective public health and safety measurements confirm that activities taken to protect the public during remediation have been and continue to be effective. For example, sophisticated air monitoring is being conducted continuously until the sites have been restored to identify potential chromium releases. The air monitoring results are posted on the Chromium Cleanup Partnership web site.

[2] My staff includes James D. Ray, Esq. and Nancy R. Colson, Administrative Assistant.

[3] The JCO authorizes the Site Administrator to engage a "Technical Consultant" to advise the Site Administrator and DEP on technical matters. Weston Solutions has been functioning as the Technical Consultant since 2009. A new contract was entered between Weston Solutions and Ronald Riccio, Site Administrator, dated January 4, 2016.

My staff and I also oversee a Blood Monitoring Program. This Program, which is a component of the Health Study required by the JCO and was requested by neighborhood residents in early public meetings after the 2009 JCO was entered, has been independently administered by the Environmental and Occupational Health Sciences Institute (EOHSI) at Rutgers University. It has served as additional validation that the multiple exposure prevention and safety measures implemented during the cleanup have protected the public.

The seventh round of blood sampling of volunteers from the Garfield Avenue community was completed in July 2016. As in previous rounds of sampling, independent laboratory results show that there have been no discernable chromium exposure levels attributable to the remediation. A final report of all of the rounds of blood sampling will be completed later this year and will be posted on the Chromium Cleanup Partnership web site.

My staff and I also oversee a Residential Inspection Program. This Program is broadcast to the public via the Chromium Cleanup Partnership web site, through newsletters, as well as at public meetings and word of mouth. The Program offers residents who live within defined areas of certain PPG chromium sites the opportunity to request an inspection of their homes if they suspect chromium waste is in, or on, their property. Since implementation of this Program in 2010, 80 property owners joined the Program. Of the responses received, 32 inspections were conducted and 23 properties were sampled. Of those properties sampled, five were determined to have exceedances unrelated to the PPG sites. Of those five, PPG has voluntarily remediated three properties thus far. Currently, I am actively communicating with at least 12 homeowners to schedule inspections and, if required, sampling and remediation.

Some affected buildings located on or near the PPG chromium sites have not been fully remediated, as yet. In order to protect against potential exposures to occupants, Interim Remedial Measures (**"IRMs"**) have been installed at specific areas within these buildings. The IRMs used at the PPG sites serve as temporary safeguards to prevent exposure to hexavalent chromium, such as areas of concrete floors that have been coated with epoxy to impede hexavalent chromium "blooming" through the flooring materials. Inspections of IRMs are performed weekly, twice per month, monthly or quarterly depending upon, among other things, the potential for exposure. IRM Inspection Reports are regularly generated and shared with the affected property owners.

IV. Summary of Remediation Progress at PPG Sites

A. Remediation of the GAG Sites (Exclusive of GAG Roadways and GAG Offsite Properties)

Attached to the Master Schedule are two figures, **Figure 1** and **Figure 2**. These figures depict the "Garfield Avenue Group" of sites (the **"GAG Sites"**). The GAG Sites include the following parcels, broken down as "Phases," shown on **Figure 1** and **Figure 2**:

- Interim Remedial Measure (IRM) #1, located within Site 114;
- Phases 1A and 1B, considered the Southwest (SW) Area within Site 114;

- Phase 1C, located within Site 114;
- Phase 2A, located within Site 114, addressed under Public Service Electric and Gas Company's remedial action;
- Phase 2B, which includes Phases 2B-1 through 2B-4, located within Site 114;
- Phase 3A, which includes Site 132 and most of Site 143;
- Phase 3B North, which includes a portion of Site 132, a portion of Site 137, and the remainder of Site 143;
- Phase 3B South, which includes Site 133 West, a portion of Site 137, the former Fishbein property, the Ten West Apparel property, and a small portion of Halladay Street South;
- Phase 3C, which includes Site 133 East, the remainder of Halladay Street South, and Site 135 North.

Also depicted on **Figure 1** and **Figure 2** are roadways and adjacent properties that have been impacted by hexavalent chromium, including:

- Phase 4, CCPW[4]-impacted roadways surrounding the GAG Group of Sites (the **"GAG Roadways"**), including Halladay Street North, Forrest Street, Carteret Avenue, and Garfield Avenue (from Carteret Avenue to the Light Rail); and
- Phase 5, the **"GAG Offsite Properties"** include CCPW-impacted properties adjacent to the GAG Sites, including the former Halsted Bag Company, Forrest Street Properties, and Al Smith Moving.

The GAG Roadways and GAG Offsite Properties are discussed further below (see Sections C. and D.).

Excavation and partial backfilling of all Phases of the GAG Sites have been completed as of this Progress Report, with the exception of a small area of Site 133 East adjacent to the Al Smith Moving building and Building 51 and the parcels encompassing Phase 3B South and the GAG Roadways.

PPG is in litigation with Ten West Apparel over access to the portion of Phase 3B South owned by Ten West Apparel, as well as other legal issues. Excavation of the portions of Phase 3B South, not owned by Ten West Apparel, has been delayed due to the proximity of these parcels to the Ten West Apparel warehouse and the concern about potential damage to the warehouse should further excavation be performed in surrounding areas.

With respect to the GAG Sites - the group of sites that represent the focus of community interest that have been the most challenging to date in terms of planning and complexity – through June 30, 2016, approximately 858,000 tons of CCPW-contaminated soils/materials have been removed. In addition, through June 30, 2016, approximately 79 million gallons of contaminated water have been treated and removed.

[4] "CCPW" refers to chromate chemical production waste and is more particularly defined in the JCO.

B. Restoration of GAG Sites

PPG, DEP and the City have agreed that "restoration" of the affected sites is defined to mean installation of a "capillary break" and final remediation grading.[5] A "capillary break" is a sufficient height of soil, coarse graded stone or other material above the groundwater that is designed to prevent the upward migration of dissolved phase contaminants through capillary action (e.g., capillary rise). Installing a capillary break prevents direct human exposure to hexavalent chromium that may be deposited by the evaporation of water on porous surfaces (more commonly referred to as "blooms").

In 2015, PPG, the City, DEP, JCRA and Hampshire agreed upon the design parameters for a "Capillary Rise Study" to, among other things, evaluate different materials to best serve as the capillary break on and at the GAG Sites. This study is scheduled to conclude by the end of Summer 2016.[6] A Capillary Rise Study Report will be submitted to DEP by December 31, 2016. DEP shall then make a final determination of the capillary break methodology by March 31, 2017. Following the capillary break methodology determination, PPG will be able to commence restoration of the GAG Sites that have been remediated. PPG is independently pursuing a Chromium Concentration Study to investigate the conditions under which blooming may occur.

The Revised Master Schedule contemplates that most of the GAG Sites shall achieve "Restoration Complete" by October 2017, with the exception of the small area of Site 133 East adjacent to the Al Smith Moving building, Building 51 within Site 135 South and a small area of Site 135 South adjacent to Building 51, and the parcels encompassing Phase 3B South, including the Ten West Apparel site.

C. Remediation of the GAG Roadways

The GAG Roadways include the portions of Halladay Street North, Forrest Street, Carteret Avenue and Garfield Avenue shown on **Figure 1** and **Figure 2**. PPG has completed field activities for the predesign investigation of Halladay Street North and Forrest Street. PPG is in discussions with Jersey City regarding road closure planning in order to conduct the predesign investigation for the Garfield Avenue roadway. The proposed remediation plans for the GAG Roadways await compilation and validation of the sampling/delineation data.

The remediation plan for the Carteret Avenue section of the GAG Roadways is complicated by the presence of a 96 inch steel combined sewer pipe that extends from the Garfield Avenue intersection to beyond the intersection of Carteret Avenue and Pacific Avenue. PPG has completed field activities for its predesign investigation in the section of Carteret Avenue between Garfield Avenue and Pacific Avenue. Testing shows that soils contaminated by CCPW surround large portions of the pipe. The CCPW-impacted

[5] This term is defined in note 5 of the Revised Master Schedule.

[6] The Study parameters called for completion of test cell observations for Fall 2015, Winter 2016, Spring 2016 and Summer 2016, at a minimum.

soils/materials that surround the pipe cannot be remediated with the pipe in place for fear of damage being done to the pipe. PPG and the City are working on an approach to coordinate installation of a new pipe, removal of the existing pipe, and the remediation work in and around new and existing pipe trenches.

Installation of the new pipe and removal of the existing pipe will require the Jersey City Municipal Utilities Authority to apply for funding through the New Jersey Environmental Infrastructure Trust. The milestones for completion of the remediation of Carteret Avenue will be reevaluated based upon the outcome of the current discussions between PPG and the City with respect to planning for removal and replacement of the existing pipe as well as associated remediation activities.

D. Remediation of the GAG Offsite Properties

The GAG Offsite Properties include the former Halsted Bag Company (now owned by PPG), Forrest Street Properties and Al Smith Moving. Remediation of the portion of Site 135 South that has not been completed will be conducted in concert with any required actions related to Al Smith Moving.

Site 135 South and Site 135 North[7] were acquired by PPG in August 2015. PPG has demolished nearly all of the buildings on those sites with the exception of Building 51, which is structurally attached to the Al Smith Moving building. Building 51 was left in place because its demolition could have affected the structural integrity of the Al Smith Moving Building. Under the Revised Master Schedule, the excavation of the CCPW-impacted soils/materials at Site 135 South (with the exception of Building 51) will be completed by October 2016. The portion of Site 135 South under Building 51 and soils adjacent to that building and the Al Smith Moving Building that have not as yet been remediated have been incorporated into the milestones for the Al Smith Moving Building, as shown on the Revised Master Schedule.

PPG recently concluded an agreement with Al Smith Moving. This agreement allows PPG access to the Al Smith Moving Building to conduct pre-design investigation, demolition (if required) and remediation. PPG has completed sampling and delineation of Building 51. During the pendency of the work at the Al Smith Moving Building and Building 51, Al Smith operations will temporarily move to the Halsted Building. This temporary move was carefully evaluated and accepted by all interested parties.

The Halsted Building was acquired by PPG in February 2016. The prior owners (the Halsted Bag Company) have since vacated the building. PPG has completed predesign investigation field activities at the Halsted Building. Remediation of the Halsted Building will continue after Al Smith Moving vacates that building.

The Forrest Street Properties consist of various buildings that are occupied by operating businesses, as well as a vacant parcel adjacent to the NJ Transit Light Rail tracks. PPG plans to complete its pre-design investigation work of these parcels in 3Q 2016.

[7] Excavation and backfilling of Site 135 North was completed as of the date of this Progress Report.

E. Groundwater at the GAG Sites

PPG has installed an extensive network of groundwater monitoring wells at the GAG Sites. Groundwater is sampled on a regular basis. The groundwater samples collected from the monitoring wells are sent to an analytical laboratory to obtain information on groundwater quality and to support on-going investigations of the extent of contaminant impacts, both horizontally and at depth within the aquifers.

Recently, PPG installed equipment in some of the monitoring wells that will provide data to evaluate seasonal changes in local groundwater elevations and the vertical groundwater flow relationships between the shallow and intermediate groundwater zones. PPG is also conducting pilot studies to investigate the possible use of biological or chemical treatment of the chromium in the groundwater. In the future, all of this information will collectively be used to select and design an appropriate method to remediate the groundwater contamination at the site. The Revised Master Schedule continues the same milestones for the groundwater at the GAG Sites established in the 2015 Master Schedule. The parties are presently discussing new milestones for the investigation and remediation of groundwater.

F. Remediation of the Remaining (Non-Garfield Avenue) PPG Sites

1. Site 156, Metropolis Towers: This is the large apartment complex across from City Hall, known as Metropolis Towers. Soil remediation and restoration activities at this site, mainly in the parking lot area, have been substantially completed. Nearly 60,000 tons of CCPW contaminated soils/materials have been removed and approximately 1.85 million gallons of groundwater have been removed, treated and discharged.

In the 2015 Master Schedule, Remedial Action Report Determination was projected to be completed by October 2016. However, as a result of a determined need for additional investigation in small areas of the site and additional confirmatory sampling, this milestone had to be re-set for April 2017. The remaining work for this site is limited to small areas that may require excavation, additional confirmatory sampling and report writing.

Remediation of a small area in the basement boiler room in one of the buildings located at this site is being addressed on a separate timeline. The Remedial Action Work Plan for the boiler room was deemed “approvable” in February 2016, subject to receipt of written consent from the property owner to engineering controls and a deed notice, which consent was obtained. Installation of engineering controls in the boiler room will occur this September.

2. Site 16, Linden East: This site hosts a warehouse building located at the intersection of Caven Point Road and Linden Avenue East in Jersey City. Remediation of the parking lot area of this site commenced in June 2014 and has been completed, including the excavation of approximately 46,000 tons of chromium-impacted soils.

The building owner recently entered into a lease with a new tenant and has requested that remediation of the building area be delayed. Therefore the Revised Master Schedule shows that completion of remediation within the building footprint and site restoration will be achieved by September 2021. A Remedial Action Report Determination for this site is scheduled to be complete by October 2022.

3. Site 63, Baldwin Oil: This site is located at the juncture of Burma Road and Pesin Drive in Jersey City. The work at this site is substantially complete. To date, more than 32,000 tons of CCPW-contaminated soils/materials and approximately 1 million gallons of impacted stormwater, groundwater and decontamination water were removed from this site. In the 2015 Master Schedule, RAR Determination was projected to occur by May 2016. However, as a result of a determined need for additional remediation in a small area adjacent to the site and additional confirmatory sampling, this milestone had to be re-set for March 2017.

4. Site 65, Burma Road: This site is adjacent to Site 63. The investigation and remediation of Site 65 is complicated by the presence of a water line owned by the City located within the Burma Road and Pesin Drive rights-of-way. In addition, PPG has raised questions regarding its responsibility for other potential sources of hexavalent chromium exceedances in this area and the presence of non-chromium contaminants unrelated to PPG waste products.

In the 2015 Master Schedule, the milestone for Excavation Complete was December 2016. The City and PPG are currently discussing an approach to the remediation of this site. The final remedial approach must be accepted by DEP.

I am carefully monitoring these discussions and the Revised Master Schedule milestones for this site. In particular, I am hopeful that the Parties can agree on the remedial approach for Burma Road in accordance with the Revised Master Schedule milestones.

5. Sites 107/108, Fashionland/Albanil: This site is the subject of ongoing litigation. While access to the building is to be provided in February 2017 pursuant to an Order in the matter captioned PPG Industries, Inc. v. Greenberg Property, LLC, et al., Docket No.: HUD-C-117-13, other legal issues involving PPG and the property owner are still pending. The revised Master Schedule anticipates that remediation and restoration of Sites 107/108 will be completed in 2018, though litigation delays could impact the completion date.

6. Site 174, Dennis Collins Park (Bayonne): Focused excavation of the Park was completed in July 2016. As noted in the Revised Master Schedule, DEP has agreed to extend the milestones set forth in the 2015 Master Schedule for Incremental Sampling Methodology ("ISM") planning/implementation.

PPG, DEP and the City of Bayonne are working together to determine the appropriate timing of future field activities, remediation and restoration, especially given the City's

plans for redevelopment of the Park. All of the Master Schedule dates will have to be reassessed based upon the discussions with representatives of Bayonne.

7. Berry Lane Park[8] (Sites 121 & 207), 186 (Garfield Avenue No. 1), 202 (Caven Point Realty), 203 (Claremont Associates), and 204 (Conrail Edgewater): These sites have been fully remediated to DEP's most stringent standards. Site closure documentation for these sites is as follows:

- CCPW contamination for Berry Lane Park (Sites 121 & 207) was remediated by JCRA on behalf of PPG. JCRA's LSRP issued a Response Action Outcome (RAO) for soils dated June 22, 2016 documenting the cleanup. Shallow groundwater was found to comply with DEP's groundwater standard for total chromium. Furthermore, a groundwater investigation of the deeper, intermediate zone is required by DEP's rules and regulations. JCRA will be conducting this investigation. The Park was successfully opened to the public on June 25, 2016. By any measurement, it is an impressive complex.

- DEP issued a Letter Confirming Completion of Remediation for Site 186 on July 15, 2015.

- PPG has received No Further Action letters for Sites 202, 203, and 204.

8. 457 Communipaw Avenue: This area is located at the intersection of Berry Lane and Communipaw Avenue. In December 2015, a JCRA contractor discovered an area potentially impacted with CCPW. It was ultimately confirmed that CCPW was present in the soils in excess of applicable DEP remediation standards. The portion of this impacted area located on property owned by the City has been fully remediated. It was determined, however, that the CCPW impacts may extend onto 457 Communipaw Avenue, an adjacent privately owned property. PPG is currently seeking to obtain access to that property to conduct an investigation and determine whether and to what extent remediation may be required.

V. Mediation Proceedings

Pursuant to the Mediation Order, I was appointed as Mediator with respect to the following:

1. To attempt to obtain agreement among PPG, JCRA, and the City of Jersey City with respect to:

[8] Berry Lane Park is not within the scope of the Site Administrator's responsibility under the JCO. Nonetheless, because it was the subject of much discussion during both public meetings that I attended, I thought it appropriate to include the status of the remediation of the Park in this report.

the rights and obligations between the Parties for investigation, remediation, access, restoration, development, construction and/or use of City of Jersey City facilities within the Garfield Avenue ("GA") Group sites, which for the purpose of this Order includes Hudson County Chromate Sites 114, 132, 133, 135, 137, 143 Carteret Ave., Garfield Ave., Forrest St., Halladay St. and/or any other GA Group site in the Master Schedule (as defined below)("the Mediated Sites"), including streets, sidewalks, above- and below-ground utility corridors, water and sewer mains, and other necessary City improvements and infrastructure related to the Mediated Sites, as well as those streets, sidewalks, utilities, and water and sewer mains which are not currently existing and/or located within the Mediated Sites but are included within the scope of the City of Jersey City, Canal Crossing Redevelopment Plan.

2. To attempt to obtain agreement among PPG, JCRA and Hampshire with respect to:

remediation and restoration of Hudson County Chromate Sites 114 and 132, terms of a deed notice for Sites 114 and 132, and reimbursement of Hampshire and JCRA incremental costs and all related issues with respect to Sites 114 and 132.

The Mediation Order also provided that the issues addressed by the Mediation could be expanded upon further agreement of the Parties.

Since the entry of the Mediation Order I have held mediation sessions on the following dates: March 1, May 11, May 24, June 7 and June 29. The mediation continues.

Significant progress toward settlements has been made in several areas, but not all. By the end of August, I expect that settlement will be reached with respect to a number of issues. As to those issues where settlement is not reached, I will declare the mediation to be at an impasse and, therefore, closed.

VI. Conclusion

Remediating and restoring all of the PPG Chromium sites, as well as redeveloping the GAG sites, is an arduous and complex task. Every day there are issues to be addressed and resolved. As Site Administrator, my goal has been to make sure that all remediation, restoration, and redevelopment activities are done safely, efficiently, expeditiously, and effectively. To date, while good progress is being made on all fronts, much work remains to be done.

As the Revised Master Schedule reflects, in some cases remediation and restoration is several years from completion. And, of course, redevelopment of the GAG sites cannot

commence until at least the soils remediation and restoration work at the GAG sites is finished and approved by DEP.

I want to commend, and thank, representatives of the DEP, PPG, Jersey City, the JCRA and Hampshire for their support in assisting me and my staff from the moment we began our Site Administrator work. It is essential that these groups work together to achieve an outcome that will best serve the people who live, work, and recreate at or near the PPG contamination sites.

Despite the inevitable complexities and tensions inherent in a multifaceted project such as this, everyone I have dealt with has been a quintessential professional. Everyone is committed to remediating, restoring, and/or redeveloping the PPG sites as soon as possible but, always, with public safety being the paramount consideration.

Your Honor's May 2016 Order requires status conferences to be held before the Court twice per year. In light of this Progress Report, would Your Honor kindly advise if the Court wishes to proceed with the scheduling of a status conference.

I thank the Court for considering this Progress Report. I am available at your convenience to answer any questions you may have.

Respectfully submitted,

Ronald J. Riccio

Ronald J. Riccio
Site Administrator

Attachments: Master Schedule with Figure 1 and Figure 2

cc: PPG Industries
NJDEP
City of Jersey City
JCRA
Hampshire

Master Schedule for the NJ PPG Chrome Remediation Sites
(Exhibit 2/3)
Rev. Date: July 29, 2016

SOILS - GARFIELD AVENUE SITES

Group/Phase or Site (See Figure 1 dated as of 7/19/16)	Property Description (Owner) (See Figure 2 dated as of 7/19/16)	Access/Road Closure Plan	Ready for Excavation Actual OR Required	Excavation Start Actual OR Required	Excavation Complete Actual OR Required	Backfill Complete Actual OR Required	Restoration Complete Actual OR Required	RAR Determination (See Notes)	Comments
GA Group IRM#1 and Phases 1A, 1B, 1C, 2A, 2B-1, 2B-2, 2B-3, and 2B-4	Site 114 (JCRA /Hampshire)	See Comments	12/31/2013	12/31/2013	11/24/2014	1/21/2015	October 2017	November 2018	Site 114 is the subject of pending litigation between PPG, Hampshire, JCRA and the City, but the Court issued an Order granting PPG access to conduct remediation work at this site. Any remaining issues are the subject of mediation between the mediating parties. If the mediation is unsuccessful, the litigation may again become active. Restoration to be implemented upon direction of NJDEP following the completion of all of the following activities related to the Capillary Rise Study: completion of test cell observations for Fall 2015, Winter 2016, Spring 2016, and Summer 2016, at a minimum; Capillary Rise Study Report to be submitted to NJDEP by December 31, 2016; NJDEP makes determination of capillary break methodology by March 31, 2017.
GA Group Phase 3A	Site 132 (824 Garfield) (JCRA)	See Comments	3/4/2014	3/4/2014	9/5/2014	5/15/2015	October 2017	November 2018	Site 132 is the subject of pending litigation between PPG, Hampshire, JCRA and the City, but the Court issued an Order granting PPG access to conduct remediation work at this site. Any remaining issues are the subject of mediation between the mediating parties. If the mediation is unsuccessful, the litigation may again become active. Restoration to be implemented upon direction of NJDEP following the completion of all of the following activities related to the Capillary Rise Study: completion of test cell observations for Fall 2015, Winter 2016, Spring 2016, and Summer 2016, at a minimum; Capillary Rise Study Report to be submitted to NJDEP by December 31, 2016; NJDEP makes determination of capillary break methodology by March 31, 2017.
	Site 143 (846 Garfield) (PPG)	PPG Owned							
GA Group Phase 3B-N (45 Halladay and a portion of 25 Halladay)	A portion of Site 137 (PPG)	PPG Owned	4/16/2014	7/9/2014	5/15/2015	8/3/2015	October 2017	November 2018	A portion of Site 137 was not able to be remediated because of its proximity to the Ten West Apparel Building, and is now considered part of Phase 3B-S under this Master Schedule. Restoration to be implemented upon direction of NJDEP following the completion of all of the following activities related to the Capillary Rise Study: completion of test cell observations for Fall 2015, Winter 2016, Spring 2016, and Summer 2016, at a minimum; Capillary Rise Study Report to be submitted to NJDEP by December 31, 2016; NJDEP makes determination of capillary break methodology by March 31, 2017.

Notes:
1) "Ready for Excavation" means access has been gained, building demolition and shoring installation, if required, have been completed, and there are no known impediments to prevent completion of excavation.
2) "Legal remedies will commence" means the initiation of court proceedings.
3) Green shading indicates that milestones have been attained.
4) For Garfield Avenue Group Sites, "Backfill Complete" means backfill is brought to the "pre-capillary break installation" grade of elevation ±11 feet NAVD 88, unless all the Parties agree to an alternate elevation.
5) For the purpose of this Master Schedule, "restoration" is defined as capillary break installation and final remediation grading. In-kind replacement of existing infrastructure and/or improvements removed to implement the remedy for the GAG Sites is the subject of pending mediation between the City and PPG.
6) Restoration within specific areas under/around infrastructure necessary to support on-going remediation may be delayed if such a delay is acceptable to the Department and property owners.
7) For the purpose of this Master Schedule, "RAR Determination" means that the Department will determine whether the Remedial Action Report (RAR) meets the requirements of applicable Department regulations and guidance. The Department will determine whether the milestone identified in the Exhibit is achieved assuming a complete RAR is received 7 weeks prior to the milestone and the RAR Figures/Tables have been submitted by PPG and reviewed/approved by the Department prior to full RAR submittal. A Draft Consent Judgment Compliance Letter will typically be issued by the Department within 30 business days of the issuance of an RAR approval.
8) This version of the Master Schedule has combined "Exhibit 2" and "Exhibit 3" from the last version of the Master Schedule dated October 13, 2015. The term Exhibits 2/3 is used here because prior orders entered by the court in NJDEP, et al. v. Honeywell International, Inc., et al. reference those exhibits as exhibits to the Master Schedule, which Master Schedule remains in effect as modified by these changes to Exhibits 2 and 3.
9) NJ Transit Right-of-Way (ROW): CCPW located beneath this ROW will be addressed concurrent with Site 199, as part of remediation requirements specified in the 2011 Consent Order (Orphan Sites Agreement).

Group/Phase or Site (See Figure 1 dated as of 7/19/16)	Property Description (Owner) (See Figure 2 dated as of 7/19/16)	Access/Road Closure Plan	Ready for Excavation Actual OR Required	Excavation Start Actual OR Required	Excavation Complete Actual OR Required	Backfill Complete Actual OR Required	Restoration Complete Actual OR Required	RAR Determination (See Notes)	Comments
GA Group Phase 3B-S (15 Halladay the remainder of 25 Halladay with 800 and 816 Garfield Avenue added)	Site 133 West (PPG) and the remainder of Site 137 (PPG)	PPG Owned	8 Months After Access is Obtained	8 Months After Access is Obtained	7 Months After Excavation Start	2 Months After Excavation Complete	3 Months After Backfill Complete	13 Months After Restoration Complete	Access litigation against Ten West Apparel was filed by PPG on September 10, 2015. Litigation pending. Resolution of the access dispute with Ten West Apparel is required in order to continue work at Site 133 West, remainder of Site 137 and the Fishbein property. This Group/Phase also includes remediation of portions of Halladay Street and Site 133 East (adjacent to Caven Point Avenue) used for access to the Ten West Apparel warehouse. Restoration to be implemented upon direction of NJDEP following the completion of all of the following activities related to the Capillary Rise Study: completion of test cell observations for Fall 2015, Winter 2016, Spring 2016, and Summer 2016, at a minimum; Capillary Rise Study Report to be submitted to NJDEP by December 31, 2016; NJDEP makes determination of capillary break methodology by March 31, 2017.
	Fishbein (816 Garfield Avenue) (PPG)	PPG Owned							
	Ten West Apparel (800 Garfield Avenue) (Gadeh)	In litigation (See Comments)							
GA Group Phase 3C	Site 133 East (22-68 Halladay) (PPG)	PPG Owned	4/21/2015	4/21/2015	10/22/2015	7/29/16 (See Comments)	October 2017	November 2018	The Backfill Complete milestones for Site 133 East and Halladay Street South were extended from December 2015 to July 2016 by Consent Order entered on January 6, 2016. The parties agreed that PPG would be permitted to maintain backfill at grade of elevation 9 for Site 133 East and Halladay Street South until July 2016. PPG achieved backfill complete for Phase 3C (Site 133 East, Halladay Street South and Site 135 North) to Elevation 11 Feet NAVD 88 in July 2016. Grids adjacent to Site 135 South or Al Smith Moving, which are being excavated with Site 135 South or Al Smith Moving, will be backfilled as part of Site 135 South or Al Smith Moving. Grids adjacent to Ten West Apparel, which are being excavated with Ten West Apparel, will be backfilled with Ten West Apparel. Utility reinstallation in Halladay Street South is on hold pending mediation between the City and PPG of issues related to in-kind replacement of utilities and other improvements/infrastructure. Restoration to be implemented upon direction of NJDEP following the completion of all of the following activities related to the Capillary Rise Study: completion of test cell observations for Fall 2015, Winter 2016, Spring 2016, and Summer 2016, at a minimum; Capillary Rise Study Report to be submitted to NJDEP by December 31, 2016; NJDEP makes determination of capillary break methodology by March 31, 2017.
	Halladay Street South (Jersey City)	Road Closure In Place							
	Site 135 North (Portion of 51-99 Pacific) (PPG)	PPG Owned	2/22/16	2/23/16	5/25/16	7/29/16			
GA Group Site 135 South	Site 135 South (Remainder of 51-99 Pacific) (PPG)	PPG Owned (See Comments)	3/15/16	3/16/16	October 2016	January 2017	October 2017	November 2018	The milestone for Excavation Start was achieved for Site 135 South with the exception of the soils under Building 51 and soils immediately to the north of Building 51. Building 51 was not able to be demolished for structural reasons and remains attached to the Al Smith Moving building. Building 51 and the soils immediately to the north and west of Building 51 (located within Site 133 East and Site 135 South) will be addressed in connection with the remediation of the Al Smith Moving property. Restoration to be implemented upon direction of NJDEP following the completion of all of the following activities related to the Capillary Rise Study: completion of test cell observations for Fall 2015, Winter 2016, Spring 2016, and Summer 2016, at a minimum; Capillary Rise Study Report to be submitted to NJDEP by December 31, 2016; NJDEP makes determination of capillary break methodology by March 31, 2017.
GA Group Phase 5 Off Site Properties	Halsted Corporation (78 Halladay St) (PPG)	PPG Owned	June 2018	June 2018	July 2019	September 2019	March 2020	April 2021	By agreement of all parties, Al Smith Moving will vacate the Al Smith Moving building and relocate its operations to the Halsted building on or before July 31, 2016, to allow for PDI, demolition, and remediation activities within the Al Smith Moving Building. By further agreement of the parties, assuming the Al Smith Moving Building requires demolition, Al Smith Moving will vacate the Halsted Building on or before the last day of October, 2017. PPG and Al Smith Moving have entered a legally binding agreement that requires that Al Smith Moving vacate the Halsted Building as of such date. At such time, remediation activities at the Halsted Building shall continue. When Al Smith Moving vacates the Halsted Building it will move to another location. Halsted remediation activities are to be completed in conjunction with remediation of Halladay Street North. Restoration to be implemented upon direction of NJDEP following the completion of all of the following activities related to the Capillary Rise Study: completion of test cell observations for Fall 2015, Winter 2016, Spring 2016, and Summer 2016, at a minimum; Capillary Rise Study Report to be submitted to NJDEP by December 31, 2016; NJDEP makes determination of capillary break methodology by March 31, 2017.

Group/Phase or Site (See Figure 1 dated as of 7/19/16)	Property Description (Owner) (See Figure 2 dated as of 7/19/16)	Access/Road Closure Plan	Ready for Excavation Actual OR Required	Excavation Start Actual OR Required	Excavation Complete Actual OR Required	Backfill Complete Actual OR Required	Restoration Complete Actual OR Required	RAR Determination (See Notes)	Comments
GA Group Phase 4 Roadways	Forrest Street Properties 84, 86 and, 90-98 Forrest St and Block 21501, Lot 15 (Caragliano)	Access complete	March 2017	March 2017	July 2017	September 2017	February 2018	March 2019	Restoration to be implemented upon direction of NJDEP following the completion of all of the following activities related to the Capillary Rise Study: completion of test cell observations for Fall 2015, Winter 2016, Spring 2016, and Summer 2016, at a minimum; Capillary Rise Study Report to be submitted to NJDEP by December 31, 2016; NJDEP makes determination of capillary break methodology by March 31, 2017.
	Al Smith Moving (33 Pacific Avenue) (NJEDA c/o Al Smith Moving)	Access Complete	June 2017	June 2017	September 2017	December 2017	February 2018	March 2019	By agreement of all parties, Al Smith Moving will vacate the Al Smith Moving building and relocate its operations to the Halsted building on or before July 31, 2016, to allow for PDI, demolition, and remediation activities within the Al Smith Moving Building. Building 51 (55 Pacific Avenue) was not able to be demolished for structural reasons and remains attached to the Al Smith Moving Building. Building 51 and the soils immediately to the north and west of Building 51 (located within Site 133 East and Site 135 South) will be addressed in connection with the remediation of the Al Smith Moving property. By further agreement of the parties, assuming the Al Smith Moving Building requires demolition, Al Smith Moving will vacate the Halsted Building on or before the last day of October 2017. PPG and Al Smith Moving have entered a legally binding agreement that requires that Al Smith Moving vacate the Halsted Building as of such date. At such time, remediation activities at the Halsted Building shall continue. When Al Smith Moving vacates the Halsted Building it will move to another location. Restoration to be implemented upon direction of NJDEP following the completion of all of the following activities related to the Capillary Rise Study: completion of test cell observations for Fall 2015, Winter 2016, Spring 2016, and Summer 2016, at a minimum; Capillary Rise Study Report to be submitted to NJDEP by December 31, 2016; NJDEP makes determination of capillary break methodology by March 31, 2017.
	Carteret Avenue (Jersey City)	See Comments	TBD (See Comments)	TBD (See Comments)	TBD (See Comments)	TBD (See Comments)	TBD (See Comments)	TBD (See Comments)	Carteret Avenue area/phase includes Carteret Avenue from the intersection with Garfield Avenue through the intersection with Pacific Avenue. The portion of Carteret Avenue from the intersection with Garfield Avenue through the intersection with Halladay Street is closed and will remain closed pending remediation of this roadway. Negotiations have commenced between PPG and the City/MUA concerning the removal of the existing 96" steel combined sewer line within Carteret Avenue and remediation in and around said sewer line. The schedule for remediation of Carteret Avenue will be reevaluated based upon the outcome of the referenced negotiations, and Master Schedule milestones will be established on or before December 31, 2016. Restoration to be implemented upon direction of NJDEP following the completion of all of the following activities related to the Capillary Rise Study: completion of test cell observations for Fall 2015, Winter 2016, Spring 2016, and Summer 2016, at a minimum; Capillary Rise Study Report to be submitted to NJDEP by December 31, 2016; NJDEP makes determination of capillary break methodology by March 31, 2017.
	Halladay Street North (Jersey City)	See Comments	June 2018	June 2018	July 2019	September 2019	March 2020	April 2021	PPG has indicated that the PDI work in Halladay Street North has been completed. If this roadway needs to be closed for additional investigation or remediation activities, PPG will notify the City at least 90 days prior to the date that the roadway needs to be closed. Halladay Street North is to be completed in conjunction with remediation of the Halsted Building. Restoration to be implemented upon direction of NJDEP following the completion of all of the following activities related to the Capillary Rise Study: completion of test cell observations for Fall 2015, Winter 2016, Spring 2016, and Summer 2016, at a minimum; Capillary Rise Study Report to be submitted to NJDEP by December 31, 2016; NJDEP makes determination of capillary break methodology by March 31, 2017.
	Forrest Street (Jersey City)	See Comments	March 2017	March 2017	October 2017	December 2017	December 2018	January 2020	PPG has indicated that the PDI work in Forrest Street has been completed. If this roadway needs to be closed for additional investigation or remediation activities, PPG will notify the City at least 90 days prior to the date that the roadway needs to be closed. Restoration to be implemented upon direction of NJDEP following the completion of all of the following activities related to the Capillary Rise Study: completion of test cell observations for Fall 2015, Winter 2016, Spring 2016, and Summer 2016, at a minimum; Capillary Rise Study Report to be submitted to NJDEP by December 31, 2016; NJDEP makes determination of capillary break methodology by March 31, 2017.

Group/Phase or Site (See Figure 1 dated as of 7/19/16)	Property Description (Owner) (See Figure 2 dated as of 7/19/16)	Access/Road Closure Plan	Ready for Excavation Actual OR Required	Excavation Start Actual OR Required	Excavation Complete Actual OR Required	Backfill Complete Actual OR Required	Restoration Complete Actual OR Required	RAR Determination (See Notes)	Comments
GA Group Phase 4 Roadways	Garfield Avenue (Jersey City)	See Comments	November 2017	November 2017	November 2018	January 2019	April 2019	May 2020	PPG and the City have commenced communications regarding road closure planning for the PDI work to be conducted in Garfield Avenue. If, based upon the PDI work, this roadway needs to be closed for remediation activities, PPG will notify the City at least 90 days prior to the date that the roadway needs to be closed. Restoration to be implemented upon direction of NJDEP following the completion of all of the following activities related to the Capillary Rise Study: completion of test cell observations for Fall 2015, Winter 2016, Spring 2016, and Summer 2016, at a minimum; Capillary Rise Study Report to be submitted to NJDEP by December 31, 2016; NJDEP makes determination of capillary break methodology by March 31, 2017.

Notes:
1) "Ready for Excavation" means access has been gained, building demolition and shoring installation, if required, have been completed, and there are no known impediments to prevent completion of excavation.
2) "Legal remedies will commence" means the initiation of court proceedings.
3) Green shading indicates that milestones have been attained.
4) For Garfield Avenue Group Sites, "Backfill Complete" means backfill is brought to the "pre-capillary break installation" grade of elevation ±11 feet NAVD 88, unless all the Parties agree to an alternate elevation.
5) For the purpose of this Master Schedule, "restoration" is defined as capillary break installation and final remediation grading. In-kind replacement of existing infrastructure and/or improvements removed to implement the remedy for the GAG Sites is the subject of pending mediation between the City and PPG.
6) Restoration within specific areas under/around infrastructure necessary to support on-going remediation may be delayed if such a delay is acceptable to the Department and property owners.
7) For the purpose of this Master Schedule, "RAR Determination" means that the Department will determine whether the Remedial Action Report (RAR) meets the requirements of applicable Department regulations and guidance. The Department will determine whether the milestone identified in the Master Schedule is achieved assuming a complete RAR is received 7 weeks prior to the milestone and the RAR Figures/Tables have been submitted by PPG and reviewed/approved by the Department prior to full RAR submittal. A Draft Consent Judgment Compliance Letter will typically be issued by the Department within 30 business days of the issuance of an RAR approval.
8) This version of the Master Schedule has combined "Exhibit 2" and "Exhibit 3" from the last version of the Master Schedule dated October 13, 2015. The term Exhibits 2/3 is used here because prior orders entered by the court in NJDEP, et al. v. Honeywell International, Inc., et al. reference those exhibits as exhibits to the Master Schedule, which Master Schedule remains in effect as modified by these changes to Exhibits 2 and 3.
9) NJ Transit Right-of-Way (ROW): CCPW located beneath this ROW will be addressed concurrent with Site 199, as part of remediation requirements specified in the 2011 Consent Order (Orphan Sites Agreement).

SOILS - NON-GARFIELD AVENUE SITES

Group/Phase or Site	Property Description (Owner)	Access for Remediation	Ready for Excavation Actual OR Required	Excavation Start Actual OR Required	Excavation Complete Actual OR Required	Backfill Complete Actual OR Required	Restoration Complete Actual OR Required	RAR Determination (See Notes)	Comments
Site 16	45 Linden Ave. East (Etzion)	Access agreement in place	5/6/2014	6/16/2014	November 2020	January 2021	September 2021	October 2022	PPG to conclude analysis of remedial alternatives for the warehouse building, secure the property owner's consent and propose a remedy to NJDEP by September 2018. The milestones for this Site are based on the assumption that the remedy includes building demolition enabling full removal/excavation of contaminated material within the footprint of the building. Some remediation will be required in the street. That remediation will be performed concurrent with the remediation of the building. PPG will notify the City at least 90 days prior to the date that the street needs to be closed.
Site 63	Baldwin Oil (Nisan 12)	Access agreement in place	4/28/2014	4/28/2014	5/19/2015	5/19/2015	6/13/2015	April 2017	The RAR Determination milestone was May 2016 in the October 13, 2015 Master Schedule. RAR determination is contingent on the results of a supplemental investigation, which is scheduled to commence in November 2016 and may indicate additional remediation is required.
Site 65	Burma Road/Morris Pesin Drive (Jersey City)	See Comments	4/28/2014	4/28/2014	December 2016	January 2017	January 2017	February 2018	A Remedial Action Work Plan for remediation of this roadway was submitted to NJDEP in May 2016. PPG and the City are engaged in discussions regarding the remedial approach for this Site, which may impact the milestones for this Site.
Site 107/Site 108	Fashionland (Site 107 - Greenberg)/ Albanil Dyestuff (Site 108 - American Self Storage Liberte, LLC)	107 - In litigation 108 – Access to be obtained by Sept 2016 or legal remedies will commence by October 2016	June 2017	June 2017	June 2018	August 2018	September 2018	August 2019	The Court has ordered that access to Site 107 be provided in February 2017, however other legal issues involving PPG and the property owner are still pending. The Court may permit a 60 day extension past February 2017 at the discretion of Court. If granted, this will impact subsequent milestones by 60 days. Conrail has indicated it will not enter into an access agreement more than 30 days prior to the start of work. Negotiated access for remediation of adjacent Conrail property to be obtained by May 2017 or legal remedies will commence by June 2017. The current NJDEP approved remedial approach is an unrestricted use remedy. If PPG and the Site 107 property owner agree on an alternate remedial approach and an associated deed notice, PPG will seek a revised NJDEP approval within a timeframe that will achieve the excavation start date. The Schedule, however, is based upon the assumption that the remedy includes building demolition enabling full removal/excavation of contaminated material within the footprint of the building. The approved Remedial Investigation Report for Site 108 indicated that the "hotspot" contaminated area on Site 108 was presumed to have emanated from Site 107, and required that remedial action at Site 108 would be performed as part of the Site 107 remedial action. Therefore, Site 108 is to be remediated concurrent with the Site 107 remedial action.
Site 156	Metro Towers (ALMA)	Access agreement in place	3/18/2013	3/18/2013	5/23/2014	5/30/2014	6/30/2014	April 2017	The RAR Determination milestone was October 2016 in the October 13, 2015 Master Schedule. This site is being handled on two different timelines, one for the Boiler Room and one for the Parking Lot Area: Boiler Room: The Remedial Action Work Plan for the Boiler Room was deemed conditionally approved in February, 2016, subject to receipt of a letter from the property owner confirming its consent to engineering controls and a deed notice. Owner consent was provided in the access agreement and previously confirmed by email. Parking Lot Area: RAR Determination by April 2017. RAR determination is contingent on the results of a supplemental investigation which may indicate additional remediation is required.
Site 174	Dennis Collins Park (City of Bayonne)	Access agreement in place until June2017, to be renewed prior to expiration	3/23/2013	4/8/2013	December 2017	December 2017	December 2017	January 2019	Focused excavation of the Park was completed in July 2016. The Parties have agreed to extend the schedule for ISM planning/implementation for various reasons, including the City of Bayonne's plans for redevelopment of the Park. Based on the timing of that redevelopment, the Master Schedule dates may have to be reassessed
Site 186	Garfield Avenue #1	Access no longer required; Remediation Complete	8/19/2013	8/19/2013	11/1/2013	11/1/2013	11/20/2013	4/16/2014	All CCPW has been excavated and the Site restored. A final Consent Order Compliance Letter (NFA equivalent) was issued July 15, 2015.

(see notes on next page)

Notes:
1) “Ready for Excavation” means access has been gained, building demolition and shoring installation, if required, have been completed, and there are no known impediments to prevent completion of excavation.
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3) Green shading indicates that milestones have been attained.
4) For Garfield Avenue Group Sites, “Backfill Complete” means backfill is brought to the “pre-capillary break installation” grade of elevation ±11 feet NAVD 88, unless all the Parties agree to an alternate elevation.
5) For the purpose of this Master Schedule, “restoration” is defined as capillary break installation and final remediation grading. In-kind replacement of existing infrastructure and/or improvements removed to implement the remedy for the GAG Sites is the subject of pending mediation between the City and PPG.
6) Restoration within specific areas under/around infrastructure necessary to support on-going remediation may be delayed if such a delay is acceptable to the Department and property owners.
7) For the purpose of this Master Schedule, “RAR Determination” means that the Department will determine whether the Remedial Action Report (RAR) meets the requirements of applicable Department regulations and guidance. The Department will determine whether the milestone identified in the Master Schedule is achieved assuming a complete RAR is received 7 weeks prior to the milestone and the RAR Figures/Tables have been submitted by PPG and reviewed/approved by the Department prior to full RAR submittal. A Draft Consent Judgment Compliance Letter will typically be issued by the Department within 30 business days of the issuance of an RAR approval.
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9) NJ Transit Right-of-Way (ROW): CCPW located beneath this ROW will be addressed concurrent with Site 199, as part of remediation requirements specified in the 2011 Consent Order (Orphan Sites Agreement).

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GROUNDWATER

(The parties are currently discussing a revision to the Groundwater milestones below. New milestones will be established prior to August 31, 2016.)

Site or Group of Sites	Remedial Investigation Report Submitted	Comments
GA Group	January 2020	On-site and off-site access for groundwater obtained during implementation of soil remedial action. Groundwater RI work complete 1 year following excavation complete. Groundwater RIR and RAWP completion assumed 1 year post-soil remedy completion. Assumes that groundwater contamination does not extend into bedrock.
Site 16	November 2021	On-site and off-site access for groundwater obtained during implementation of soil remedial action. Groundwater RI work complete 1 year following excavation complete. Groundwater RIR and RAWP completion assumed 1 year post-soil remedy completion. Assumes that groundwater contamination does not extend into bedrock.
Site 63 & 65	December 2018	On-site and off-site access for groundwater obtained during implementation of soil remedial action. Groundwater RI work complete 1 year following excavation complete. Groundwater RIR and RAWP completion assumed 1 year post-soil remedy completion. Assumes that groundwater contamination does not extend into bedrock.
Site 107 & 108	June 2019	On-site and off-site access for groundwater obtained during implementation of soil remedial action. Groundwater RI work complete 1 year following excavation complete. Groundwater RIR and RAWP completion assumed 1 year post-soil remedy completion. Assumes that groundwater contamination does not extend into bedrock.
Site 156	May 2017	On-site and off-site access for groundwater obtained during implementation of soil remedial action. Groundwater RI work complete 3 years following excavation complete. Groundwater RIR and RAWP completion assumed 3 years post-soil remedy completion. Assumes that groundwater contamination does not extend into bedrock.
Site 174	April 2018	On-site and off-site access for groundwater obtained during implementation of soil remedial action. Groundwater RI work complete 1 year following excavation complete. Groundwater RIR and RAWP completion assumed 1 year post-soil remedy completion. Assumes that groundwater contamination does not extend into bedrock.
Site 186	Site 186 Groundwater Remedial Investigation incorporated into GAG RIWP	Site 186 groundwater investigation/remedial action is considered part of the Garfield Avenue Group groundwater program.

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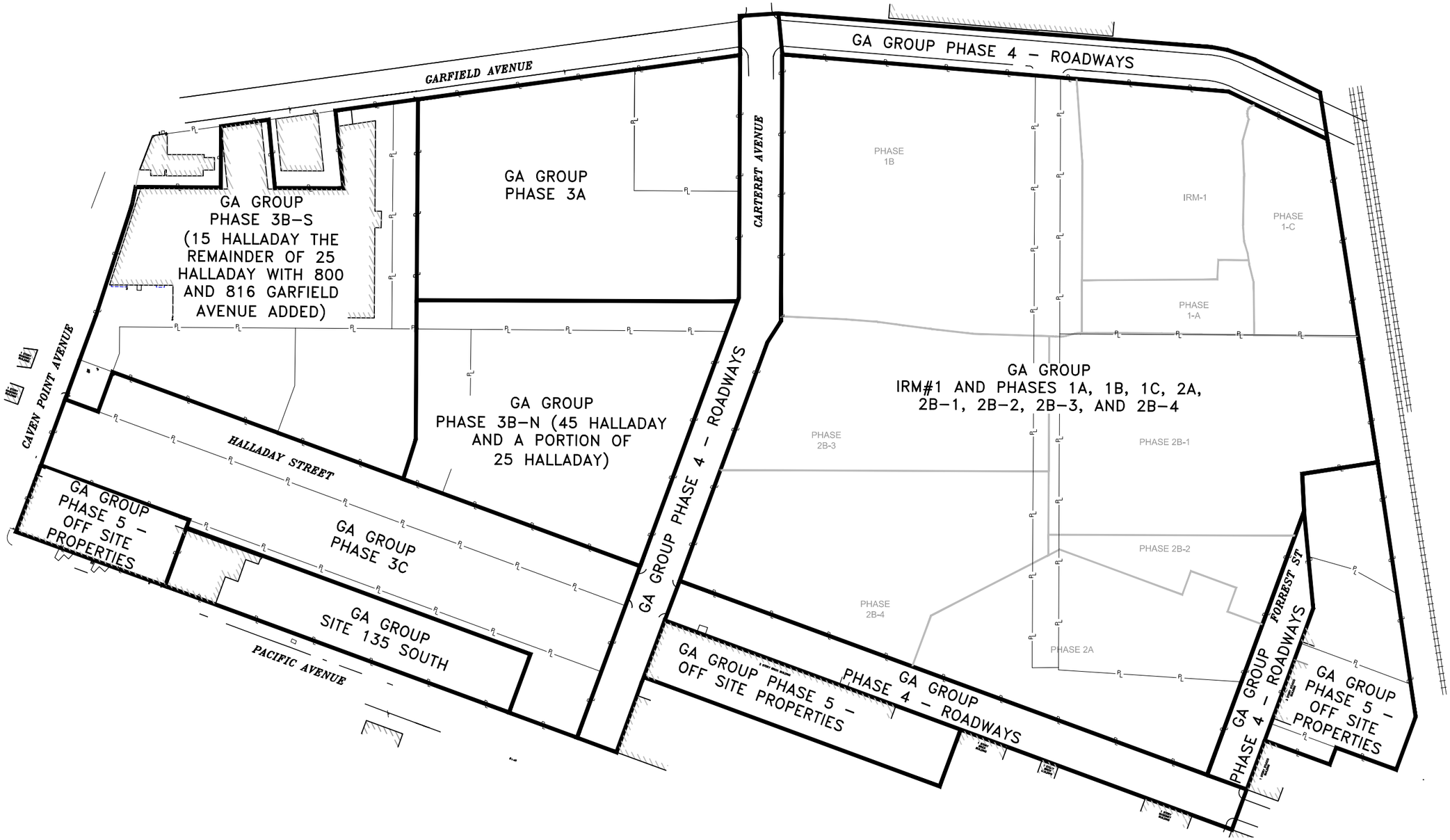
9) NJ Transit Right-of-Way (ROW): CCPW located beneath this ROW will be addressed concurrent with Site 199, as part of remediation requirements specified in the 2011 Consent Order (Orphan Sites Agreement).

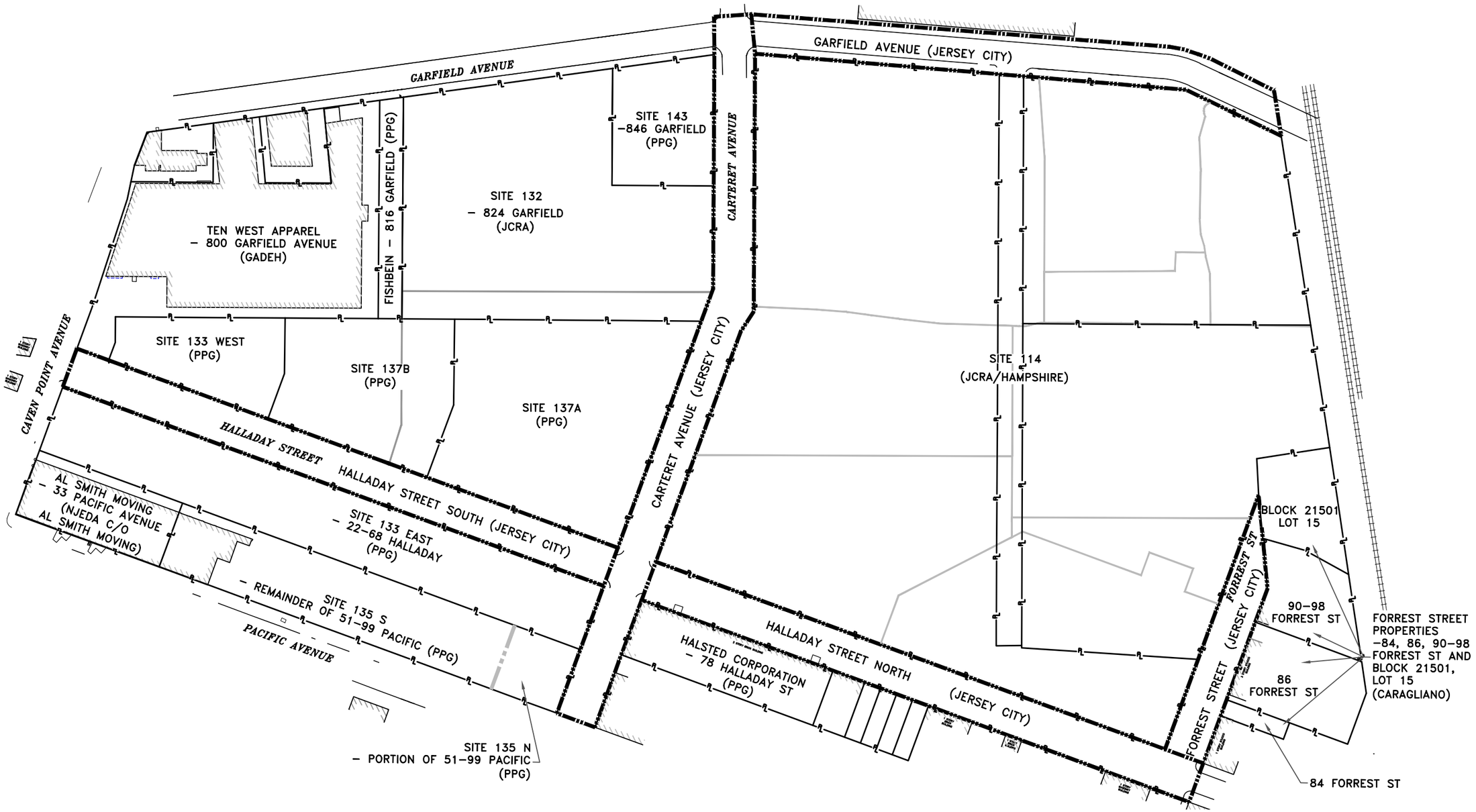


NOTES:

1. FOR OFF SITE PROPERTIES AND ROADWAYS, PROPERTY LINES ARE ESTIMATED BASED ON TAX MAPS. LIMITS ARE INTENDED TO EXTEND TO ACTUAL PROPERTY LINES, TO BE CONFIRMED BY PROFESSIONAL SURVEY PRIOR TO START OF WORK.

AECOM

PPG GARFIELD AVENUE GROUP JERSEY CITY, NEW JERSEY			**GROUP/PHASE OR SITE PLAN**
DATE: 07/19/2016	DRWN: DCB		**FIGURE 1**



LEGEND

SITE DESCRIPTION
– ADDRESS
(OWNER)

NOTES:

1. FOR OFF SITE PROPERTIES AND ROADWAYS, PROPERTY LINES ARE ESTIMATED BASED ON TAX MAPS. LIMITS ARE INTENDED TO EXTEND TO ACTUAL PROPERTY LINES, TO BE CONFIRMED BY PROFESSIONAL SURVEY PRIOR TO START OF WORK.

AECOM

PPG GARFIELD AVENUE GROUP JERSEY CITY, NEW JERSEY			**PROPERTY DESCRIPTION (OWNER) PLAN**
DATE: 07/19/2016	DRWN: DCB		**FIGURE 2**

moving ahead
Chromium Cleanup Partnership
N.J. DEPARTMENT OF ENVIRONMENTAL PROTECTION
CITY OF JERSEY CITY
PPG
COURT-APPOINTED SITE ADMINISTRATOR

Letter from Site Administrator

Significant progress in 2016


Ronald Riccio

By Ronald J. Riccio

When I recently met with a group of top PPG executives at their construction trailer on the Garfield Avenue cleanup sites, I shared a thought with them that has been a primary focus of mine since the day I became site administrator: One day there will be a vibrant community right here where we all are sitting.

Since 2009, when PPG, the New Jersey Department of Environmental Protection and the City of Jersey City agreed on a process for the chromium cleanups, the goal has been the efficient, effective and above all else, safe remediation of sites so residents can enjoy the full potential their neighborhoods offer.

Despite the many complexities inherent in a project of this scale, significant progress was made in 2016, my first year as site administrator. Key 2016 accomplishments include:

- Approximately 47,000 tons of contaminated soil and debris were removed from the Garfield Avenue sites;

continued on page 2

Still much work to be completed at Garfield Ave.

Though PPG has dug up and hauled away approximately 950,000 tons of soil and debris since 2010 at properties along Garfield Avenue, the company still has cleanup obligations at a certain number of chromium sites listed in a 2009 agreement. In addition, the company is investigating or remediating soil at 10 adjacent locations.

Moreover, environmental consultants are now focused on completing the investigation of chromium's impact on the area's groundwater. Groundwater is generally understood to mean water present underground.

continued on page 4


Stefanie Paige collects measurements at a groundwater well on the main Garfield Avenue site.

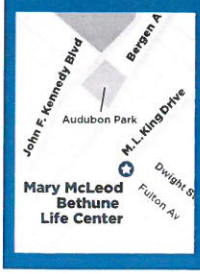
Soil investigations, cleanups continue at locations adjacent to main site

As it continues to dig up and haul away the remaining chromium-impacted soil and debris at sites on Garfield Avenue included in a 2009 agreement, PPG is also investigating and cleaning up soil at adjacent properties.

Interim measures were in place or installed at these properties to prevent exposure until PPG could conduct a cleanup, if needed.

continued on page 3

PUBLIC OPEN HOUSE



DATE: Jan. 31

TIME: 6:30 - 8:30 p.m.

PLACE: Mary McLeod Bethune Life Center, 140 Dr. Martin Luther King Jr. Drive, Jersey City

Receive an update on the status of all sites and then speak one-on-one with subject matter experts.

Final round of blood monitoring confirms exposure prevention works

A report summarizing the results of a voluntary blood monitoring program administered by the Environmental and Occupational Health Sciences Institute (EOHSI) at the Rutgers School of Public Health confirms that the multiple and overlapping measures to prevent human exposure to chromium during PPG's soil cleanup activities at the Garfield Avenue sites have been effective.

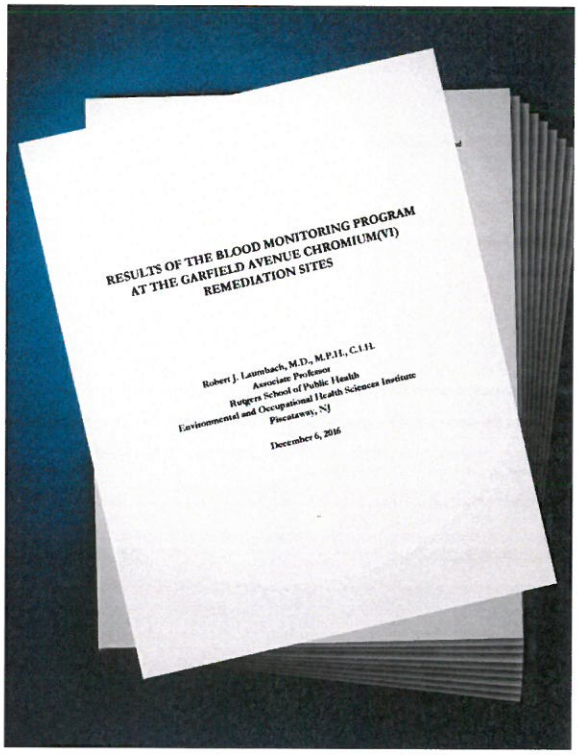
Blood samples collected from 28 residents living in a study area near Garfield Avenue in June and July 2016 showed no detectable levels of chromium. Furthermore, results from the six previous rounds, including the initial testing in 2010, did not find any evidence of an increase in the blood chromium levels of the study area participants, despite digging up and hauling away approximately 1 million tons of chromium-contaminated soil and debris.

"I couldn't be more pleased because safety has been and continues to be our No. 1 priority," said Ron Riccio, the independent, court-appointed site administrator overseeing PPG's chromium cleanups. "These results confirm the cleanup is being conducted in a safe and effective manner."

The protective measures include best management practices such as:

- Setting stringent limits on airborne dust and chromium;
- Monitoring air quality 24/7;
- Water misting work areas to suppress dust;
- Spraying surfaces with dust-suppression materials;
- Pressure-washing trucks in a protected area before exiting site; and
- Covering open excavations and stockpiles when not being worked.

To determine baseline blood chromium concentrations, blood samples were collected from community volunteers living in the study area established under the blood monitoring program before the excavation began in July 2010. As planned in the blood monitoring program, samples were then collected annually, including 2016, the final year of the study. Under program guidelines, samples were collected and analyzed by an independent laboratory.


RESULTS OF THE BLOOD MONITORING PROGRAM
AT THE GARFIELD AVENUE CHROMIUM(VI)
REMEDIATION SITES

Robert J. Laumbach, M.D., M.P.H., C.I.H.
Associate Professor
Rutgers School of Public Health
Environmental and Occupational Health Sciences Institute
Piscataway, NJ

December 6, 2016

Dr. Robert J. Laumbach of EOHSI said in his report that the results from the six-year study "support the conclusion that the work practices, dust suppression activities and the air monitoring program for controlling potential exposures to Chromium(VI) during the site remediation activities provided effective protection for residents in the Study Area."

In a series of public meetings conducted before the excavation began, residents had recommended the blood study be conducted to monitor potential chromium exposure to residents.

Progress in 2016 continued from page 1

- Berry Lane Park, Jersey City's newest and largest city-owned park, was opened in June, made possible in part by the excavation and removal of chromium at two PPG cleanup sites;
- The seventh and final round of the voluntary blood sampling program confirmed that the multiple and overlapping measures to prevent human exposure to hexavalent chromium during PPG's soil cleanup at the Garfield Avenue sites has been effective;
- Results from air monitoring at the cleanup sites show air quality remained well within strict safety limits developed by NJDEP scientists;
- Two public meetings provided residents with an update on cleanup activities and an opportunity for them to share their thoughts. A third meeting will take place Jan. 31 at the Bethune Center;
- Residential properties near PPG cleanup sites continue to be inspected and show no signs of chromate chemical production waste at any of the more than 30 homes inspected and the more than 20 homes where samples have been collected since the program's inception in 2010;
- Interim measures in place at cleanup sites that have yet to undergo final remediation continue to be regularly inspected to ensure against exposure risk to chromium; and
- PPG conducted an excavation at Dennis Collins Park in Bayonne. City officials and PPG are coordinating the remaining cleanup commitments with renovations to the park that are planned by the city.

Though much work remains, I am confident that all the parties to the 2009 agreement are committed to fulfilling their obligations in a safe and timely manner, which will give rise to something special that people along Garfield Avenue and locations throughout Jersey City and Bayonne can enjoy for generations to come.

Chromium Cleanup
Partnership

P.O. Box 15981, Jersey City, N.J. 07305

Telephone: 201-777-2099

E-mail: info@chromecleanup.com

Website: www.chromecleanup.com

Mailing: JON-DA Printing Company Inc.

Chromium cleanups benefit two public parks

PPG's chromium cleanups played a positive role for two city parks in 2016.

Dennis Collins Park

From April to June, PPG excavated approximately 7,300 tons of chromium-impacted soil from Bayonne's Dennis Collins Park. At the request of the court-appointed site administrator, PPG began this work about one year ahead of schedule. Furthermore, PPG is in discussions with the city on ways the company can coordinate its remaining environmental remediation commitments with renovations planned for the park.

Soil was excavated mainly near the bath rooms and under one of the basketball courts, which PPG replaced.

Investigations at the park, meanwhile, indicate that scattered and low concentrations of chromate chemical production waste, or CCPW, remain below the ground surface between Avenue C and Island View Court. A series of interim measures have been implemented to prevent direct contact or airborne exposure to the CCPW. Furthermore, these measures are inspected monthly by PPG and representatives from NJDEP.

Officials from the City of Bayonne, PPG, the New Jersey Department of Environmental Protection and the site administrator's office are exploring methods to address the CCPW and support construction of new amenities at the park.

In the shadow of the Bayonne Bridge, PPG excavated 7,300 tons of soil and debris at Dennis Collins Park and replaced one basketball court.

Berry Lane Park

Meanwhile, the soil remediation of two PPG chromium cleanup sites on Garfield Avenue in Jersey City helped make possible the grand opening of Berry Lane Park in June. Using funds provided by PPG, the Jersey City Redevelopment Agency completed the excavation of chromium-impacted soil in and around the former Morris Canal in 2013. Berry Lane Park is the largest municipal park in Jersey City. All chromium-impacted soil and debris was removed and replaced with clean fill.

Soil investigations, cleanups continued from page 1

The adjacent properties include:

33 Pacific Ave. – PPG completed its investigation of this property in the fall of 2016, and is reviewing the data to develop an appropriate remediation approach.

51 Pacific Ave. – Elevated levels of chromium were discovered beneath the building at this address. As a result, the building was demolished in November and the excavation is expected to be complete early this year.

51B-99 Pacific Ave. – PPG demolished this row of buildings and completed its chromium excavation in August 2016. The excavation for non-chromium impacts, including mercury, was completed in November 2016.

78 Halladay Street – PPG completed the investigation of this property in the spring of 2016. No CCPW was found beneath the building at this site but elevated levels of chromium were detected in its foundation. The owner of 33 Pacific has relocated to this building while its property is undergoing investigation and remediation. PPG plans to demolish the building at 78 Halladay Street when vacant and then excavate chromium-impacted soil and debris.

457 Communipaw Ave. – PPG is working with the property owner to obtain access to complete an investigation of this property by this spring. CCPW identified in an immediately adjacent site was fully remediated in the spring of 2016.

800 Garfield Ave. – CCPW was identified in the soil beneath the building located at this address and properties adjacent to it, including 816 Garfield Avenue. PPG is in litigation with the owner of 800 Garfield Ave., to secure access so it can fulfill its cleanup obligations.

Carteret Avenue – CCPW was identified in the soil under this street between Garfield Avenue and Pacific Avenue. PPG is in discussions with the city about the timing and method of remediation because a sewer line lies beneath this roadway.

Forrest Street/Forrest Street Properties - CCPW was identified in the soil under the roadway between 90 and 98 Forrest Street. In addition, CCPW was identified in accessible areas near the buildings along this roadway, though it has not been identified underneath them. PPG expects to begin excavation this spring.

Garfield Avenue – PPG expects to complete its delineation of this roadway between Carteret Avenue and the Hudson Bergen Light Rail overpass early this year. Like Carteret Avenue, this street has a sewer line and other utilities beneath it. As a result, PPG is in discussions with the city on the method and timing of a remediation.

Halladay Street – CCPW has been discovered under this roadway between Carteret Avenue and Forrest Street. PPG plans to excavate this material at the same time it conducts its cleanup at 78 Halladay.

Master schedule keeps stakeholders focused on completion of cleanups

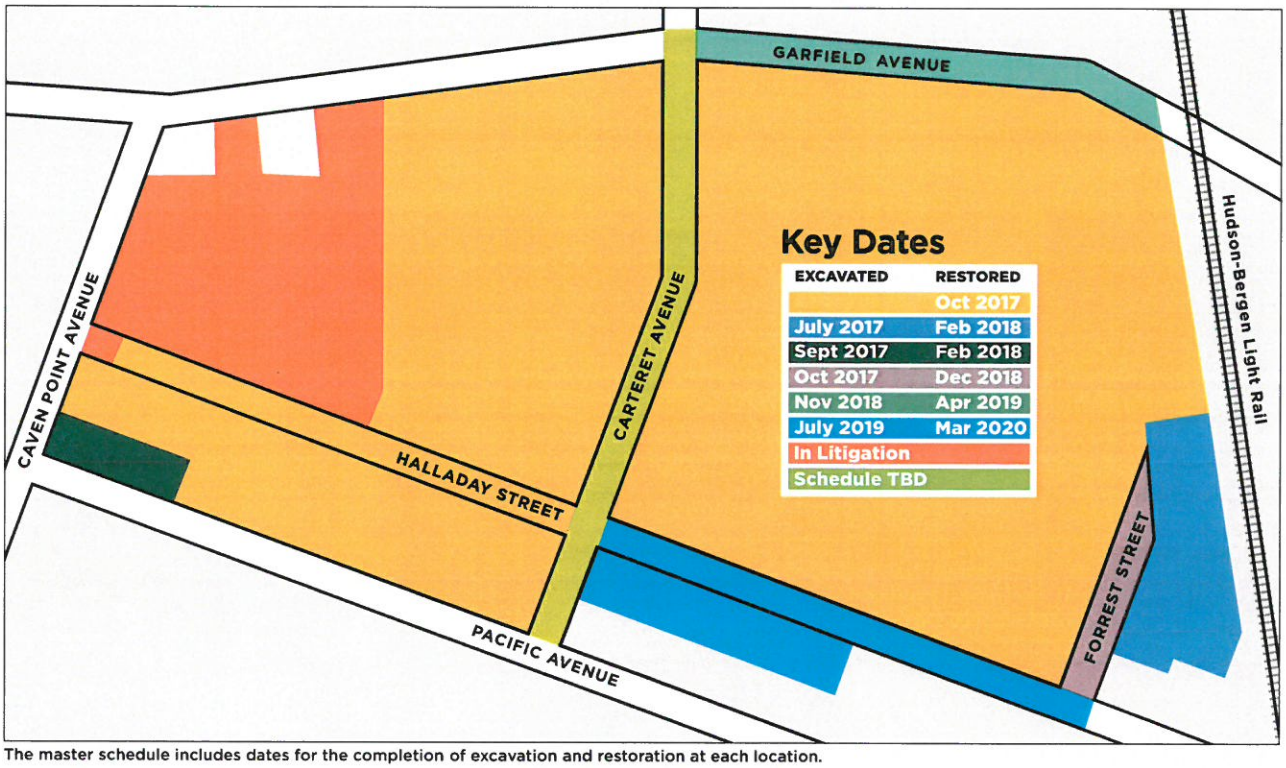
Developing and adhering to a master schedule for the completion of PPG's chromium cleanup commitments is one of the key responsibilities of the independent, court-appointed site administrator.

The schedule has undergone three revisions since the June 2009 agreement among PPG, the New Jersey Department of Environmental Protection and the City of Jersey City on a process for the cleanup of chromium sites in Hudson County.

The most recent version of the schedule was established in July when it was submitted to Superior Court Judge Barry P. Sarkisian.

"Sometimes changes are required because of unforeseen circumstances," said Ron Riccio, the site administrator. "Things such as weather, difficulties in excavation and even litigation can create the need to alter the schedule. Nonetheless, the schedule is designed to keep all the stakeholders focused on the completion of this important work."

Two of the most significant milestones on the master schedule are the deadlines for the completion of excavation and restoration at each site. The completion of excavation signals the end of digging up and hauling away chromium-impacted soil and debris. The completion of restoration means the site has been returned to a mutually agreed upon condition, including final grading.



The master schedule includes dates for the completion of excavation and restoration at each location.

Garfield Avenue continued from page 1

Technicians are evaluating data collected from an extensive network of groundwater monitoring wells at the cleanup sites and nearby locations. It's important to note that no groundwater in Jersey City is used for drinking water.

Though more work remains on the groundwater investigation, the prior soil remediation has improved groundwater quality. With few exceptions, groundwater to a depth of approximately 20 feet below ground surface at the Garfield Avenue sites meets the New Jersey Department of Environmental Protection's groundwater quality standards for chromium in those areas.

PPG has also successfully demonstrated two groundwater remediation methods. Both reduce hexavalent chromium, the key ingredient in chromate chemical production waste, into a trivalent state, which is benign. One cleanup method involves pumping calcium polysulfide or a proprietary blend of ferrous sulfide into the groundwater. In the second method, diluted molasses is pumped into the groundwater. That's right. The thick, dark brown syrup extracted from raw sugar during the refining process can remediate a toxic heavy metal. The molasses provides food for naturally occurring microbes that biologically reduce hexavalent chromium.

La programación principal mantiene a los agentes centrados en la culminación de las obras de limpieza

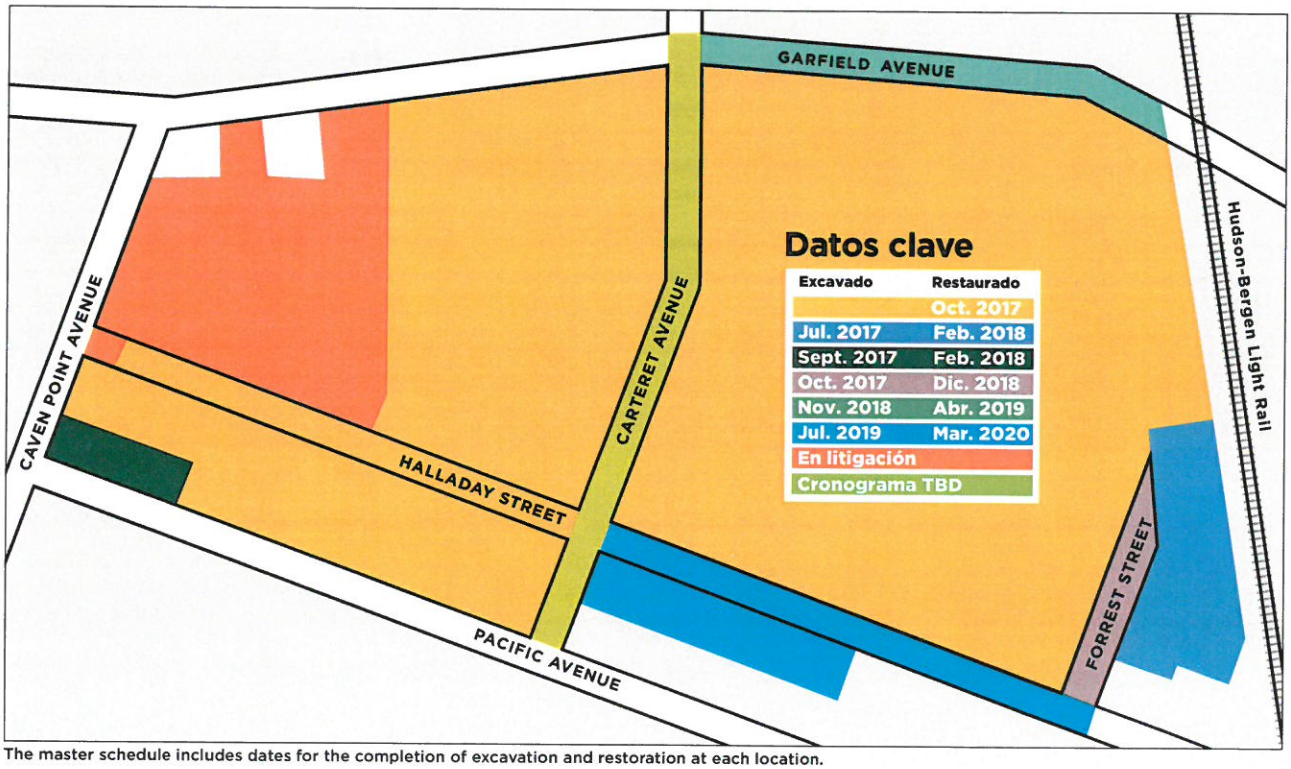
Desarrollar y ajustarse a una programación principal para la culminación de los compromisos de saneamiento de las áreas contaminadas por cromo es una de las principales responsabilidades del administrador independiente nombrado por el tribunal.

La programación ha experimentado tres revisiones desde el acuerdo de junio de 2009 entre la PPG, el Departamento de Protección Ambiental de Nueva Jersey y la ciudad Jersey City en un proceso para la limpieza de los lugares contaminados por cromo en el condado Hudson.

La versión más reciente de la programación se estableció en julio cuando se le entregó dicha versión al Juez del Tribunal Superior, Barry P. Sarkisian.

"Algunas veces se necesitan cambios para afrontar las circunstancias imprevistas", dijo Ron Riccio, administrador del sitio. "Situaciones como el clima, las dificultades en la excavación e incluso los litigios crean la necesidad de alterar la programación. Sin embargo, la programación está diseñada para mantener a todos los agentes interesados centrados en la culminación de este importante trabajo".

Dos de los hitos más significativos de la programación principal son los plazos para la culminación de la excavación y la restauración de cada lugar. La culminación de la excavación señala el fin de la extracción y remoción de la tierra contaminada por cromo, así como de los escombros. La culminación de la restauración indica que el lugar volvió a la condición acordada mutuamente, incluyendo la calificación final.



The master schedule includes dates for the completion of excavation and restoration at each location.

Garfield Avenue

Continuación de la página 1

El personal técnico está evaluando la información recopilada de una amplia red de pozos de control de aguas subterráneas en las áreas de limpieza y en los lugares cercanos. Es importante mencionar que en Jersey City no se utilizan aguas subterráneas como agua potable.

Aunque aún queda mucho trabajo sobre el estudio de las aguas subterráneas, la rehabilitación de los suelos previa ha mejorado la calidad de las aguas subterráneas.

Con pocas excepciones, las aguas subterráneas a una profundidad de aproximadamente 20 pies por debajo de la superficie terrestre en los lugares de Garfield Avenue cumplen con los estándares de calidad de los niveles de cromo en aguas subterráneas del Departamento de Protección Ambiental de Nueva Jersey. PPG ha demostrado, de forma exitosa, dos métodos de rehabilitación de aguas subterráneas. Ambos métodos reducen el cromo hexavalente, el ingrediente clave en los desechos de producción química de cromato, hacia un estado trivalente, que es benigno. El primer método de limpieza comprende el bombeo de polisulfuros de calcio o una mezcla de sulfuro férrico del propietario hacia el agua subterránea. En el segundo método, se bombea melaza diluida hacia la tierra. Así es. El sirope espeso de color marrón oscuro que se extrae del azúcar en bruto durante el proceso de refinación puede rehabilitar un metal pesado tóxico. La melaza produce alimento para los microbios producidos de manera natural que reducen el cromo hexavalente biológicamente.

El saneamiento de las áreas contaminadas por cromo beneficia a dos parques públicos

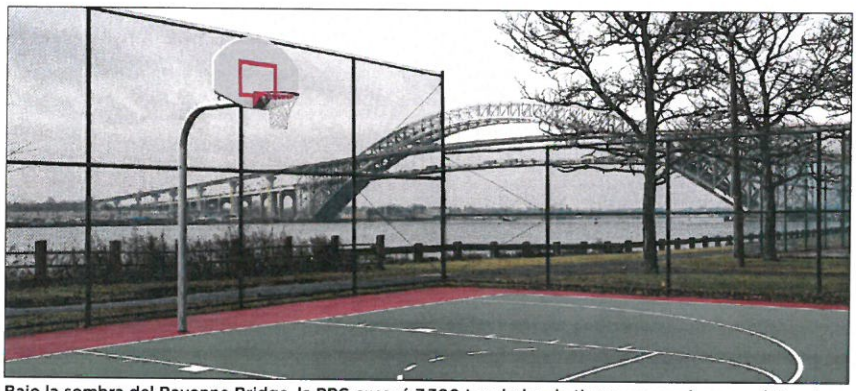
El saneamiento de las áreas contaminadas por cromo que lleva a cabo la PPG tuvo una función positiva para dos parques de la ciudad en el año 2016.

Parque Dennis Collins
Desde abril a junio, la PPG removió aproximadamente 7 300 toneladas de tierra contaminada por cromo del parque Dennis Collins de la ciudad de Bayonne. La PPG comenzó este trabajo un año antes de lo previsto bajo la solicitud del administrador independiente del sitio nombrado por el Tribunal.

Además, la PPG se encuentra en conversaciones con representantes de la ciudad acerca de las formas en que la compañía puede coordinar los compromisos de rehabilitación ambiental restantes junto con las renovaciones planificadas para el parque.

La tierra se excavó principalmente cerca de los baños y debajo de una de las canchas de básquetbol que la PPG reemplazó.

Mientras tanto, los estudios en el parque indican que las concentraciones bajas y dispersas de restos de cromatos por desechos de producción química o CCPW permanecen debajo de la superficie terrestre entre Avenue C y Island View Court.



Bajo la sombra del Bayonne Bridge, la PPG excavó 7.300 toneladas de tierra y escombros en el Dennis Collins Park, y reemplazó una cancha de baloncesto.

Se ha implementado una serie de medidas provisionales para prevenir el contacto directo y la exposición a través del aire a los CCPW. Además, la PPG y representantes del NJDEP inspeccionan mensualmente estas medidas. Oficiales de la ciudad de Bayonne, la PPG, el Departamento de Protección Ambiental de Nueva Jersey y la oficina del administrador del sitio están buscando métodos para abordar los CCPW y respaldar la construcción de los nuevos servicios en el parque.

Berry Lane Park

Entretanto, la rehabilitación del suelo de dos sitios de limpieza de cromo de la PPG en Garfield Avenue en Jersey City permitió que se realizara la gran inauguración del parque Berry Lane en junio. La Agencia para la Reurbanización de la Ciudad de Jersey usó los fondos suministrados por la PPG para finalizar la excavación de los suelos contaminados por cromo en el antiguo Morris Canal y sus alrededores en 2013. Berry Lane es el parque municipal más grande en Jersey City. Toda la tierra contaminada por cromo y los escombros se removieron y se sustituyeron por relleno limpio.

Estudios de suelos, obras de limpieza continuación de la página 1

Las propiedades adyacentes comprenden las siguientes zonas:

33 Pacific Ave. – la PPG finalizó sus estudios en esta propiedad en otoño de2016 y, actualmente, se encuentra revisando la información para desarrollar un modelo adecuado de rehabilitación.

51 Pacific Ave. - Se descubrieron niveles elevados de cromo debajo del edificio de esta zona. En consecuencia, se demolió el edificio en noviembre y se espera que la excavación finalice a principios de este año.

51B-99 Pacific Ave. – PPG realizó la demolición de este conjunto de edificios y finalizó la excavación para remover el cromo en agosto de 2016. La excavación por contaminación no crómica, incluyendo mercurio, finalizó en noviembre de 2016.

78 Halladay Street - La PPG finalizó el estudio en esta propiedad en primavera de 2016. No se encontraron CCPW debajo del edificio de esta zona. Sin embargo, se detectaron altos niveles de cromo en sus cimientos. El propietario de 33 Pacific se reubicó en este edificio mientras su propiedad está en pleno estudio y rehabilitación. La PPG planea demoler el edificio en 78 Halladay Street, cuando se desaloje el área y se proceda a excavar la tierra contaminada por cromo y los escombros.

457 Communipaw Ave. – PPG está trabajando conjuntamente con el dueño de la propiedad para conseguir el ingreso para llevar a cabo el estudio de esta propiedad para la próxima primavera. Los CCPW identificados en un lugar inmediatamente adyacente se rehabilitaron por completo en la primavera del año 2016.

800 Garfield Ave. - Los CCPW se localizaron en la tierra debajo del edificio ubicado en esta dirección y en propiedades cercanas, incluyendo 816 Garfield Avenue. La PPG se encuentra en litigios con el propietario de 800 Garfield Ave., para conseguir el acceso para poder llevar a cabo las obligaciones de limpieza.

Carteret Avenue - Los CCPW se localizaron en la tierra debajo de esta calle entre Garfield Avenue y Pacific Avenue. La PPG se encuentra en conversaciones con los representantes de la ciudad acerca del tiempo y el método de rehabilitación debido a que la línea de alcantarillado se encuentra debajo de esta vía.

Forrest Street/propiedades de Forrest Street – Los CCPW se localizaron en la tierra debajo de la vía entre 90 y 98 Forrest Street. Además, los CCPW se localizaron en la tierra debajo de las áreas accesibles cerca de los edificios ubicados a lo largo de esta vía, aunque no se localizaron debajo de ellos. La PPG espera comenzar la excavación a finales del primer trimestre del año.

Garfield Avenue – La PPG espera completar el trazado de esta calzada entre Carteret Avenue y la pasarela Hudson Bergen Light Rail para principios de este año. Al igual que Carteret Avenue, por debajo de esta calle se encuentra una línea de alcantarillado y otros servicios. En consecuencia, la PPG se encuentra en conversaciones con representantes de la ciudad acerca del método y el tiempo de la rehabilitación.

Halladay Street - Los CCPW se descubrieron debajo de esta vía entre las avenidas Carteret y Forrest Street. La PPG planea remover este material a través de la excavación paralelamente con las obras de limpieza en 78 Halladay.

Fase final de control de muestras de sangre confirma que la prevención a la exposición funciona

Un informe que resume los resultados del programa voluntario de control de muestras de sangre realizado por el Instituto de Ciencias de la Salud Ocupacional y Ambiental (Environmental and Occupational Health Sciences Institute, EOHSI) en la Escuela Rutgers de Salud Pública confirma que las medidas múltiples y simultáneas para prevenir la exposición humana al cromo durante las actividades de limpieza de desechos de la PPG en la Avenida Garfield han sido eficaces.

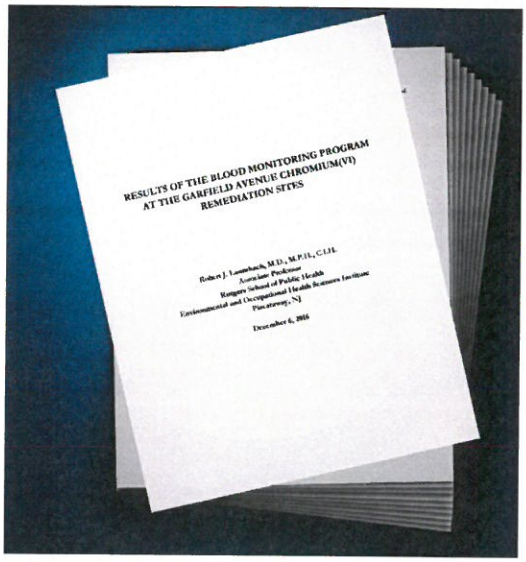
Las muestras de sangre, recolectadas de 28 residentes que viven en el área de estudio cerca de la Avenida Garfield en los meses de junio y julio de 2016, no mostraron niveles detectables de cromo. Además, los resultados de las seis fases previas, incluyendo la prueba inicial en 2010, no evidenciaron ningún incremento en los niveles de cromo en sangre en los participantes del área de estudio, a pesar de haber excavado y removido aproximadamente 1 millón de toneladas de desechos y restos contaminados con cromo.

"No podría estar más satisfecho, ya que la seguridad ha sido y sigue siendo nuestra primera prioridad" dijo Ron Riccio, el administrador independiente del sitio designado por el tribunal para supervisar las actividades de limpieza de cromo de PPG. "Estos resultados confirman que la limpieza se está realizando de forma segura y eficaz".

Las medidas de protección incluyen mejores prácticas de gerencia, tales como:

- Definición de límites rigurosos en cuanto al polvo y al cromo en el aire;
- Supervisión permanente (24/7) de la calidad del aire;
- Riego por nebulización en zonas de trabajo para eliminar el polvo;
- Rocío de superficies con materiales supresores de polvo;
- Camiones hidrolimpiadores en zonas protegidas antes de salir del sitio; y
- Cubrimiento de excavaciones abiertas y reservas donde no se esté trabajando.

Para determinar la línea base de las concentraciones de cromo en sangre, se recolectaron muestras de sangre de los voluntarios de la comunidad que viven en el área de estudio establecida bajo el programa de control de muestras de sangre antes del inicio de la excavación en el mes de julio de 2010. De conformidad con lo planificado en el programa de control de muestras de sangre, las muestras se recolectaron anualmente, incluyendo el 2016, el año final del estudio. De acuerdo con los lineamientos del


RESULTS OF THE BLOOD MONITORING PROGRAM
AT THE GARFIELD AVENUE CHROMIUM(VI)
REMEDIATION SITES

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Piscataway, NJ

December 6, 2016

programa, un laboratorio independiente estuvo recopilando y analizando las muestras.

El Dr. Robert J. Laumbach del EOHSI dijo en su informe que los resultados del estudio de seis años "avalan la conclusión de que las prácticas de trabajo, las actividades de supresión de polvo y el programa de supervisión del aire para el control de la exposición potencial al cromo (VI) durante las actividades de limpieza del sitio constituyeron una protección eficaz para los residentes en el área de estudio".

En la serie de reuniones públicas realizadas antes del inicio de la excavación, los residentes habían recomendado que se realizara un estudio de muestras de sangre para supervisar la exposición potencial al cromo de los residentes.

en 2016 Continuación de la página 1

perteneciente a la ciudad fue posible, en parte, gracias a la excavación y remoción del cromo en dos sitios de limpieza de la PPG;

- La séptima y última fase del programa voluntario de toma de muestras de sangre confirmó que las múltiples y simultáneas medidas para prevenir la exposición de personas al cromo hexavalente durante las obras de limpieza de la tierra de PPG en los lugares de Garfield Avenue han sido efectivas;
- Los resultados de la supervisión aérea en los sitios de la limpieza muestran que la calidad del aire se mantuvo dentro de los límites de estricta seguridad desarrollados por científicos del NJDEP;
- dos reuniones públicas les brindaron a los residentes la actualización sobre las actividades de saneamiento y la oportunidad de compartir sus reflexiones. Una tercera reunión se llevará a cabo el 31 de enero en Bethune Center;
- Se siguen inspeccionando las propiedades residenciales cerca de los sitios de limpieza de la PPG y los resultados muestran que no hay presencia de desechos de producción química de cromato en ninguna de las más de 30 casas estudiadas ni en ninguna de las más de 20 casas donde se tomaron las muestras al inicio del programa en el año 2010;
- Las medidas provisionales que se aplican en los sitios de limpieza que aún no se han sometido a la rehabilitación final se siguen inspeccionando con regularidad a fin de asegurar que no exista el riesgo de exposición al cromo; y
- La PPG realizó una excavación en el parque Dennis Collins de la ciudad de Bayonne. Oficiales de la ciudad y representantes de la PPG están coordinando los compromisos restantes de limpieza junto con las renovaciones del parque que planifica la ciudad.

Aunque aún tenemos mucho trabajo por delante, confío en que todas las partes del acuerdo del año 2009 están comprometidas con el cumplimiento de sus obligaciones de forma segura y oportuna, lo cual dará lugar a algo especial que las personas de

Garfield Avenue y las localidades de toda la ciudad de Jersey City y Bayonne puedan disfrutar para las próximas generaciones.

Chromium Cleanup
Partnership

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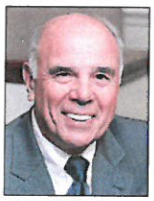
JON-DA Printing Company Inc.

moving ahead
Chromium Cleanup Partnership
N.J. DEPARTMENT OF ENVIRONMENTAL PROTECTION
CITY OF JERSEY CITY
PPG
COURT-APPOINTED SITE ADMINISTRATOR

Carta del administrador del sitio

Progreso significativo en el año 2016


Ronald Riccio

Por Ronald J. Riccio

Recientemente, cuando me reuní con un grupo de importantes ejecutivos de la PPG en su remolque de construcción ubicado en los sitios de limpieza de Garfield Avenue compartí con ellos una reflexión que ha sido mi objetivo principal desde el día en que me convertí en administrador de sitio: "algún día habrá una comunidad activa justo en este lugar donde estamos todos sentados". Desde el año 2009, cuando la PPG, el Departamento de Protección Ambiental de Nueva Jersey y la ciudad de Jersey City acordaron un proceso de limpieza de las tierras contaminadas por cromo, el objetivo ha sido la rehabilitación eficiente, efectiva y, sobre todo, segura de los sitios para que los residentes puedan disfrutar el potencial completo que sus comunidades ofrecen. A pesar de las muchas complejidades inherentes a un proyecto de esta escala, se hizo un progreso significativo en el año 2016, que fue mi primer año como administrador de sitio. Los logros clave en 2016 incluyeron:

- 47,00 toneladas de tierras contaminadas y escombros se retiraron de los sitios en Garfield Avenue;
- El parque Berry Lane, el progreso más reciente de Jersey City y la inauguración en el mes de junio del parque más grande

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Más proyectos por completar en Garfield Ave.

A pesar de que PPG ha excavado y transportado aproximadamente 950,000 toneladas de tierra y escombros desde 2010 en las propiedades en Garfield Avenue, la compañía aún tiene ciertas obligaciones de limpieza en algunos sitios con restos de cromo enumerado en un acuerdo en el 2009.

Además, la compañía continúa realizando estudios o rehabilitando el suelo en 10 lugares adyacentes.

También, los consultores ambientales ahora están centrados en finalizar el estudio de la contaminación por cromo en las aguas subterráneas del área, estas últimas entendidas generalmente como el agua presente debajo de la superficie de la tierra.

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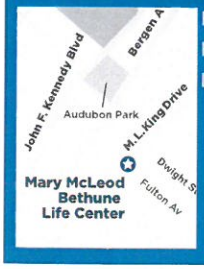
Stefanie Paige recopila datos de mediciones en un pozo de aguas subterráneas en el recinto principal de Garfield Av.

EVENTO PÚBLICO:



FECHA: 31 de enero

HORA: 6:30 a 8:30 p.m.

LUGAR: Mary McLeod Bethune Life Center, 140 Dr. Martin Luther King Jr. Drive, Jersey City

Reciba la actualización del estado de todos los sitios y converse personalmente con los expertos en la materia.

Los estudios de suelos y las obras de limpieza continúan en los lugares cercanos al sitio principal

Mientras continúan las excavaciones y la remoción de la tierra restante contaminada por cromo y los escombros en Garfield Avenue incluidos en el acuerdo de 2009, PPG también está estudiando y limpiando la tierra en las propiedades adyacentes.

Se adoptaron medidas provisionales instaladas en estas propiedades a fin de prevenir la exposición hasta que la PPG pueda realizar una limpieza si es necesario.

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RESULTS OF THE BLOOD MONITORING PROGRAM AT THE GARFIELD AVENUE CHROMIUM(VI) REMEDIATION SITES

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December 6, 2016

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I. Background

Jersey City has a long history of chromium processing and the use of chromate chemical production waste (CCPW), a by-product generated from the production of sodium dichromate, as construction fill material. Also known as chromium ore processing residue (COPR), CCPW contains hexavalent chromium (referred to herein as "chromium(VI)" or "CR (VI)"), which can cause lung cancer in humans and has been linked to other health effects, such as respiratory and skin conditions. PPG Industries, Inc. (PPG) operated a chromium production facility located at Garfield Avenue in Jersey City.

On June 26, 2009, a Partial Consent Judgment Concerning the PPG Sites (JCO) was entered with the Superior Court of New Jersey, binding PPG, the New Jersey Department of Environmental Protection (NJDEP), and the City of Jersey City (City) to work together to remediate certain chromium sites in Hudson County. One of those sites was formerly used as a chrome production facility located at and/or near 880 Garfield Avenue, Jersey City, Hudson County, New Jersey and that is identified in the JCO as the "Garfield Avenue Site."

Pursuant to the JCO, the Court appointed an independent Site Administrator, W. Michael McCabe, to oversee the remediation, including developing a judicially enforceable 5-year master schedule, facilitating parties' progress in meeting master schedule milestones, hiring an independent technical consultant, maintaining regular communications with community representatives, and communicating community concerns to the parties.

A specific provision of the JCO required the Site Administrator to

> *"Review previous and ongoing health studies concerning the health impacts of chromium in Hudson County and consult with experts in the field and, if necessary, to recommend a protocol for a medical study (health exposure study), that would monitor the people living within the vicinity of the Garfield Avenue Site to ascertain chromium exposure risks..."* (Partial Consent Judgment Concerning The PPG Sites (Civil Action No.: HUD-C-77-05), June 26, 2009, p. 18, XVI. 49 (g))

In May of 2010, the Site Administrator produced a document titled "Health Exposure Study Recommendation." In this report, Site Administrator McCabe reviewed studies of exposure to chromium (VI) and possible health effects in Jersey City, Hudson County, other exposed communities in the U.S. and abroad, and occupational settings, as well as studies of the sources and toxicology of chromium (VI). The Site Administrator reviewed relevant scientific literature and consulted with close to 20 experts, including scientists at Robert Wood Johnson Medical School, New York University, and NJDEP, among others. Based on evidence from this review, the Site Administrator recommended a "Community Exposure Prevention and Testing Program" consisting of the following three components:

> *The recommended program will be three-tiered: 1) a comprehensive Air Monitoring Program to ensure the protection of the surrounding community during the remediation of the Garfield Avenue Site; 2) an accompanying health exposure program to determine whether the community is being exposed to Cr(VI) related to the site cleanup; and 3) a mapping project using results from the Residential Inspection Program established by the settlement to outline areas of soil contamination, if detected. (pg. 9)*

Here, we summarize results of the second tier of the Program, i.e., the "health exposure program to determine whether the community is being exposed to Cr(VI) related to the site cleanup."

The second tier of the Program was a voluntary program open to all residents living in the area from the Garfield Avenue Site west to Ocean Avenue; south to Bayview Avenue and north to Bramhall Avenue (Study Area). As planned, the blood of residents living in the Study Area was to be sampled and analyzed for chromium(VI) before, during and after cleanup activities to determine whether increases of chromium(VI) above levels of concern were observed.

The blood monitoring program was to consist of:

- *An initial screening for chromium level in red blood cells (blood screening) to be completed before any remedial excavation activities are initiated at the Garfield Avenue Site in order to establish a baseline for comparison purposes;*
- *Semi-annual blood screenings throughout the period of land-disturbing remedial activities;*
- *Physical examinations for evidence of medical conditions that indicate a recent exposure to Cr(VI), if red blood cell sampling results are elevated above a level of concern;*
- *Data management and integration of participant blood data with environmental exposure studies data; and*
- *Protections for participant privacy. (pgs. 10-11)*

The blood monitoring program was implemented as planned, but with one modification after consultation between the then Site Administrator and environmental health scientists at the Environmental and Occupational Health Sciences Institute (EOHSI), who conducted the blood monitoring program, i.e., that blood sampling would be performed annually, instead of semi-annually. Sampling periods were selected to coincide with active remediation (soil removal).

On January 4, 2016, Ronald Riccio succeeded Michael McCabe as the court-appointed Site Administrator for the PPG chromium sites. Site Administrator Riccio continued the blood monitoring program. At the present time, much of the CCWP at the Garfield Avenue Site and the adjacent sites that surround it has been removed, although further remediation activities are required and remain to be completed.

II. The Rationale for the Blood Monitoring Program

As noted above, the blood monitoring program was part of a multi-tiered approach to prevent exposure to chromium(VI) among residents in the Study Area during remediation at the Garfield Avenue Site. The primary means of preventing exposure was the institution of work practices and dust suppression to prevent migration of dust and soil contaminated with chromium(VI) from leaving the site. An Air Sampling Program was also instituted to provide continuous verification by air sampling both within the controlled area of the site and at the perimeter of the site. The purpose of the blood monitoringprogram was to confirm that individuals in the Study Area were not being exposed to elevated chromium(VI)levels as a result of the remediation activity. If biological testing showed that individuals in the Study Area were being exposed to chromium(VI), further steps could be taken to identify the route of exposure and eliminate the source or control the exposure.

Chromium is a naturally occurring element found in rocks, animals, plants, soil, and in volcanic dust and gases. Chromium is present in the environment in several different forms (oxidation states). The most common forms are chromium(0), chromium(III), and chromium(VI). Chromium compoundshave no distinctive taste or odor.Chromium(III) occurs naturally in the environment and is an essential nutrient. Chromium(VI) and chromium(0) are generally produced by industrial processes. Chromium(0) is metallic chromium, which is used in steel production. Chromium(VI) and chromium(III) are used for industrial processes such as chrome plating, production of dyes and pigments, leather tanning, and wood preserving. It should be noted that chromium is normally present in blood, urine, and body tissues, because chromium(III) is normally present in foods and it is an essential human dietary element that is often found in vitamin and mineral supplements.Because CCWP is very rich in chromium(VI), and because chromium(VI) is a known human carcinogen, it was agreed to focus attention on identifying exposure to chromium(VI).

Chromium(VI) can enter the body by ingestion, inhalation, and to some extent by skin absorption. After absorption into the body, chromium(VI) is transported in the blood and distributes throughout the body. In the body, chromium(VI) is reduced to chromium(III). Chromium(VI) can cross cell membranes and enter cells much more readily than chromium(III). Therefore,chromium(VI) in blood is taken up into red blood cells, while chromium(III) in blood does not enter the red cells. This provides the blood monitoring program rationale for analyzing red blood cell chromium as a measure of exposure to chromium(VI). In the red cells, chromium (III)is reduced and, in the process, reacts with hemoglobin and other proteins inside the red blood cells.These compounds are stable and remain largely inside the red blood cell for its lifetime of up to 120 days. Due to the differential uptake and retention of chromium(VI) in red blood cells, the measurement of totalchromium in red blood cells is a useful biomarker for cumulative exposure to chromium(VI) over a period of up to several months prior to the time of blood sampling. Since chromium occurs in various food items, virtually all persons have chromium in their blood, including very low levels of chromium(VI) in their red blood cells, although these levels may be so low as to be undetectable by conventional analysis methods.

III. Summary of Blood Sample Collection Procedures, including Quality Assurance and Quality Control

a. Participants

Participants in the blood monitoring program were adult residents who were recruited at public meetings in Jersey City by the former Site Administrator, Michael McCabe. Participants were required to live within the Study Area. Participation was voluntary and the purpose of the sampling and its limitations were explained to the participants.

The initial baseline round of sampling was conducted in June/July of 2010, before the cleanup activities commenced. In the initial round of sampling, blood samples were collected from 42 individuals. The program was designed to provide for six subsequent annual rounds of sampling. In the rounds of sampling following the initial round, the participants were contacted by mail and email with follow-up by phone calls. To give individuals every opportunity to participate, repeated attempts were made to contact individuals, including direct contact at home addresses, when necessary, although participation was strictly voluntary. Participation in the rounds subsequent to the initial baseline round of sampling was as follows:

Round	Dates	Number of Participants
2	February/March 2011	36
3	June/July 2012	30
4	May/June 2013	30
5	May/June 2014	26
6	June 2015	29
7	June/July 2016	28

During the period from the initial baseline sampling round until the seventh and final annual round of sampling in 2016, eight participants could not continue participation due to relocation of their residences outside of the monitoring program area, and one participant died at the age of 90. A total of 21 residents participated in all seven rounds of sampling.

b. Sample collection and storage

Most blood draws were performed at the Mary McLeod Bethune Community Center located at 140 Martin Luther King Jr. Drive, Jersey City, New Jersey. Due to scheduling conflicts at the Community Center, one sampling session in Round 2 was held at St. Patrick's Church located at 492 Bramhall Avenue.

The same protocol was followed during each of the blood sampling rounds. Blood samples were collected by appointment only. After enrollment, the names and contact information of participants living in the eligible area were given to EOHSI by the Site Administrator. At the initial appointment, each participant was asked to provide a form of identification (such as driver's license

or utility bill). Project personnel then reviewed a consent form and answered participant questions and discussed any participant concerns. Participants then signed and dated the consent form. A unique subject identification number was then assigned to the participant to be maintained for the duration of the project. The confidentiality of subject identification and personal information was protected throughout the blood monitoring program.

At each subsequent round, investigators confirmed the name, residence address, and mailing address with the participant. For each round, four to six sampling dates were offered to provide convenient opportunities to maximize participation.

Prior to sample collection in each round, study personnel interviewed the participant in order to complete the Exposure Assessment Questionnaire. The purpose of the Questionnaire was to obtain exposure information that would be helpful in interpreting the chromium(VI) blood levels. Questions included occupation and changes in occupation, time spent at Jersey City residence, hobbies that might involve exposure to chromium, outdoor activities such as gardening, exposure to cigarette smoke, alcohol consumption, home renovation, and use of vitamins or dietary supplements.

Blood collection was performed by a licensed phlebotomist and followed a standard phlebotomy protocol observing universal precautions. During sample collection, three separate work areas of the clinic were used for participant intake/questionnaire completion, blood collection, and sample preparation. Additionally, a recovery area (mat and pillow placed on a table) was set up to provide a place for participants to recline if needed after the blood draw. Refreshments were provided to the subjects. Collected blood samples were in the direct custody of primary technician and/or the project manager, who initiated the chain of custody form for the chromium analysis by NMS laboratories. A separate duplicate blood sample was collected for possible later confirmatory analysis at the EOHSI laboratory. After late-afternoon or evening collections the samples were secured in a dedicated refrigerator in EOHSI Room 128, which is a locked laboratory with limited access.

c. Sample Analysis

NMS was chosen as the laboratory based on its extensive experience as a clinical medicine and forensic toxicology laboratory. The participating EOHSI scientists had prior experience with heavy metal analysis in biological materials, using NMS and other laboratories, and NMS was chosen based on this experience. NMS is a fully accredited laboratory with a well-developed and well-documented quality assurance program.

Complete Blood Count (CBC) analysis was performed by Quest Diagnostics to measure the hematocrit (percent of red blood cells). The CBC analysis was needed in order to properly interpret the levels of Chromium that might be found in participants' red blood cells. The primary chromium analysis on all samples was performed by NMS Labs (Willow Grove, PA). Two test requisition forms were initiated and completed by the phlebotomist, one for Quest Diagnostics and one for

NMS Labs. The requisition forms contained only the age, gender and subject ID number as identifiers. Participant names did not appear on the requisition forms.

NMS Labs measured total chromium in the red blood cell samples. As noted above (pg. 4), total chromium in red blood cells is a sensitive biomarker (indicator) of potential exposure to chromium(VI), because red blood cells take up and retain chromium(VI) much more avidly than other forms of chromium.

The primary technician collected the sample tubes and test requisition forms directly from the phlebotomist. The technician confirmed that the subject number on the tube corresponded to the subject number on the test requisition form.

The technician appropriately packaged the CBC tube in a cooler with cold packs, and secured the client copy of the test requisition form in the Chromium Exposure Assessment Project Binder.

The technician centrifuged (10 to 15 min at 1000-1200 RCF) the NMS trace metal tube to separate the red blood cells. After centrifugation and removal of the plasma, the technician transferred the red blood cells into a labeled, pre-cleaned plastic screw cap vial provided by NMS. The technician then appropriately packaged and placed the sample in the cooler with cold packs. The NMS Sample Submission form accompanied the samples. Duplicate samples for possible confirmatory analysis at EOHSI were labeled and similarly packaged and stored for transport to the EOHSI laboratory.

During transport to EOHSI or Quest Diagnostics, the cooler holding the blood samples was in the direct custody of either the project manager or primary technician. For evening sessions, the CBC samples were brought directly to the Quest Diagnostics in Teterboro, NJ. Otherwise they were transported to EOHSI. Samples and forms were stored in a secure refrigerator in Room 128. The CBC samples were placed in a locked Quest pick-up box at EOHSI. Appropriate pick up times were confirmed with Quest prior to each blood collection session.

For the purpose of maintaining confidentiality for participants, signed consents were stored in a locked cabinet in a private office at EOHSI. Questionnaires and the Chromium Exposure Assessment Project Binder were locked in a separate private office at EOHSI.

d. Sample Shipment

Within one week of the blood draw, the red blood cell samples collected for chromium analysis were packed with cold packs in approved shipping containers according to University regulations under the direction of either the primary technician or project manager. The chain of custody section on each Forensic Sample Submission Form was completed to reflect relinquishment of custody to the carrier. The lab copy of the sample submission form was packed with the samples. The client copy was secured in the Chromium Exposure Assessment Project Binder. Once the package was secured and labeled, it remained under the control of a staff assistant until picked up by the carrier. Upon

receipt at NMS, the chain-of-custody procedure resumed from sample receipt through analysis. Copies of the NMS internal chain of custody were available to EOHSI upon request.

IV. PPG Independent Review

Ronald Teichman MD, a board-certified occupational physician, was contracted by PPG as an "Independent Expert Overseer." He reviewed the standard operating procedures, and EOHSI staff training programs. He was present at the Bethune Center during each annual round of blood sampling to verify compliance with procedures.

V. Results of the Blood Monitoring Program

Results were generally received from NMS within 2-3 weeks of receipt of samples. Results were reviewed by the EOHSI Co-Principal Investigators (Michael Gochfeld MD, PhD in years 1-6, and Robert Laumbach MD, MPH in year 6-7). Letters containing the laboratory results for both Chromium and the Complete Blood Count were sent to each participant. A summary of sample results without personal identifiers was provided to the Site Administrator within several weeks of receipt of sample results after each round of sampling.

Interpretation of low levels of chemicals in the body requires paying attention to what the laboratory calls the "method detection limit (MDL)," which is the lowest level of chromium that can be identified with confidence using the laboratory's method.

The results for chromium levels in red blood cells for all samples collected during the seven rounds of sampling are summarized in Table 1 annexed to this report. As noted above, the initial baseline round of sampling was conducted in June/July of 2010, before the start of remediation activities at the Garfield Avenue Site. Blood samples were collected from 42 individuals. All of the sample results were below the 2.0 micrograms per liter (μg/L) limit of detection of the analytical method being used by the laboratory at that time. (2.0 micrograms per liter is equivalent to 2 parts per billion).

The second round was conducted in February/March of 2011 with 36 of the original 42 individuals participating. One sample was reported by NMS to be 3.6 μg/L, but on re-analysis of the duplicate sample at EOHSI, the result was less than 2.0 μg/L. To reconcile the difference between the two laboratories, the remaining duplicate sample was sent to NMS for analysis. The result, which was less than 2.0 μg/L, confirmed EOHSI's finding. Based on the analyses of the duplicate sample by two laboratories, the initial result of 3.6 μg/L was considered to be a laboratory error.

During the third round, 30 samples were collected in June/July of 2012. A single sample was above the limit of detection which was lowered to 1.0 μg/L for this round. The level of 1.5 μg/L was below the 2.0 μg/L reporting limit and was interpreted as not indicating exposure to chromium(VI) from site remediation activities.

The fourth round with 30 participants was conducted in May/June of 2013. All of the fourth round samples were below the detectable level of 1.0 μg/L chromium.

For the fifth round, conducted in May/June of 2014, 26 samples were collected. All were below the limit of detection at <1.0 μg/L.

In round 6, 28 samples were collected and all were below the limit of detection, which was set by the NMS laboratory at 2.2 μg/L in this round.

During the 7th and final round of sampling, 28 samples were collected and all were less than the 2.2 μg/L limit of detection.

VI. Conclusions

In summary, all of the sample results, beginning with the initial baseline sampling round through the subsequent six annual sampling rounds, were below the initial detection limit of 2.0 μg/L for chromium, indicating that there was no evidence of elevation of exposure to chromium during the 6 rounds of tests conducted after the baseline sampling. (See Table 1 annexed). In total, 191 of 192 samples did not have levels of chromium above the initial detection levels of 2.0 μg/L. In Round 3, one sample was reported with detectable chromium at 1.5μg/L, but this did not exceed the previous detection limit of 2.0 μg/L. This sample result was below the previous limit of detection of 2.0 μg/L during the baseline and second rounds of sampling, and therefore did not represent an elevation from the baseline level for this participant. During Round 3, the results for the remaining 29 participants' samples were all less than the new detection limit of 1.0 μg/L. If migration of chromium(VI) from the site was leading to exposure to individuals in the Study Area, we would expect to see a pattern of increase in chromium in the blood cells relative to the baseline levels. Taken together, the results show no evidence of elevation during any of the six sampling rounds that were completed after the remediation at the Garfield Avenue Site was initiated. The results support the conclusion that the work practices, dust suppression activities and the Air Monitoring Program for controlling potential exposures to chromium(VI) during the site remediation activities at the Garfield Avenue Site provided effective protection for residents in the Study Area.

VII. Acknowledgments

We would like to acknowledge the dedication and the community service of the program participants, who acted out of concern for the community to voluntarily give blood samples to the monitoring program annually for up to seven blood samples over 6 years.

[TABLE 1 ON FOLLOWING PAGE]

TABLE 1
Rounds 1 to 7 RBC Chromium Blood Monitoring Results (2010 - 2016)

ID	Baseline Date	Cr (ug/L) Base	Round 2 Date	Cr (ug/L) 2	Round 3 Date	Cr (ug/L) 3	Round4 Date	Cr (ug/L) 4	Round5 Date	Cr (ug/L) 5	Round6 Date	Cr (ug/L) 6	Round6 Date	Cr (ug/L) 7
CEAP-001	06/23/10	<2.0	02/26/11	<2.0			05/22/13	<1.0						
CEAP-002	06/28/10	<2.0	03/04/11	<2.0			05/22/13	<1.0						
CEAP-003	06/23/10	<2.0	03/19/11	<2.0	06/23/12	<1.0	06/01/13	<1.0	06/07/14	<1.0	06/22/15	<2.2	07/01/16	<2.2
CEAP-004	06/23/10	<2.0	03/19/11	<2.0	06/23/12	<1.0	06/01/13	<1.0	06/07/14	<1.0	06/22/15	<2.2	06/25/16	<2.2
CEAP-005	06/25/10	<2.0	03/04/11	<2.0										
CEAP-006	06/25/10	<2.0	02/26/11	<2.0	06/15/12	<1.0	05/09/13	<1.0	05/28/14	<1.0	06/12/15	<2.2	06/25/16	<2.2
CEAP-007	06/25/10	<2.0	02/16/11	<2.0	06/15/12	<1.0	05/22/13	<1.0	06/05/14	<1.0	06/18/15	<2.2	07/01/16	<2.2
CEAP-008	06/25/10	<2.0	03/04/11	<2.0	06/15/12	<1.0	05/09/13	<1.0	05/28/14	<1.0	06/12/15	<2.2	06/23/16	<2.2
CEAP-009	06/25/10	<2.0	03/04/11	<2.0	06/15/12	<1.0	05/17/13	<1.0	06/05/14	<1.0	06/20/15	<2.2	06/23/16	<2.2
CEAP-010	06/25/10	<2.0	03/04/11	<2.0	06/15/12	<1.0	05/22/13	<1.0	05/28/14	<1.0	06/12/15	<2.2	07/01/16	<2.2
CEAP-011	06/26/10	<2.0	02/16/11	<2.0										
CEAP-012	06/26/10	<2.0	03/01/11	<2.0	06/23/12	<1.0	05/22/13	<1.0	05/28/14	<1.0	06/10/15	<2.2	07/20/16	<2.2
CEAP-013	06/26/10	<2.0	03/01/11	<2.0	06/23/12	<1.0	05/22/13	<1.0	05/28/14	<1.0	06/10/15	<2.2	07/20/16	<2.2
CEAP-014	06/26/10	<2.0	03/04/11	<2.0										
CEAP-015	06/26/10	<2.0	03/04/11	3.6(1)										
CEAP-017	06/26/10	<2.0	03/19/11	<2.0	06/15/12	<1.0	06/01/13	<1.0	06/07/14	<1.0	06/10/15	<2.2	06/23/16	<2.2
CEAP-018	06/26/10	<2.0	03/04/11	<2.0	06/20/12	<1.0	05/09/13	<1.0	06/05/14	<1.0	06/12/15	<2.2	06/23/16	<2.2
CEAP-019	06/26/10	<2.0	02/26/11	<2.0	06/23/12	<1.0	06/01/13	<1.0	06/07/14	<1.0	06/20/15	<2.2	06/25/16	<2.2
CEAP-020	06/26/10	<2.0			06/23/12	<1.0	06/21/13	<1.0						
CEAP-021	06/26/10	<2.0	03/01/11	<2.0	06/20/12	<1.0	06/01/13	<1.0			06/18/15	<2.2	07/01/16	<2.2
CEAP-022	06/26/10	<2.0			06/20/12	<1.0								
CEAP-023	06/26/10	<2.0			06/23/12	<1.0	05/09/13	<1.0	06/21/14	<1.0	06/20/15	<2.2	06/25/16	<2.2
CEAP-024	06/26/10	<2.0	02/26/11	<2.0										
CEAP-025	06/28/10	<2.0	03/04/11	<2.0	07/10/12	<1.0	05/09/13	<1.0	06/21/14	<1.0	06/18/15	<2.2	06/29/16	<2.2
CEAP-026	06/28/10	<2.0	02/16/11	<2.0	06/20/12	<1.0	06/01/13	<1.0	06/05/14	<1.0	06/10/15	<2.2	06/29/16	<2.2
CEAP-027	06/28/10	<2.0	02/16/11	<2.0	06/20/12	<1.0	05/09/13	<1.0	06/05/14	<1.0	06/10/15	<2.2	06/29/16	<2.2
CEAP-028	06/28/10	<2.0			07/10/12	<1.0	06/21/13	<1.0			06/12/15	<2.2	06/29/16	<2.2
CEAP-029	06/28/10	<2.0					06/21/13	<1.0			06/18/15	<2.2	06/29/16	<2.2
CEAP-030	06/28/10	<2.0	03/04/11	<2.0	06/15/12	<1.0	05/22/13	<1.0	06/07/14	<1.0	06/10/15	<2.2		<2.2
CEAP-031	06/28/10	<2.0	03/04/11	<2.0	06/15/12	<1.0			06/21/14	<1.0	06/18/15	<2.2	07/01/16	<2.2
CEAP-032	06/28/10	<2.0	02/26/11	<2.0	06/23/12	<1.0	06/01/13	<1.0	06/07/14	<1.0	06/20/15	<2.2	06/25/16	<2.2
CEAP-033	06/28/10	<2.0	02/26/11	<2.0	06/23/12	<1.0	05/09/13	<1.0	05/28/14	<1.0	06/18/15	<2.2	06/23/16	<2.2
CEAP-034	06/28/10	<2.0	02/26/11	<2.0	06/20/12	1.5(2)	05/09/13	<1.0	05/28/14	<1.0	06/18/15	<2.2	06/23/16	<2.2
CEAP-035	07/01/10	<2.0	02/26/11	<2.0										
CEAP-036	07/01/10	<2.0	03/01/11	<2.0	06/15/12	<1.0	05/17/13	<1.0	05/28/14	<1.0	06/10/15	<2.2	06/23/16	<2.2
CEAP-037	07/01/10	<2.0	03/01/11	<2.0			05/09/13	<1.0	06/05/14	<1.0	06/22/15	<2.2	06/29/16	<2.2
CEAP-038	07/01/10	<2.0	03/01/11	<2.0	06/15/12	<1.0	05/17/13	<1.0	05/28/14	<1.0	06/10/15	<2.2	06/23/16	<2.2
CEAP-039	07/01/10	<2.0	03/01/11	<2.0	06/15/12	<1.0	05/17/13	<1.0	05/28/14	<1.0	06/10/15	<2.2	06/23/16	<2.2
CEAP-040	07/01/10	<2.0	03/04/11	<2.0	06/23/12	<1.0								
CEAP-041	07/01/10	<2.0												
CEAP-042	07/01/10	<2.0	03/04/11	<2.0	06/20/12	<1.0			05/28/14	<1.0	06/20/15	<2.2		
CEAP-043	07/01/10	<2.0	03/04/11	<2.0										

(1) Analysis of this sample was repeated at NMS and at the EOHSI laboratory and both of the repeated analyses were < 2.0 ug/L.

(2) The level of 1.5 ug/L was detectable with a lowered detection limit during this round (1.0 ug/L), but remained below the initial detectable limit of 2.0 ug/L.

AMENDMENT TO MASTER SCHEDULE

(Site 107/108)

November 28, 2016

Each of the undersigned agrees that the Master Schedule for the PPG Chrome Remediation Sites (Exhibit 2/3), Rev. Date July 29, 2016 (the "Master Schedule") is hereby modified and amended to reflect the following changes with respect to Site 107/Site 108 only:

1. The information in the Access for Remediation cell is deleted in its entirety and replaced with the following:

107 - In litigation

108 - Access for remediation to be obtained by February 2017. If access is not obtained by such date, litigation will commence by March 2017.

2. The column entitled Ready for Excavation, Actual or Required, is hereby modified from June 2017 to January 2018.

3. The column entitled Excavation Start, Actual or Required, is hereby modified from June 2017 to January 2018.

4. The column entitled Excavation Complete, Actual or Required, is hereby modified from June 2018 to January 2019.

5. The column entitled Backfill Complete, Actual or Required, is hereby modified from August 2018 to March 2019.

6. The column entitled Restoration Complete, Actual or Required, is hereby modified from September 2018 to April 2019.

7. The column entitled RAR Determination is hereby modified from August 2019 to March 2020.

8. The column entitled Comments is deleted in its entirety and replaced with the following:

Eastern Millwork, Inc. ("EMI") is a tenant that occupies the building located at Site 107 (the "Site 107 Building"). EMI plans to relocate to a new building, but construction delays have affected its ability to relocate to the new building by the February 2017 timeline referenced in the July 29, 2016 Master Schedule. EMI requested an extension due to the construction delays. All parties agreed to the extension whereby EMI will vacate the property no later than the last day of September 2017.

Conrail has indicated it will not enter into an access agreement more than 30 days prior to the start of work. Negotiated access for remediation of adjacent Conrail property to be obtained by August 2017 or legal remedies will commence by September 2017.

The current NJDEP approved remedial approach is an unrestricted use remedy. If PPG and the Site 107 property owner agree on an alternate remedial approach and an associated deed notice, PPG will seek a revised NJDEP approval within a timeframe that will achieve the Excavation Start Date, as reflected in this amendment. The Schedule, however, is based upon the assumption that the remedy includes building demolition enabling full removal/excavation of contaminated material within the footprint of the building.

The approved Remedial Investigation Report for Site 108 indicated that the "hotspot" contaminated area on Site 108 was presumed to have emanated from Site 107, and required that remedial action at Site 108 would be performed as part of the Site 107 remedial action. Therefore, Site 108 is to be remediated concurrent with the Site 107 remedial action. PPG agrees that its efforts to obtain access to Site 108 shall not be a cause for delay in implementing the remedial activities at Site 107 in accordance with the milestones set forth herein.

9. Except as set forth expressly herein above, all of the terms of the Master Schedule shall be and remain in full force and effect, and shall be binding upon the Parties.

UNDERSTOOD, AGREED AND ACCEPTED BY:

PPG

_____

Keith Prins, Authorized Signatory

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION

_____

Thomas J. Cozzi, Authorized Signatory

CITY OF JERSEY CITY

_____

Jeremy Farrell, Authorized Signatory

SITE ADMINISTRATOR

Ronald J. Riccio

Ronald J. Riccio

Conrail has indicated it will not enter into an access agreement more than 30 days prior to the start of work. Negotiated access for remediation of adjacent Conrail property to be obtained by August 2017 or legal remedies will commence by September 2017.

The current NJDEP approved remedial approach is an unrestricted use remedy. If PPG and the Site 107 property owner agree on an alternate remedial approach and an associated deed notice, PPG will seek a revised NJDEP approval within a timeframe that will achieve the Excavation Start Date. as reflected in this amendment. The Schedule, however, is based upon the assumption that the remedy includes building demolition enabling full removal/excavation of contaminated material within the footprint of the building.

The approved Remedial Investigation Report for Site 108 indicated that the "hotspot" contaminated area on Site 108 was presumed to have emanated from Site 107, and required that remedial action at Site 108 would be performed as part of the Site 107 remedial action. Therefore, Site 108 is to be remediated concurrent with the Site 107 remedial action. PPG agrees that its efforts to obtain access to Site 108 shall not be a cause for delay in implementing the remedial activities at Site 107 in accordance with the milestones set forth herein.

9. Except as set forth expressly herein above, all of the terms of the Master Schedule shall be and remain in full force and effect, and shall be binding upon the Parties.

UNDERSTOOD, AGREED AND ACCEPTED BY:

PPG

Keith Prins, Authorized Signatory

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION

Thomas J. Cozzi, Authorized Signatory

CITY OF JERSEY CITY

~~Jeremy Farrell~~, Authorized Signatory
Bharini A. Doshi

SITE ADMINISTRATOR

Ronald J. Riccio

Ronald J. Riccio

Conrail has indicated it will not enter into an access agreement more than 30 days prior to the start of work. Negotiated access for remediation of adjacent Conrail property to be obtained by August 2017 or legal remedies will commence by September 2017.

The current NJDEP approved remedial approach is an unrestricted use remedy. If PPG and the Site 107 property owner agree on an alternate remedial approach and an associated deed notice, PPG will seek a revised NJDEP approval within a timeframe that will achieve the Excavation Start Date, as reflected in this amendment. The Schedule, however, is based upon the assumption that the remedy includes building demolition enabling full removal/excavation of contaminated material within the footprint of the building.

The approved Remedial Investigation Report for Site 108 indicated that the "hotspot" contaminated area on Site 108 was presumed to have emanated from Site 107, and required that remedial action at Site 108 would be performed as part of the Site 107 remedial action. Therefore, Site 108 is to be remediated concurrent with the Site 107 remedial action. PPG agrees that its efforts to obtain access to Site 108 shall not be a cause for delay in implementing the remedial activities at Site 107 in accordance with the milestones set forth herein.

9. Except as set forth expressly herein above, all of the terms of the Master Schedule shall be and remain in full force and effect, and shall be binding upon the Parties.

UNDERSTOOD, AGREED AND ACCEPTED BY:

PPG

Keith Prins, Authorized Signatory

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION

Thomas J. Cozzi, Authorized Signatory

CITY OF JERSEY CITY

Jeremy Farrell, Authorized Signatory

SITE ADMINISTRATOR

Ronald J. Riccio

Ronald J. Riccio