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M. Michael McCabe 12/16/11
Site Administrator
Jersey City PPG Chromium Sites

Subject: Adequacy of Response to Comments on July 2006 Remedial Action Work Plan and the July 2010 Remedial Action Work Plan Addendum; Metropolis Towers, Site 146, Jersey City, New Jersey

Dear Mr. McCabe:

With the exceptions noted below, PPG Industries (PPG) has adequately addressed the New Jersey Department of Environmental Protection (Department) comments, dated September 20, 2010 on the July 2006 Remedial Action Work Plan (RAWP) and July 2010 Remedial Action Work Plan Addendum (RAWP Addendum) developed by Civic & Environmental Consultants, Inc. (CEC) for PPG. Note that since a revised RAWP has not yet been submitted by PPG, it was not possible to assess how the comments were addressed in the revised RAWP/RAWP Addendum.

Prior comments for which response was not considered fully adequate:

General Comment 2: NJDEP had considered the July 2006 version of the RAWP as approvable with revisions. Therefore, per the requirements set forth in New Jersey Administrative Code (N.J.A.C.) 7:26E-1.3(c)2, since the RAWP had been submitted prior to 2 December 2008 and it that (generally) met the requirements of N.J.A.C. 7:26E-6, the soil cleanup criteria in place prior to promulgation of the Soil Remediation Standards (promulgated 2 June 2008) established for the contaminants of concern are applicable provided that the Soil Remediation Standards are not an order of magnitude or more lower than the pre-June 2008 soil cleanup criteria. A comparison of the pre-June 2008 soil cleanup criteria and the Soil Remediation Standards specific to residential property use for the site-specific contaminants of concern are provided below:

Contaminant of Concern	May 1999 Soil Cleanup Criterion (mg/kg)	June 2008 Soil Remediation Standard (mg/kg)
Hexavalent Chromium	20 (1)	20 (3)
Trivalent Chromium (2)	120,000 (2)	120,000 (4)
Antimony	14	31
Nickel	250	1,600
Thallium	2	5
Vanadium	370	78

Notes: (1) This value is the soil cleanup criteria for non-residential soil; however, the July 2006 version of the RAWP notes that the most stringent cleanup criteria was used.
(2) This standard was identified in the July 2006 version of the RAWP as being applicable to total chromium, while it is identified in the soil cleanup criteria for trivalent chromium.
(3) Based on the Commissioner's Chromium Policy memo dated 8 February 2007.
(4) Based on April 2010 NJDEP Memo "Chromium Soil Cleanup Criteria"

As can be seen in the table above, none of the contaminant of concern had a reduction in standard of an order of magnitude or more, therefore, PPG may use the May 1999 soil cleanup criteria in lieu of the 2008 soil remedial standards should they choose.

Note that since the 2006 RAWP deferred the impact to groundwater soil remediation pathway, this pathway now needs to be evaluated to determine that soils remaining following remedial excavation do not adversely impact groundwater.

Note that remedial standards for the PPG chromium sites have been established under the 2009 Joint Consent Order.

Response: PPG acknowledges the NJDEP decision to use the May 1999 soil cleanup criteria as remedial standards at this site. PPG will pursue the Impact to Groundwater (IGW) requirements by obtaining samples from the three highest concentration hexavalent chromium post-excavation samples that are less than 20 mg/kg from each Area and performing the IGW protocol to demonstrate compliance for chemicals of concern. If approved, this approach will be incorporated into the Final RAWP.

Adequacy of Response: The response is adequate. However, the Department recommends that PPG consider performing the IGW assessment in advance of the remedial excavation, particularly if PPG intends, as indicated in the draft RAWP, to backfill upon reaching remedial limits established by pre-excavation sample results. Should these samples be collected following excavation and the excavation backfilled prior to completing the IGW assessment, there might be a need to revisit/reexcavate certain areas if the IGW assessment determines that there is a residual risk associated with soils remaining following the remedial excavation.

General Comment 3: Together, the July 2006 RAWP, July 2006 RAWP Investigation (Appendix D of the July 2006 RAWP), the July 2010 RAWP Addendum, and the August 2010 PAMP contain inconsistencies which preclude the accurate and clear presentation of the current proposed remedial action. As presented, these documents are confusing and may cause issues with implementability of the remediation in the field.

The 2006 RAWP must be revised in "track-changes" format to clearly identify which portions of the 2006 RAWP have been superseded by the 2010 RAWP Addendum (strike out text that no longer applies and identify which section(s) of the RAWP Addendum apply in its place), and must clearly call out figures and tables in the RAWP and RAWP Addendum that have been superseded. The revised 2006 RAWP and 2010 RAWP Addendum must also be revised to address the deficiencies noted later in this comment letter. Because of the confusion engendered by this group of documents, the Technical Execution Plan must be submitted for Department

review and approval. Development of a singular set of tables and figures is required in the Technical Execution Plan.

Response: The 2006 RAWP superseded sections have been identified in the addendum and the Figures that supersede those in the 2006 document are identified.

Before producing a Technical Execution plan, PPG would like the NJDEP to define what the requirements of the Technical Execution Plan include; this is not a document that is defined in the Technical Regulations or the JCO. Before agreeing to provide an additional document subject to review, PPG requests the approval of the RAWP before pursuing preparation of another document.

Adequacy of Response: A Technical Execution Plan (TEP) is not required. However, the RAWP/RAWP Addendum must be revised to be sufficiently clear (e.g., a singular set of figures/tables/documents, clarity on which portion of the 2006 RAWP are superseded by which sections of the April 2012 RAWP, etc.)

General Comment 3, continued: For example, as per N.J.A.C. 7:26E-6.2(a)(6), figures must be provided that identify location, depth and concentration of all contaminants in excess of the remediation standard; and sample locations, depths and parameters for all post-construction samples. The figures do not have the analytical data posted to the sample locations. Additionally, there are discrepancies between sample identification numbers presented on the tables and figures that make it difficult to correlate the data from the tables to the figures. Additionally, a sampling summary table for all proposed post remediation samples is required pursuant to N.J.A.C. 7:26E-6.2(a)2. As per N.J.A.C. 7:26E-6.2(a)6, the remedial area detail maps must include the volume of each remedial media being remediated and the vertical extent of the area being remediated.

In addition, to assist in clarification of the proposed work, an Executive Summary should be added to the RAWP Addendum (and also included in the Technical Execution Plan) giving the reader an overview of where and how deep the contaminated zones are, the nomenclature for each, and the order in which they will be addressed. The summary should also include the totals of soil being removed and hauled away, soil being removed and used a clean backfill, and soil being imported as make-up fill. Because the Technical Execution Plan must be approved prior to implementation, PPG must build this approval into the schedule.

Response: The 2006 RAWP superseded sections have been identified in the addendum and the figures that supersede those in the 2006 document are identified as requested. Additionally, the figures and tables have been updated.

PPG is unsure about the requirements of the Technical Execution Plan include, as this document is not defined in the Technical Regulations or the Joint Consent Order ("JCO"). We would like to schedule a quick call to discuss the requirements of this document prior to submittal of the revised RAWP and RAWP Addendum.

In regards to the specific requirements of the scaled site map:

i. The location of remedial treatment units is present and indicated numerous times on various drawings.
ii. The volume of each medium to be remediated is subject to change in the field during remedial activities, so an estimate of the volumes to be remediated has been added to the remedial area details.
iii. The estimated vertical and horizontal extents of the area to be remediated are included in the remedial area details and on the excavation plans.
iv. The location, depth, and concentration of all contaminants in excess of the remediation standards are shown on the excavation plans.
v. The sample locations, depths, and parameters for all post-construction samples are shown on the excavation plans.

An Executive Summary shall be added to the final RAWP and shall be included in the Technical Execution Plan, once the details and content of that document have been discussed and defined.

Adequacy of Response: ***The Department believes that a call would benefit the execution of this program. As noted earlier, a TEP is not required; however, the RAWP/RAWP Addendum must be amended to fully address these comments previously submitted.***

General Comment 4: Methods identified for dust suppression and air monitoring are not adequate as proposed in the PAMP. Most notably, there does not appear to be any buffer zone between air monitoring stations and the public, and dust control measures are reactive, not proactive. The Department requires a conference call to further discuss these issues. Supplemental comments on this issue will be provided following the conference call.

Response: As discussed with the Department, the location of the public (residents) on the site precludes the existence of much of a buffer zone between the excavation areas, the air monitoring stations and the public. The public will be excluded from the construction area through the use of barriers and fencing. A revised air monitoring program has been developed that includes consideration of both ground level and elevated sampling at the perimeter of the construction area. The revised air monitoring program will also include continuous real-time PM10 monitoring using hand-held instruments near the excavations to allow proactive dust control to be implemented and to verify that dust control measures are being successful in controlling dust levels to be below the allowable limits at and above the construction area.

Adequacy of Response: ***The PAMP proposes a real-time action level of 339 micrograms per cubic meter ($\mu g/m^3$), averaged over 15 minutes, for all excavation areas. For areas where there is no spatial buffer between the general public and excavation activities, a more conservative averaging time of 5 minutes will be required, with a 1-minute averaging time as an "early warning" mechanism. Additionally, consistent with the goals established in the Garfield Avenue Site Dust Control Plan, PPG should meet the objectives of "no visible dust" for all work areas, and shall update the PAMP to reflect the "no visible dust" goal. As total dust and hexavalent chromium air results are available, PPG must evaluate the data to determine whether***

there is a correlation between the dust and hexavalent chromium concentrations. The real-time dust action level may need to be revised based on the data assessment.

General Comment 6: The tenant parking density at the property must be evaluated, and contingencies developed for tenant parking spaces consumed during the various stages of the remedial action.

Response: Previous meetings with the former building owner made them aware of the influence of remedial action on the availability of parking spaces. The current building owner has been made aware of the influence of remedial action on the number of parking spaces available to tenants. This impact will be addressed through the site access agreement with the property owner. A survey of parking spaces was performed over four weeks in September 2010 and this information will be discussed with the building management.

Adequacy of Response: The Department expects PPG to work out the parking impacts to the satisfaction of building management and the tenants.

General Comment 7: It is not clear from reading the RAWP and RAWP Addendum which data have undergone validation and which have not. As the data are being relied upon to determine limits of remediation, these data must undergo validation to ensure that they are accurate and may be relied upon for remedial decision-making. Validation reports must be provided as an attachment to the revised RAWP, and must include identification information to allow the reviewer to understand which investigation (and which attachment, if the revised RAWP will be organized in that manner) each validation report relates to. If any of the data are determined to be invalid (must be rejected), those data must be removed from the report and the data presentation must be revised to reflect that that particular data point does not exist for that analyte.

Response: Validation had not been performed on any of the data collected after the original RAWP submittal in July 2006. Validation of data collected after that date is being performed with the intent of incorporating the validated data into the final RAWP.

Adequacy of Response: Incorporation of the validated data is appropriate. However, the validation reports for those samples which will be relied upon for remedial decision making (e.g., clean post-excavation samples, samples beyond the limits of excavation) must be provided as attachment(s) to the RAWP.

General Comment 9: PPG shall ensure that all receptor evaluation requirements specified in N.J.A.C. 7:26E-1.15 through 1.19 are met by the deadlines identified in the regulations.

Response: A receptor evaluation was not submitted for either the Site Investigation report or the Remedial Action Work Plan because the original submission of these documents predates the requirement. PPG submitted a Receptor Evaluation on June 6, 2011.

Adequacy of Response: A Receptor Evaluation Report, which addressed the Department's 6/29/11 comments on the Receptor Evaluation form, was submitted by AECOM on behalf of PPG on 9/20/11. Please confirm that the finalized RE forms were distributed as per N.J.A.C. 7:26E-1.15(e).

Section-Specific Comment 1: All submittals to NJDEP must be certified by PPG as required by N.J.A.C. 7:26E-1.5(a).

Response: The certification page will be included with the final FSWP document.

Adequacy of Response: As required by N.J.A.C. 7:26E-1.5, all submittals must be certified, not just the finalized submittal.

Section-Specific Comment 12 - Section 6.4, page 16: The current dewatering plan is not clearly defined. Additional detail regarding the dewatering plan and contingency dewatering measures are required. Adequate dewatering will allow for excavated soils to be acceptably direct loaded for off-site disposal, or managed on site, and will facilitate visual inspection of in-situ soils to verify all visible CCPW has been removed. Additional detail regarding the Passaic Valley Sewerage Commissioners (PVSC) permit, the anticipated dewatering rates, if the water will be discharged directly to a sewer, if a NJDEP Treatment Works Approval and/or Water Allocation Permit or notification is required must be provided. Please explain whether dewatering beneath the meadow-mat will be required to prevent upward seepage which could result in wet bottom sediments despite dewatering of the excavation sidewalls above the meadow-mat.

Response: See Section 7.3 for additional information on dewatering. The approved PVSC authorization to discharge will address the issues identified related to rates, volumes, direct discharge to sewer and whether a NJDEP Treatment Works Approval or Water Allocation permit or notification is required. This permit is part of project documents governing remedial work and will be provided upon approval by the PVSC. Dewatering below the meadow mat is not anticipated to complete the planned excavation activities.

Adequacy of Response: The Department requests that the dewatering details described in the initial comment be provided to the Department through a series of status conference calls during the remedial design/implementation process, similar to those held for Site 114.

Section-Specific Comment 15 - Section 7.1, page 17, second paragraph, last sentence: For any non-chromium and non-CCPW-related soils intended to be used for backfill, a soil reuse plan must be prepared in accordance with N.J.A.C. 7:26E-6.4(d) and approved by the Department. Any soil with chromium being proposed for reuse must not contain hexavalent chromium at a concentration of 20 milligrams per kilogram (mg/kg) or greater, which must be demonstrated through analytical results. Note that the information provided in RAWP Addendum Section 4 does not meet all the technical requirements set forth in N.J.A.C. 7:26E-6.4(d).

Response: Please provide what specifically needs to be added to RAWP Addendum Section 4 to comply with the technical requirements set forth in N.J.A.C 7:26E-6.4(d). This information or analyses will be added to the final RAWP.

Adequacy of Response: This issue requires further discussion with the Department.

Section-Specific Comment 17 - Section 7.2, page 18, first paragraph: The "pre-excavation delineation" approach presented by CEC (slides 21 and 22) in the June 17, 2010 meeting at AECOM's Piscataway office should be included in the revised RAWP, except that there shall be

samples for every 2-foot vertical interval as described in Section 7.4.1 of the work plan. The complete horizontal and vertical pre-delineation data set and supporting figures clearly providing point-by-point compliance to support the extent of the excavations must be provided to, and approved by the NJDEP prior to the commencement of the soil remedial action.

Response: The data and presentation of this information has been included in the RAWP for each remedial area and on Figure 3 Pre-Excavation Boring Locations.

Adequacy of Response: As discussed during the December 12, 2011 Master Schedule call, Weston and PPG/CEC will have a phone call to discuss the required figures and tables needed for a compliant RAWP.

Section-Specific Comment 18 - Section 7.2, page 18, second paragraph: Free liquids are not permitted to discharge from the lined and loaded haul trucks. As the effectiveness of the dewatering efforts are not known at this time, the RAWP must be revised to include additional detail regarding the material and construction of the truck liners, and contingency measures to prevent any discharge of free liquids from the loaded haul trucks.

Haul truck tire washing is mandatory prior to leaving the site. Additionally, truck exteriors must be inspected and all soils removed/truck decontaminated prior to the vehicles departing the site.

Response: Material and construction of the truck liners is more appropriately addressed in technical specifications for bid. The type of truck liner to be used shall be a transport contractor decision appropriate to the containment results required. Inspection of the integrity of the truck liners prior to loading is integral to the proper functioning of a truck liner. Trucks will be staged on the decontamination pad following loading and visually inspected for leakage. Trucks with leaking liners will remain on the truck decontamination pad until such time as they can be unloaded, decontaminated, and released for liner repair. Due to the amount of paved surfaces on this site and the intent to load on hard surfaces, the requirement for haul truck tire washing will be evaluated through visual inspection and reaction to the conditions of the specific truck tire.

Adequacy of Response: This response is not adequate. The Department requires that the RAWP be revised to include additional detail regarding material and construction of truck liners, and contingency measures to prevent releases of free liquids from the loaded haul trucks. Further, the Department requires that haul truck tire washing is mandatory prior to leaving the site, and that the RAWP document the inspection of all truck exteriors and decontamination/removal of soil from truck exteriors, as necessary, prior to vehicles departing from the site.

Section-Specific Comment 21 - Section 7.3, page 19, second paragraph, first sentence: The RAWP must provide additional dewatering detail to ensure the ability to direct-load excavated materials. See Section-Specific Comment 12.

Response: At this site, materials to be excavated are primarily granular fill and construction debris which reduces material water-holding capacity. Additionally, ground water elevations have been decreasing with time reducing the anticipated need for dewatering.

Adequacy of Response: See discussion of adequacy of response for Section-Specific Comment 12.

Section-Specific Comment 27 - Section 7.5, page 22, first paragraph, fifth sentence: All haul trucks must go through the truck tire wash before exiting the site.

Response: This is addressed in the soil erosion and sediment control plan. Also see Response to Section-specific Comment 18.

Adequacy of Response: See assessment of adequacy of response to Section-Specific Comment 18.

Section-Specific Comment 28 - Section 7.5, page 23, first paragraph: Dust suppression must be proactively implemented during any and all intrusive site work. Dust control measures must be in place for working and non-working hours (i.e. 24 hours per day) for any open excavation or stockpiled materials.

Response: Section 7.5 of the RAWP provides general contamination migration control measures; specific measures for dust control are provided in RAWP Appendix E Perimeter Air Monitoring Plan which was superseded by the August 2010 update submitted as part of the RAWP Addendum. Proposed revisions to the Perimeter Air Monitoring Plan will include the following. Dust suppression will be proactively implemented during intrusive site work during the standard 8-hour work day. At the end of each work day and during non-working periods (e.g. weekends), excavation areas and any stockpiled excavated material will be stabilized using engineering controls to mitigate the production of fugitive dusts during non-work periods. The stabilization will be performed through use of wind screens, chemical binders or tarps depending on the materials and conditions present onsite.

Adequacy of Response: The approved RAWP must be wholly consistent with the approved PAMP.

Section-Specific Comment 29 - Section 7.6, page 23, second paragraph, second sentence: A certification to document the quality of the fill is not acceptable. As the NJDEP indicated during the June 17, 2010 meeting at AECOM's office, any imported fill must have analytical data to demonstrate compliance with all 2008 NJDEP Soil Remediation Standards. The RAWP Addendum did not incorporate the testing requirements to document the cleanliness of the imported clean backfill, as had been indicated in an interim submittal.

Response: N.J.A.C. 7:26E-6.4(b)2(iv) states that "documentation of the quality of the fill shall be provided by a certification stating that it is virgin material from a commercial or noncommercial source or decontaminated recycled soil." Therefore, additional analytical data should not be required.

Adequacy of Response: See assessment of adequacy of response to Section-Specific Comment 15.

Section-Specific Comment 32 - Section 7.7.2 and 7.7.3: These sections of the RAWP were not reviewed because of major changes provided in 2010 RAWP Addendum. Please confirm that the RAWP Addendum supersedes these sections of the 2006 RAWP.

Response: A new Section 7.7 was not provided as part of the 2010 RAWP Addendum or was it indicated as being superseded.

Adequacy of Response: PPG must clarify how the RAWP and RAWP Addendum work together to describe with sufficient clarity the remedial plan for the site. Also see assessment of adequacy of response to Section-Specific Comment 17.

Section-Specific Comment 34 - Section 8.0, page 38, third paragraph, second sentence and last paragraph: Dust controls must be proactively implemented during all site work. See Section-Specific Comment 28. In addition, there must be only one dust action level for the site.

Response: Section 8.0 of the RAWP provides a summary of the Perimeter Air Monitoring Plan (PAMP) and was not meant to provide complete details of the plan. Revisions to the updated August 2010 PAMP submitted as part of the RAWP Addendum will include the following. In addition to construction zone perimeter ground level and elevated monitoring. Ground-level locations will include continuous real-time PM10 sampling and integrated Cr+6 and PM10 sampling. Elevated locations at first-balcony level, mid-building and rooftop will include sampling for real-time PM10 sampling and integrated Cr+6 and PM10 sampling. The revised air monitoring program will also include continuous real-time PM10 monitoring using hand-held instruments near the excavations to allow proactive dust control to be implemented and to verify that dust control measures are being successful in controlling dust levels to be below the allowable limits at and above the construction area. The Particulate Action Level (PAL) for respirable (PM10) particulates (independent of chemical concentration in dust) is 339 ug/m3 as indicated in Section 2.3 of the August 2010 PAMP.

Adequacy of Response: See assessment of adequacy of response to Section-Specific Comment 28.

Section-Specific Comment 35 - Section 8.0, page 38, last paragraph: The Department requires a conference call to further discuss these issues. Comments on this section of the RAWP are deferred until after the call.

Response: Please coordinate this call with Dave Claassen of PPG Industries, Inc.

Adequacy of Response: These discussions occurred over a series of meetings and conference calls during the January/February 2011 time frame.

Section-Specific Comment 41 - Section 10.0, page 41: A verified list of required State, local, and Federal permits must be provided. The applicability determination of the NJDEP Treatment Works Approval must be finalized to avoid unwarranted project schedule delays. An applicability determination of the need for a Water Allocation Permit or Temporary Dewatering Permit must be made based on dewatering calculations (see Section-Specific Comment 12).

Response: See Response to Section-Specific Comment 12.

Adequacy of Response: ***See assessment of adequacy of response to Section-Specific Comment 12.***

Section-Specific Comment 44 - Section 13.0, page 44: In lieu of the proposed periodic progress reports, the Department anticipates that weekly progress teleconferences, with follow-up teleconference minutes submitted via email, will be adequate. Any proposed modifications to the approved RAWP would require written approval prior to implementation in the field.

Response: Weekly teleconferences with follow-up minutes via email as an approved alternative will be included. PPG would like clarification on what is intended by "any proposed modifications to the approved RAWP would require written approval prior to implementation in the field." Small scale changes and modifications are expected as a part of any field project based on field conditions, weather, equipment, etc., and holding PPG to a strict interpretation of this could easily result in severe impediments to proceeding with remedial action construction.

Adequacy of Response: ***Proposed modifications to the approved RAWP would require written approval prior to implementation in the field. In order to alleviate "severe impediments to proceeding with remedial action construction," conditions which might require a requested revision to the approved RAWP should be anticipated. As has been demonstrated during implementation of the Interim Remedial Measure #1 at the Garfield Avenue Site, use of field change request forms has allowed for timely Department review and approval of revisions to field procedures authorized in that approved work plan.***

Section-Specific Comment 45 - Section 14.0, page 45: The revised remedial schedule, provided as Figure 15 of the July 2010 RAWP Addendum, appears out of date. In accordance with 7:26E-6.5(c), within 30 calendar days of RAWP approval an updated remedial action schedule must be submitted to the Department.

Response: The remedial schedule provided as Figure 15 is a segment of the current JCO schedule for Site 156 Metropolis Towers activities.

Adequacy of Response: ***In accordance with 7:26E-6.5(c), an updated remedial action schedule must be submitted to the Department within 30 calendar days of RAWP approval.***

Section-Specific Comment 49 - Figure 2: Please correct inconsistencies on Figure 2. The figure uses three different symbols to designate remedial investigation locations. The remedial investigation location symbols used on the map are not represented accurately in the legend; and the soil boring and monitoring well symbols in the legend are identical. Some of the remedial investigation locations on the map do not have labels.

The text (page 7) states there are 68 soil borings and 5 well locations associated with the PPG remedial investigation. However, there are more than 73 remedial investigation sample locations depicted in Figure 2.

Twenty-one of the 68 remedial investigation soil boring locations and PPG1-MW2 are not depicted and labeled in Figure 2. A "PPG1-B05" and "PPG1-B5" are depicted on Figure 2. The PPG-T01 through PPG1-T04 soil sample locations included in Appendix A are not illustrated on Figure 2. Non-remedial investigation sample locations should not be included (or included in gray) in Figure 2. Please ensure all PPG remedial investigation sample locations are depicted and correctly labeled on Figure 2.

Response: The copy of Figure 2 provided on the RAWP CDs incorporated data from the RAWP Investigation (RAWP Appendix D) and the RAWP Addendum in error. Please refer to Figure 2 from the hard copy versions of the 2006 RAWP. The figure will be reviewed for inconsistencies and updated as necessary.

There were 58 soil borings and 5 well locations associated with the original RI. Additionally, "PPG1-B5" has been corrected to read "PPG1-B51" and PPGT01 through PPGT04 have been added to Figure 2.

Adequacy of Response: See assessment of adequacy of response to Section-Specific Comment 17.

Section-Specific Comment 50 - Figure 3: A "LB7" and a "LB-7" are depicted on Figure 3. LB-17 is not shown on Figure 3. All non-Langan sample locations should not be included (or included in gray) in Figure 3. Please ensure all Langan Supplemental Investigation sample locations are depicted and correctly labeled on Figure 3.

Response: The designations "LB7" and "LB-7" are shown per the drawing obtained for the Langan Supplemental Investigation and were not re-designated.

Adequacy of Response: PPG must conduct due diligence to ensure that the data on which remedial decisions are being made are accurately located and represent the actual samples collected from those locations. Figure 3 must be revised to identify the location of Langan sample LB-17, at a minimum. Also see assessment of adequacy of response to Section-Specific Comment 17.

Section-Specific Comment 51 - Figure 4: Sample locations PE-30 through PE-35 are not depicted on Figure 4. All non-Pre-Remedial boring locations should not be included in Figure 4. Please ensure all Pre-Remedial sample locations are depicted and correctly labeled on Figure 4.

Response: Figure 4 does not present locations for PE-30 through PE-35 because borings with these designations were not installed.

Adequacy of Response: Please provide a note on Figure 4 to provide clarity for future users of the report.

Section-Specific Comment 54 - Figure 6: The number and location of post-excavation sidewall sample locations shall be a minimum frequency of 1 location for every 30 linear feet of each sidewall. Post-excavation bottom samples must be at a minimum frequency of 1 sample per 900 square feet of bottom area.

Response: Figure 6 does not show the locations or number of post excavation sidewall or floor samples. Post excavation samples for Area A are shown on RAWP Addendum Figure 19.

Adequacy of Response: ***If it is the intent to not include post-excavation sidewall samples on Figure 6, the legend designation for "sidewall sample location" should be removed to increase clarity. Also note that sidewall samples indicated on Figure 19 for excavation Area A do not meet the minimum requirements since 50 feet separates PPG-B01 and PE-3. Finally, figures should include the results of all sampling, including the sampling program conducted per the July 2011 Pre-Remedial Sampling & Analysis Plan.***

Section-Specific Comment 55 - Figure 7: No post-excavation sidewall sample locations are shown on Figure 7 in Appendix A of the July 2010 RAWP Addendum. The number and location of post-excavation sidewall sample locations shall be a minimum frequency of 1 location for every 30 linear feet of each sidewall. There are three sidewalls identified in the remedial excavation that do not have any post-remediation samples identified. Post-excavation bottom samples must be at a minimum frequency of 1 sample per 900 square feet of bottom area.

Response: Figure 7 does not show the locations or number of post excavation sidewall or floor samples. Post excavation samples for Area B are shown on RAWP Addendum Figure 17 Layout 1.

Adequacy of Response: ***As shown on Figure 17 of the RAWP Addendum, 45 feet separates the proposed post-excavation sidewall sample along the eastern edge of excavation Area B and sample location PE-6. This does not satisfy the minimum sampling frequencies established by the Department. The final figures should include the findings of the sampling program conducted per the July 2011 Pre-Remedial Sampling & Analysis Plan.***

Section-Specific Comment 57 - Figure 9: No post-excavation sidewall sample locations are shown on Figure 9 of the July 2006 RAWP. The number and location of post-excavation sidewall sample locations shall be a minimum frequency of 1 location for every 30 linear feet of each sidewall. Post-excavation bottom samples must be at a minimum frequency of 1 sample per 900 square feet of bottom area.

Response: Figure 9 does not show the locations or number of post excavation sidewall or floor samples. Post excavation samples for Area D are shown on RAWP Addendum Figure 17 – Layout 3.

Adequacy of Response: ***See assessment of adequacy of response to Section-Specific Comment 17.***

Section-Specific Comment 59 - Figure 11: The Remedial Area F is not consistently depicted on Figure 11 of the July 2006 RAWP and Figure 14 of the July 2006 RAWP. Figure 11 must be updated to reflect the extent of the more currently proposed excavation. For Remedial Area F (Figure 11, July 2006 RAWP), there are distances approaching 60 feet (between PE-16 and PPG1-B12) with no sidewall post-excavation data. In addition, there are no proposed post-

excavation sidewall sample locations are shown for Remedial Area F-1. The number and location of post-excavation sidewall sample locations for Remedial Areas F and F-1 shall be a minimum frequency of 1 location for every 30 linear feet of each sidewall. Post-excavation bottom samples must be at a minimum frequency of 1 sample per 900 square feet of bottom area.

Response: The depictions of Area F on Figure 11 and Figure 14 of the July 2006 RAWP appear to be the same. An additional Pre-excavation boring will be installed between PE-21 and PPG-B12 and between PPG-B12 and PE-36 to meet the required sampling intervals. For Remedial Area F-1, RAWP Addendum Figure 21 identifies the location of 12 sidewall and 1 excavation floor sample.

Adequacy of Response: See assessment of adequacy of response to Section-Specific Comment 17.

Section-Specific Comment 60 - Figure 12: Figure 12 of the July 2010 RAWP Addendum must be modified to include the requirements specified in N.J.A.C. 7:26E-6-2(a)(6).

Response: Due to current complexity of the drawings and the presence of this information on other RAWP drawings, a key to the location of the information specified in N.J.A.C. 7:26E-6.2(a)(6) will be added to Figure 12.

Adequacy of Response: See assessment of adequacy of response to Section-Specific Comment 17.

Section-Specific Comment 61 - Figure 13: Figure 13 of the July 2010 RAWP Addendum must be modified to include the requirements specified in N.J.A.C. 7:26E-6-2(a)(6).

Response: Due to current complexity of the drawings and the presence of this information on other RAWP drawings, a key to the location of the information specified in N.J.A.C. 7:26E-6.2(a)(6) will be added to Figure 13.

Adequacy of Response: See assessment of adequacy of response to Section-Specific Comment 17.

Section-Specific Comment 62 - Figure 14: Figure 14 of the July 2006 RAWP must be modified to include the requirements specified in N.J.A.C. 7:26E-6-2(a)(6).

Response: Due to current complexity of the drawings and the presence of this information on other RAWP drawings, a key to the location of the information specified in N.J.A.C. 7:26E-6.2(a)(6) will be added to Figure 14.

Adequacy of Response: See assessment of adequacy of response to Section-Specific Comment 17.

Section-Specific Comment 63 - Figure 15: See Section-Specific Comment 45.

Response: See Section-Specific Response to Comment 45.

Adequacy of Response: See assessment of adequacy of Response to Comment 45.

Section-Specific Comment 68 - Appendix F, Section 6.1: Personal worker air monitoring shall be designed to ensure compliance with the applicable Occupational Safety and Health Administration (OSHA) standard, as outlined in 29 CFR 1926.1126. This section does not discuss if upgraded levels of respiratory protection will be required for workers within the exclusion zone until sample data indicates no exposure above the permissible exposure limit (PEL). Revise text to document compliance with the OSHA standard.

Response: Evaluation of soil concentrations relative to Cr+6 PELs allow real-time dust monitoring to be used concurrently with time-integrated occupational health sampling for verification.

Adequacy of Response: The response provided does not directly indicate intent to comply with the provisions of 29 CFR 1926.1126. The HASP shall be revised to specifically address the requirements of 29 CFR 1926.1126.

Section-Specific Comment 73 - 2010 RAWP ADDENDUM, Section 2, first paragraph: Provide a copy of the conditional approval of the 2006 Sampling and Analysis Plan for RAWP Implementation, along with a point-by-point summary table of the NJDEP conditions to the approval for the February 23, 2006 Sampling Analysis Plan for the RAWP and CEC's disposition. The summary table must identify specifically where each condition and respective disposition is presented in the June 2006 RAWP Investigation or the July 2010 RAWP Addendum.

Response: After a search of old files, PPG found it did not have a copy of the conditional approval of the 2006 Sampling and Analysis Plan for RAWP Implementation to use as a basis for this evaluation.

Adequacy of Response: Reference to the conditional approval must be removed from the text.

Section-Specific Comment 74 - 2010 RAWP ADDENDUM, Section 2, third paragraph, bullets: Provide NJDEP laboratory certification numbers. Per N.J.A.C. 7:26E-2.1(a)(1)(ii), only those laboratories certified for analysis as required under N.J.A.C. 7:18 may be used for analysis of samples required to fulfill requirements of the Site Remediation Program.

Response: The laboratory certification numbers follow the lab names in the referenced bullet list.

Adequacy of Response: The certification numbers identified in the bullets are identified as being provided by NELAC, not by the Department's Office of Quality Assurance (OQA). Please confirm that these numbers are also NJDEP/OQA certification numbers.

Section-Specific Comment 75 - 2010 RAWP ADDENDUM, Section 3.2, page 8, second paragraph: The analytical results for all samples are provided in Table 1. However, evaluation of the data is not possible because the sample identification numbers (IDs) provided in Table 1 do not align with the boring IDs provided in the embedded table on pages 7-8 and Figure 8. See General Comment 3.

Response: Table 1 presents the complete sample designation consisting of a Site prefix (156) followed by a one to two letter boring type (e.g. I, CE, PE) followed by a one to two digit boring type number (e.g. 1, 10) followed by the numeric top of the sample depth below ground surface, a hyphen, the numeric bottom of the sample depth below ground surface, and a letter sample sequence. For brevity during discussion, the locations are referred to by the one or two letter boring type and boring number. Since the letter I appears similar to the number 1, a hyphen is inserted in discussions, imbedded tables, and on figures to separate the boring type and the boring type number for clarity.

Adequacy of Response: It is not clear. If boring numbers are identified within the text and on figures, the corresponding boring number should be added in the tables for each column presenting analytical results for samples collected from that boring. Also see assessment of adequacy of response to Section-Specific Comment 17.

Section-Specific Comment 78 - 2010 RAWP ADDENDUM, Section 4.0, Soil Reuse Plan, pages 11-13: The plan, as presented, is not acceptable; and must be prepared in accordance with N.J.A.C. 7:26E-6.4(d). See Section-Specific Comment 15. Additionally, "additional certified clean offsite fill" must be laboratory tested to confirm it meets all applicable NJDEP soil remediation standards, including those for protection of groundwater. See Section-Specific Comment 29.

Response: Please specifically identify what this section is missing to be in compliance with N.J.A.C. 7:26E-6.4(d). N.J.A.C. 7:26E-6.4(b)2(iv) allows for the use of certified virgin fill from a commercial or noncommercial source or decontaminated recycled soil.

Adequacy of Response: See assessment of adequacy of response to Section-Specific Comment 15 and Section-Specific Comment 29.

Section-Specific Comment 79 - 2010 RAWP ADDENDUM, Section 4.0, pages 12-13: Note that specific requirements for determination of the suitability of concrete for recycling must be met, per the "Guidance for Characterization of Concrete and Clean Material Certification for Recycling" (NJDEP, July 6, 2009), including the prohibition of data averaging to determine compliance with remedial standards. Also, please provide specific details regarding the "erosion control measures."

Response: The specific requirements that are not met in the NJDEP concrete recycling guidance have not been identified in the comment. Concrete core sampling and analysis was performed in March of 2006 prior to the issuance of the NJDEP concrete recycling guidance. Concrete core analysis was based on known site prior use and the chemicals of concern identified at the site. Data averaging was not part of the concrete core investigation.

Adequacy of Response: The Department reiterates that PPG/CEC need to be familiar with all applicable guidance documents. Current guidance may be found at http://www.nj.gov/dep/srp/guidance/.

Section-Specific Comment 80 - 2010 RAWP ADDENDUM, Section 5.1, page 15, second paragraph, second and third sentences: Collection of samples over a 1-foot interval is not in compliance with the requirements of N.J.A.C. 7:26E-3.6(a)(5), which requires that soil "samples

be collected in discrete six inch increments." Please explain the sampling methodology; collecting a 1-foot sample may be acceptable in this instance. Also, please specify on appropriate tables and figures which sample results are associated with samples that were collected in 1-foot increments.

Response: The 1-foot interval or 2-foot interval were the initial sampling interval sizes retrieved from the boring not the size of the sample placed in laboratory soil sample jars. Each sample placed into a laboratory soil sample container consisted of a 6-inch interval selected based on visual examination from the materials retrieved from the boring.

Adequacy of Response: The text, as written, suggests that a 1-foot sample was mixed in the field and the aliquot collected represented a mixture of the 1-foot sample length. Please clarify the language in the revised RAWP to be consistent with actual field activities.

Section-Specific Comment 84 - 2010 RAWP ADDENDUM, Table 3: Hexavalent chromium analytical results are required for soils proposed for reuse.

Response: Hexavalent chromium results are all below 20 mg/kg in soils proposed for reuse.

Adequacy of Response: See assessment of adequacy of Response to Section-Specific Comment 15.

Section-Specific Comment 85 - 2010 RAWP ADDENDUM, Figures 16-21: The legend must be updated to include the symbol and explanation for the elevation contours within the remedial action areas. See General Comment 3.

Response: The meaning of elevation contours is provided under each view-pane on Figures 16-21.

Adequacy of Response: The legend must be updated to include the symbol and explanation for the elevation contours within the remedial action areas. Also see assessment of adequacy of Response to Section-Specific Comment 17.

Section-Specific Comment 86 - 2010 RAWP ADDENDUM, Figure 21: There are 900 square foot circular areas depicted without a known sample with hexavalent chromium less than 20 mg/kg. There are perimeter sidewall lengths greater than 30 feet where no sample results or proposed samples are depicted. The number and location of post-excavation sidewall sample locations shall be a minimum frequency of 1 location for every 30 linear feet of each sidewall, and the number of post-excavation bottom samples shall be a minimum frequency of one sample for every 900 square feet of excavation bottom.

Response: The issues identified have been addressed in the responses to previous comments: See Section-specific Responses to Comments 56 and 59.

Adequacy of Response: See assessment of adequacy of response to Section-Specific Comment 56 and Section-Specific Comment 29.

Section-Specific Comment 87 - 2010 RAWP ADDENDUM, Figure 22: The cross-sections should depict sample point locations and concentrations used to construct the zone projected to include soil with hexavalent chromium greater than 20 mg/kg, and the boundaries of the proposed excavations. The cross-sections should also depict anticipated limits of remedial excavation in addition to the limits of anticipated contaminant exceedance of remedial standards.

Response: The cross-sections are summary information based on the contours from Figures 16-21 that represent the proposed excavation limits. The proposed excavation limits from Figure 16-21 are based on last overlying and first underlying samples with concentration < 20 mg/kg Cr+6 and below regulatory limits for antimony, nickel, vanadium, and thallium. Depicting the concentrations used to construct these zones would only demonstrate they are all less than regulatory limits. An explanatory note indicating the above will be added to Figure 22 indicating that the concentrations used to construct the proposed limits of excavation are all below regulatory limits.

Adequacy of Response: As per N.J.A.C. 7:26E-6.2(a)6, the RAWP must include a scaled site map that includes, among other information, the location, depth, and concentration of all contaminants in excess of the remediation standard, and sample locations, depths, and parameters for all post-construction samples. Since PPG is using pre-excavation samples in lieu of post-construction samples, the map must provide the locations and concentrations of those samples identifying areas requiring remedial excavation as well as all those which will be used to determine the limits of excavation. Due to the complexity of the planned cut lines at the Metropolis Towers site, this requirement must not be met with an explanatory note, and must be applied both to figures showing plan view and cross section of the excavation areas. Also see assessment of adequacy of response to Section-Specific Comment 17.

Section-Specific Comment 88 - PERIMETER AIR MONITORING PLAN, General: The PAMP provides for a site-specific acceptable air concentration (AAC) of 1.58 micrograms per cubic meter of air ($\mu g/m^3$), which is equivalent to 1,580 nanograms per cubic meter of air (ng/m^3). This proposed AAC is unacceptable due to the proximity of the residential towers. The Department requires a conference call to further discuss these issues.

Response: Based on the results of discussions with the Department, the site-specific acceptable air concentration (AAC) for hexavalent chromium in air will be 487 ng/m3 based on a non-carcinogenic endpoint within a 225 work-day duration of intrusive remediation activities. Compliance with the AAC during the duration of remediation activities will be based on the results of daily 8-hour TWA analysis for hexavalent chromium in air using a project duration (225 work days) average. The average will be periodically evaluated and communicated to the Department to assess compliance on a 30/60/90-day and project-to-date rolling average. Should the project duration exceed 225 work days due to schedule delays or other unforeseen conditions, the AAC will be recalculated using a carcinogenic endpoint.

Adequacy of Response: The response is incomplete as stated. When approximately 9-10 months of project time have elapsed, the Department will evaluate whether the proposed project schedule is on track, or if additional project time will be required due to schedule delays or other unforeseen conditions. A new project schedule will be developed at this time, based upon production rates of activities to date. If this new

project schedule extends beyond 225 intrusive activity days, PPG must calculate and measure against a carcinogenic endpoint AAC based upon the revised duration of intrusive activity. PPG will then be required to comply with one of the following:

1. ***If project-to-date average AAC concentrations are below the calculated carcinogenic exposure AAC, and it appears that PPG can continue to operate within the average limit of the carcinogenic exposure AAC, PPG can continue to perform remediation activities without a change in operations.***

2. ***If project-to-date average AAC concentrations exceed the calculated carcinogenic exposure AAC, or it appears that continued operations might cause the carcinogenic exposure AAC to be exceeded prior to the completion of the remediation, PPG must implement additional engineering controls, including the installation of a negative-pressure enclosure around all remaining intrusive activities, to eliminate potential dust exposure to the residential population at the site.***

Section-Specific Comment 89 - PERIMETER AIR MONITORING PLAN, Section 2.5: The proposed PAMP does not indicate the use of exclusion zone perimeter monitoring or any other means of an "early warning" indicator. This is unacceptable. An exclusion zone monitoring system, best management work practices, or other engineering controls shall be included in the PAMP. The reliance upon a hand-held portable monitor (as indicated in the last paragraph of Section 2.4) as the sole exclusion zone monitoring system is unacceptable. Exclusion zone monitoring shall be employed for each work area, and supplemented with hand-held monitoring devices.

Response: Due to the close proximity of the excavation zones with the construction area barriers and the proximity of the residents at the site, there is little or no buffer zone. A revised air monitoring program has been developed that includes consideration of both ground level and elevated sampling at the perimeter of the construction area. The revised air monitoring program will also include continuous real-time PM10 monitoring using hand-held instruments near the excavations to allow proactive dust control to be implemented and to verify that dust control measures are being successful in controlling dust levels to be below the allowable limits at and above the construction area.

Adequacy of Response: This will be evaluated upon submission of revised monitoring location figures (refer to Comment 102). Also see evaluation of adequacy of response to General Comment 4.

Section-Specific Comment 96 - PERIMETER AIR MONITORING PLAN, Section 3.2: The PAMP indicates that integrated samples will be collected over a 24-hour period. However, this is not adequately representative of actual site conditions during the period of highest potential for exposure (the actual work day). Integrated sample collection shall be performed only during the work day at the perimeter monitoring locations. Consistent with the air monitoring/sampling practices implemented at Garfield Avenue, PPG shall deploy a minimum of one to two separate air monitoring stations specifically to collect 24-hour samples. Additionally, a turn-around-time (TAT) of 14 days for hexavalent chromium samples is unacceptable; a shorter TAT is required.

Response: Integrated samples for Cr+6 will be obtained daily from each sampling location during the planned eight-hour workday. Twenty-four (24-hour) integrated sampling for Cr+6 is not being proposed at this site. A 7-day turnaround time (TAT) will be utilized for all Cr+6 air data.

Adequacy of Response: The sampling frequency, including 24-hour sampling, must be consistent with what is being performed at the Garfield Avenue Group of sites. However, due to the proximity of residents to the planned excavation area, a TAT of 7 days is being required for this site. Note that the PAMP QAPP must be updated to incorporate these changes, including addressing the inconsistent references to PAH analysis.

Section-Specific Comment 97 - PERIMETER AIR MONITORING PLAN, Section 4: Section 4.0 provides a text overview of personnel on-site responsible for implementation of the PAMP, but is unclear. An organizational chart shall be provided to better define roles and responsibilities of site personnel responsible for implementation of the PAMP and for dust control and response actions.

Response: The text of this section will be revised to better define roles and responsibilities of personnel responsible for implementation of the PAMP. An organizational chart will be provided for clarification.

Adequacy of Response: The response is adequate, provided an updated organizational chart (Figure 3 of the PAMP) is provided prior to site mobilization.

Section-Specific Comment 102 - PERIMETER AIR MONITORING PLAN, Figure 2: The figure provides an overview of proposed perimeter air monitoring station locations. The use of 4 air monitoring stations during work in Layout Area 1 does not adequately provide coverage for residents of Metropolis Towers or the general public beyond the site perimeter along Marin Boulevard (north/northwest of the work area). Similarly, the proposed air monitoring station locations for Layout Areas 2 and 3 do not provide adequate coverage if work is not being performed concurrently. Air monitoring should be provided not just for the perimeter of the property, but also for each individual remedial area (e.g., A, B, C…), as well as near any active residential entrances.

Based upon the number and placement of air monitoring stations as provided in Figure 2, there is no mechanism place to evaluate for potential fugitive dust emissions where excavation extends to the buildings (Remedial Areas A, C South, D and E). Engineering controls or other methods must be utilized to monitor fugitive dusts and prevent particulate matter from impacting the building exteriors accessible to residents (such as windows and balconies in each apartment which may overlook a work area). See General Comment 4. The Department requires a conference call to further discuss these issues.

Response: Figure 2 will be revised to provide additional monitoring stations along the perimeter of each remedial area and building entrances. Air monitoring stations will be moved throughout the excavation and placed around the remedial areas that are being excavated at that time.

Building entrances and balconies will be monitored. Real-time particulate and integrated air monitoring stations will be placed within 20 feet of entrances on the ground level. Elevated air monitoring stations will be anchored to a pulley system on the roof of the building. Air monitors will be mounted at the top of the building, at mid-building height and at the height of the first balconies.

Adequacy of Response: ***No air monitoring stations are shown for Area F1. Please provide updated figures which specify air monitoring location placement on separate figures for each layout area.***

If you have any questions regarding this matter, contact me at (609) 984-2905.

Sincerely,

Thomas J. Cozzi, Assistant Director
Site Remediation DEP

C: Brian McPeak, Project Manager
Dave Doyle, DEP

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Governor

KIM GUADAGNO
Lt. Governor

BOB MARTIN
Commissioner

M. Michael McCabe
Site Administrator
Jersey City PPG Chromium Sites

1/22/13

CONDITIONAL APPROVAL

Re: Remedial Action Work Plan
Metropolis Towers – Site 156
(Formerly Gregory Park Apartments)
270-280 Luis Munoz Marin Boulevard
Jersey City, New Jersey

Dear Mr. McCabe:

The New Jersey Department of Environmental Protection (Department) has completed review of the *Remedial Action Work Plan; Metropolis Towers – Site 156; (Formerly Gregory Park Apartments); 270-280 Luis Munoz Marin Boulevard; Jersey City, New Jersey* (RAWP) prepared by Civil & Environmental Consultants, Inc. (CEC) for PPG Industries dated November 16, 2012.

The Department hereby approves the RAWP, conditional upon submittal of all design deliverables in accordance with the Construction Milestone Schedule, dated 11/28/12, submitted via email from Emory McLean of CEC to Brian McPeak on December 3, 2012, as well as the schedule for submission of cut lines and sections submitted via email from Emory McLean to Brian McPeak on December 14, 2012.

If you have any questions regarding this matter, contact me at (609) 984-2905.

Sincerely,

Thomas J. Cozzi, Assistant Director
Site Remediation DEP

C: Brian McPeak, Project Manager
Dave Doyle, DEP

From:	bmcpeak@planningprogress.com
To:	Keith Prins (Prins@ppg.com); PE Mark E. Terril (terril@ppg.com); Gibbons, Thomas
Cc:	McCabe, Michael (jcsiteadministrator@earthlink.net); Cozzi, Tom; Doyle, David; Amin, Prabal; LoPilato, Alfred; Spader, David
Subject:	FW: Metropolis Towers (Site 156) RAR - High Level Assessment of Contents
Date:	Friday, November 07, 2014 2:26:50 PM

On behalf of Mike McCabe, I am forwarding Weston's high level assessment comments regarding the Metropolis Towers Soil RAR.

It seems that a face-to-face meeting to review and discuss these high level assessment comments would be beneficial. We can discuss idea that during the Monday Project Manager's conference call.

Brian McPeak
Planning Progress, LLC
Site Administrator | Project Manager
Chromium Cleanup Partnership
bmcpeak@planningprogress.com

From: Amin, Prabal [mailto:Prabal.Amin@WestonSolutions.com]
Sent: Friday, November 07, 2014 12:33 PM
To: 'Michael McCabe'
Cc: bmcpeak@planningprogress.com; Tom Cozzi; 'David Doyle'; Amend-Babcock, Laura
Subject: Metropolis Towers (Site 156) RAR - High Level Assessment of Contents

Mike,

As suggested by Tom Cozzi, Weston performed a high level assessment of the contents of the recently received Remedial Action Report (RAR) for Metropolis Towers. After consulting with NJDEP on our assessment, revision of the RAR is needed in accordance with the guidelines below to demonstrate the adequacy of the remedial action and to further clarify or improve the documentation of the remedial action for future users of the RAR:

1. Analytical data associated with soils/concrete removed during the course of the remedial action should not be presented in tables/figures depicting "post-excavation" conditions. If PPG wishes to present the entirety of the data set, environmental samples representative of materials which were removed during excavation may be provided in tables/figures in an appendix. Such information should be clearly described as interim sample results or pre-final excavation sample results or some other designation which makes it clear that they do not represent the condition of soils/concrete remaining once final remedial limits were achieved.

2. Analytical data associated with soils remaining following excavation, whether the source of that data was the Remedial Investigation (RI), the pre-design sampling program, or the post-excavation sampling program should be presented in a table (or tables) and a figure or series of figures, organized by Layout Area/Remedial Area. All data should be presented with elevations rather than (or in addition to) depths.

Additionally, for all sample locations where spot-elevations were collected, the remedial excavation elevation corresponding to that sample location should also be presented. PPG/AECOM may wish to refer to these table(s)/figure(s) as "confirmation sample analytical results". Please note that a high-level review of the figures provided in the RAR indicated that a significant amount of RI data were not included in the pre-excavation or post-excavation figures.

3. The remedial limits shown on the post-excavation sampling figures and the post-remedial action as-built figures are inconsistent. Figures showing confirmation sampling results should have excavation limits that are consistent with the post-remedial action as-built drawings. As discussed in Comment #2 above, all data collected beyond the excavation limits should be clearly shown on those figures in a way that allows the user to compare the remedial limit elevation to the sample result elevation.

4. Where individual samples (which are representative of final excavation limits) contain CCPW-metal concentrations in excess of their respective remedial standards (e.g., K2-bottom sample on Table 2C), PPG must document attainment of Department standards consistent with the Department's *Technical Guidance for the Attainment of Remediation Standards and Site-Specific Criteria* (September 24, 2012, Version 1.0). Note that this guidance cannot be used to document compliance with the hexavalent chromium criterion.

5. All highlights/bolding/shading provided in figures and tables must be clearly explained in the legend/notes. For example, the meaning of the pink shading on Table 2A was not provided.

If you have any questions regarding the above, please do not hesitate to contact me.

Thanks.

Prabal

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you received this email in error, please notify the sender by return e-mail and delete this email from your system. Thank you.

Metropolis Towers Remedial Action Report Figures/Tables Review
Exceedances Identified in Table 1 - Soil Sample Results Remaining Post-Excavation

Location / Sample ID	**Layout Area**	**Contaminant**	**Concen-tration (mg/kg)**	**Remedial Standard Exceeded (numeric standard in mg/kg)**	**Sample Elevation (ft MSL)**	**Cut Line Elevation (ft MSL) indicated**	**Delineation**
FC-11 / FC11 (21.5-22)	LA-2	Thallium	3.9UJ	DIGWSSL (3)	—13.3 - —12.9	—12.5	Vertically?? Horizontally??
LA1-1 / LA1-1 (3.0-3.5)	LA-1	Antimony	7.8J	DIGWSSL (6)	2.8 - 3.3	4.3	Vertically by LA1-1 (4.0-4.5) Horizontally??
LB3 / LB3 #005	Just south of LA-3	Hexavalent Chromium	32.5	CrSCC (20)	—0.5 - —1.4	not excavated	Vertically?? Horizontally??
PPG1-M05 / 1560M05002	Just west of LA-2	Hexavalent Chromium	26	CrSCC (20)	—1.3 - —0.9	not excavated	Vertically by 1560M05003 Horizontally??
B73 / 156-B73B_1.5-2.0 (Dup?)	LA-1	Antimony	6.6	DIGWSSL (6)	3.8 - 4.3 FD	5.0	Vertically by 156-B73C_4.1-4.6 Horizontally??
B74 / 156-B74G_13.5-14.0	LA-1	Hexavalent Chromium	27.25U	CrSCC (20)	—7.2 - —6.7	0.2	Vertically?? Horizontally??
B76W / 156-B76W_3-4b	LA-1	Antimony	22.2	DIGWSSL (6)	1.9 - 2.9	5.9	Vertically?? Horizontally??
B76W / 156-B76W_3-4bd	LA-1	Antimony	23.9	DIGWSSL (6)	1.9 - 2.9 FD	5.9	Vertically?? Horizontally??
B76W / 156-B76W_4-5c	LA-1	Antimony	10.9	DIGWSSL (6)	0.9 - 1.9	5.9	Vertically?? Horizontally??
B90 / 156-B90_B5-6	LA-1	Antimony	6.1	DIGWSSL (6)	—0.5 - 0.5	2.3	Vertically by 156-B90_C8-9 Horizontally??
B97 / 156-B97_A2-3	LA-1	Antimony	6.3	DIGWSSL (6)	3.9 - 4.9	5.0	Vertically by 156-B97_B5-6 Horizontally??

Location / Sample ID	**Layout Area**	**Contaminant**	**Concen-tration (mg/kg)**	**Remedial Standard Exceeded (numeric standard in mg/kg)**	**Sample Elevation (ft MSL)**	**Cut Line Elevation (ft MSL) indicated**	**Delineation**
PE-21 / 156-PE-21B(5.5-6.0)X	LA-3	Antimony	7.6	DIGWSSL (6)	—1.1 - —0.6	4.0	Vertically by 156-PE-21C(8-8.5)X Horizontally??
PE-57 / 156-PE-57E(7.5-8.0)X	LA-2	Antimony	18.9	DIGWSSL (6)	—1.5 - —1	1.0	Vertically by 156-PE-57F(11.2-11.7)X Horizontally??
PE-57N / 156-PE-57N_C0-6	LA-2	Antimony	14.5	DIGWSSL (6_	1.7 - 2.2	3.0	Vertically by 156-PE-57N_D06 Horizontally??
PE-63 / 156-PE-63_F0-6	LA-3	Antimony	6.1	DIGWSSL (6)	—3.9 - —3.4	—3.1	Vertically?? Horizontally??
PE-80 / 156-PE-80_E8-8.5	LA-3	Thallium	3.6	DIGWSSL (3)	0.2 - 0.7	7.1	Vertically?? Horizontally??
PE-82 / 156-PE-82_B12-18	LA-3	Antimony	6.7	DIGWSSL (6)	4.5 - 5	6.0	Vertically by 156-PE-82_C12-18 Horizontally??
PE-83 / 156-PE-83_D12-18	LA-3	Antimony	8.9	DIGWSSL (6)	0.7 -1.2	5.9	Vertically?? Horizontally??

CrSCC – Chromium Soil Cleanup Criterion
DIGWSSL – Default Impact to Groundwater Soil Screening Level
ft MSL – feet above Mean Sea Level
mg/kg – milligrams per kilogram
RDCSRS – Residential Direct Contact Soil Remediation Standard
Concentration – not called out as exceedances on RAR figures/tables

Metropolis Towers Remedial Action Report Figures/Tables Review Comments

General Comments:

1. The ultimate goal of the RAR figures, tables, text, and supporting appendices is to clearly document successful remediation of the site to any third-party reviewer at any time in the future.

2. Exceedances must be addressed:
   a. If one of the methods identified in the Department's *Technical Guidance for the Attainment of Remediation Standards and Site-Specific Criteria* (Attainment Guidance) is used to document that the soils in the vicinity of the exceedance meet the Department's remedial standards, all work documenting successful implementation of the methods (consistent with the Attainment Guidance) must be included in the Remedial Action Report (RAR) as an Appendix.
   b. In order to use the Department's Attainment Guidance, all exceedances must be delineated using single point-of-compliance.
   c. The Department's Attainment Guidance cannot be applied to hexavalent chromium exceedances.
   d. Chromium exceedances should be addressed through the use of test pits to (1) visually document absence of CCPW, (2) remove soils associated with Cr^{+6} exceedance, and (3) obtain confirmation samples as necessary to document complete remediation of Cr^{+6} exceedance.

3. Where site-specific/layout-specific remedial standards have been developed (e.g., impact-to-groundwater for nickel), the layout-specific standards should be reflected on the RAR tables, and document(s) documenting the development of the site-specific standards should be included in the RAR as an Appendix. Please see *Development of a Site-Specific Impact to Ground Water (IGW) Standard for Total Nickel in Layout Area 1* (CEC, January 2013) and *Development of a Site-Specific Impact to Ground Water (IGW) Standard for Total Nickel in Layout Area 2 and Layout Area 3* (CEC, March 2013).

4. The residential direct contact remedial standard for vanadium, as identified in the NJDEP-approved RAWP (*Remedial Action Work Plan; Metropolis Towers – Site 156 (Formerly Gregory Park Apartments); 270-280 Luis Munoz Marin Boulevard; Jersey City, New Jersey*, Civil & Environmental Consultants, Inc., November 16, 2012) is 370 mg/kg. Please revise the applicable figures and tables to reflect this remedial standard.

5. Impact-to-groundwater remedial standards only apply to vadose zone soils. Therefore, one method that may be used to address exceedances of impact-to-groundwater standards (either default or site-specific) is to document the condition of the soils (e.g., saturated) by identifying the elevation of the static water table at the site, including the basis of those data.

6. Where "exceedances" of remedial standards are indicated by a non-detectable concentration of a compound where the laboratory reporting limit is greater than the applicable remedial standard, PPG must work with the laboratory to determine if a lower reporting threshold can be identified. If not, PPG must evaluate the laboratory data set to determine if there is a justifiable rationale to indicate that the compound is not present in the sample above the remedial limit.

7. Non-detected analytical results must be reported with the reporting limit and the qualifier "U," rather than "ND."

8. Rejected data (qualified by "R") cannot be used for remedial decision-making. Consistent with Department protocols and Guidance, PPG must evaluate rejected data for usability, and provide documentation of the data quality assessment/data usability evaluation. If the rejected data are determined to not be useable, those data must be re-collected unless there is sufficient data from other nearby samples to meet the Department's post-remediation sampling frequencies.

9. Where sample locations are representative of post-excavation soils but analysis was not run for that analyte on that sample (e.g., PPG-B29 on Figure 9A2), "data" reflecting samples were not analyzed (i.e., "NA") should be posted to that sample.

10. Please identify the square footage covered by each excavation area, the linear footage of the excavation sidewall, and respective post-remedial samples associated with each Layout Area for each boundary (bottom and sidewall) to confirm that the appropriate minimum number of samples was collected. It is understood that sidewall samples are not required where adjacent excavations abut.

11. Please check spot elevations, as in multiple instances the spot elevations reported don't correlate with the final remedial contours (e.g., spot elevation reported at location PE-9 is +0.9, whereas the sample is located within the center of the 2.0 MSL contour line, and the shallowest post-excavation sample was collected at —2.8 - —2.3 MSL). Where final excavation limits are slightly deeper than confirmation samples documenting clean condition, those sample results should be posted to the figures (e.g., confirmation sample collected at an elevation of —2.4 - —2.9 MSL, but final excavation depth was at —3.1 MSL).

12. Please also evaluate final excavation contour as it relates to post-excavation sample data. Where post-excavation data are not posted, but post-excavation condition is confirmed by clean samples yet final excavation depth slightly exceeded (6-inches or less) the deepest depth of the clean confirmation sample, please document the clean sample just "inside" the excavation limit.

Specific Comments – Layout Area 1

1. Figures 9A1 through 9A6

    a. PPG1-T02 is shown as being a soil location post-excavation; however, analytical data are not posted to the figure, nor is analytical data included for this sample location on the provided Table 1. Analytical data associated with this sample location must be included on the appropriate figures and table.

    b. Please clarify why sidewall samples 1E-NWSW, 1E-NNSW, and 1E-NESW do not have data posted to the figures and are not included in Table 1. If these samples represent soils which required remedial excavation, please provide the post-remedial analytical results along the northern boundary of this excavation area consistent with Department remedial requirements.

c. Please provide analytical data for samples collected along the boundary between the excavation and the western edge of Building 1 (e.g., IE-B1, IE-B2, IE-B4, IE-SNSW, KO-WEDGE, PPG1-B52, WCD-3, WCD-5, etc.).

2. Figures 9A2 (Antimony), 9A4 (Nickel), 9A5 (Thallium), and 9A6 (Vanadium)

   a. The following locations are shown as post-excavation sample locations, but do not have data posted to Figures 9A2, 9A4, 9A5, and 9A6: B80, PPG1-B26, PPG1-B28, PPG1-B29, PPG1-B30, PPG1-B31, PPG1-B46, PPG1-B52, PPG1-B54, PPG1-B57, PPG1-B59, and PPG1-T04. Note that these locations are presented on the associated Table 1, which shows that antimony, nickel, thallium, and vanadium analyses were **not** run. See General Comment 9, above.

3. Figure 9A1 (Hexavalent Chromium)

   a. Sample 156-B74G_13.5-14.0, collected from location B74 at an elevation of —7.2 - —6.7 ft MSL shows a non-detectable concentration of hexavalent chromium with a reporting limit above the CrSCC. See General Comment 6, above.

   b. B52SW and B80 show rejected data. See General Comment 8, above.

4. Figure 9A2 (Antimony)

   a. Please modify the call-out boxes so the data posted to PE-84 is fully legible.

   b. The analytical results for LA1-1, from an elevation of 2.8 - 3.3 ft MSL must be posted to the figure, since this location is indicated as being excavated to an elevation of 4.0 MSL. Note that antimony exceeded the DIGWSSL at elevation 2.8 - 3.3 ft MSL.

5. Figure 9A3 (Total Chromium)

   a. B80 is shown as post-excavation sample locations, but do not have data posted to Figure 9A3. Note that this location is presented on the associated Table 1, which shows that total chromium analysis was **not** run. See General Comment 9, above.

6. Figure 9A4 (Nickel)

   a. The following samples are shown as exceedances: B97 (3.9-4.9) and B86SE (0.7-1.7). See General Comment 3, above.

7. Figure 9A5 (Thallium) – no additional comments on Figure 9A5.

8. Figure 9A6 (Vanadium)

   a. The following samples are shown as exceedances: B97 (3.9 - 4.9) and PE-59 (1.7 - 2.2). See General Comment 4, above. Please also revise the figure notes accordingly.

Specific Comments – Layout Area 2

1. Figures 9B1 through 9B6

    a. An insufficient number of post-excavation samples have been collected to meet the post-remedial sampling frequency of 30 linear feet for excavation sidewalls and 900 square feet for excavation bottom.

2. Figures 9B2 (Antimony), 9B4 (Nickel), 9B5 (Thallium), and 9B6 (Vanadium)

    a. The following locations are shown as post-excavation sample locations, but do not have data posted to Figures 9B2, 9B4, 9B5, and 9B6: Outside of the excavation: LB-13, LB-14, LB-15, LB-16, DB-1, PPG1-B64, PPG1-B65, PPG1-B55, PPG1-BO6, PPG1-BO7, PPG1-MO1, PPG1-MO5; and Inside the excavation: I-1, PE-9, LB-5, LB-6, PPG1-B56, PPG1-BO5, PPG1-BO8. Note that these locations are presented on the associated Table 1, which shows that antimony, nickel, thallium, and vanadium analyses were **not** run. See General Comment 9, above.

3. Figure 9B1 (Hexavalent Chromium)

    a. Sample 156-M05002, collected at location PPG1-M05 at an elevation of —1.3 - – 0.9 MSL, contains hexavalent chromium at a concentration of 26 beyond the limits of the Layout Area 2 remedial excavation. See General Comment 2, above.

    b. CE5, I-1, and I-4 show rejected data. See General Comment 8, above.

    c. The following locations are shown as post-excavation sample locations, but there are no data posted to Figure 9B1. I-6, PE-57N, PE-57E, and LB-9. Note that these locations are presented on the associated Table 1, which shows that hexavalent chromium analysis was **not** run. See General Comment 9, above.

    d. The following samples report "ND" as the hexavalent chromium concentration rather than the reporting limit with a laboratory qualifier; samples DB-1, LB-6, LB-7, LB-8, LB-13, LB-14, LB-15, LB-16. See General Comment 7 above.

4. Figure 9B2 (Antimony)

    a. The following samples are shown as exceedances: PE 57, PE-57N. Please see General Comment 3, above.

5. Figure 9B3 (Total Chromium)

    a. LA2-1 shows rejected data. See General Comment 8, above.

6. Figure 9B4 (Nickel) – no additional comments

7. Figure 9B5 (Thallium)

    a. The following locations are shown as post-excavation sample locations, but do not have data posted to the figure: LB7 and LB8. Note that these locations are presented on the associated Table 1, which shows that thallium analysis was **not** run. See General Comment 9, above.

8. Figure 9B6 (Vanadium)

    a. Samples PE-54, PE-55 and PE-10 are listed as exceendances ; please see General Comment 4, above. Also revise the figure notes accordingly.

Specific Comments – Layout Area 3

1. Figures 9C1 through 9C6

    a. A sufficient number of post-excavation samples do not appear to have been collected to meet the post-remedial sampling frequency of 30 linear feet for excavation sidewalls and 900 square feet for excavation bottom. See General Comment 10, above.

    b. Please confirm the XY coordinates for boring PPG1-B68; the location as shown on the figure is within the footprint of Building 1.

2. Figures 9C2 (Antimony), 9C4 (Nickel), 9C5 (Thallium), and 9C6 (Vanadium)

    a. The following locations are shown as post-excavation sample locations, but do not have data posted to Figures 9C2, 9C4, 9C5, and 9C6: LB4, PE-35R, PPG1-B11, PPG1-B12, PPG1-B17, PPG1-B21, PPG1-B25, PPG1-B47, PPG1-B49, PPG1-B50, PPG1-B51, PPG1-B58, PPG1-B68, PPG1-M02, PPG1-M03, and PPG1-M04. Note that these locations are presented on the associated Table 1, which shows that antimony, nickel, thallium, and vanadium analyses were **not** run. See General Comment 9, above.

3. Figure 9C-1 (Hexavalent Chromium)

    a. Sample LB3 #005, collected at location LB3 at an elevation of —0.5 - 1.4 MSL, contains hexavalent chromium at a concentration of 32.5 beyond the limits of the Layout Area 3 remedial excavation. See General Comment 2, above. Also, this exceedance was not highlighted with red text.

    b. Please identify the cyan box/symbol along excavation sidewall in grid N7 in the Legend.

    c. I-20, M7, PE-62, and PE-64 show rejected data. See General Comment 8, above.

    d. Please adjust the locations of the call-out boxes for H1-SW and SW PPG1-B483 to ensure legibility of the data presented.

e. Please replace "ND" with the reporting limit and "U" for LB2. See General Comment 7, above.

4. Figure 9C2 (Antimony)

   a. Please replace "ND" with the reporting limit and "U" for LB2 and LB3. See General Comment 7, above.

   b. The following borings had samples with results (**not** shown in red font) that exceeded the DIGWSSL of 6 mg/kg: PE-21 and PE-63. See General Comments 2 and 5, above.

   c. The following borings had samples with results (shown in red font) that exceeded the DIGWSSL of 6 mg/kg: PE-82 and PE-83. See General Comments 2 and 5, above.

5. Figure 9C3 (Total Chromium)

   a. The following locations are shown as post-excavation sample locations, but do not have data posted to Figure 9C3: LB4 and PE-35R. Note that these locations are presented on the associated Table 1, which shows that total chromium analysis was **not** run. See General Comment 9, above.

   b. Please adjust the locations of the call-out boxes for PPG1-B21 and PPG1-M03 to ensure legibility of the data presented.

6. Figure 9C4 (Nickel)

   a. The following borings had samples with results (**not** shown in red font) that exceeded the DIGWSSL of 48 mg/kg: CS-FC-29, M6, PE-20 (—3.4 - —2.9 MSL), and PE-21. See General Comments 2, 3, and 5, above.

   b. The following borings had samples with results (shown in red font) that exceeded the DIGWSSL of 48 mg/kg: PE-17, PE-20 (—0.4 – 0.1 MSL), and PE-80. See General Comments 2, 3, and 5, above.

   c. There appears to be a gap in the call-out box associated with boring PE-21. It is not clear whether data are missing or if it is a spacing issue. Please address.

7. Figure 9C5 (Thallium)

   a. The following locations are shown as post-excavation sample locations, but do not have data posted to Figure 9C5: LB1, LB2, and LB3. Note that these locations are presented on the associated Table 1, which shows that thallium analysis was **not** run. See General Comment 9, above.

   b. PE-80 had a sample with results (shown in red font) that exceeded the DIGWSSL of 3 mg/kg. See General Comments 2 and 5, above.

c. Please add a leader line between the call-out box and the sample location for K3-SW.

8. Figure 9C6 (Vanadium)

   a. The following borings had samples with results (shown in red font) that exceeded the RDCSRS of 78 mg/kg: K2, M6, PE-17, PE-20, PE-21, and PE-80. See General Comment 4, above. Also revise the figure notes accordingly.

   b. CS-FC-29 had a sample with results (**not** shown in red font) that exceeded the DIGWSSL of 783 mg/kg. See General Comment 4, above. Also revise the figure notes accordingly.

Specific Comments – Outside of Layout Areas

1. Figures 9D2 (Antimony), 9D4 (Nickel), 9D5 (Thallium), and 9D6 (Vanadium)

   a. All of the sample locations are shown as post-excavation sample locations, but do not have data posted to Figures 9B2, 9B4, 9B5, and 9B6: Note that these locations are presented on the associated Table 1, which shows that antimony, nickel, thallium, and vanadium analyses were **not** run. See General Comment 9, above.

2. Figure 9D1 (Hexavalent Chromium)

   a. The following sample locations list "ND" for hexavalent chromium concentration rather than the reporting limit with a laboratory qualifier. Samples LB-10, LB-11, and LB-12. Please see General Comment 7, above.

3. Figure 9D3 (Total Chromium)

   a. PPG1-B44 shows rejected data, please see General Comment 8, above.

Specific Comments – Table 1

1. Please correct the sample elevation interval for the following samples: 156-PE-16D(9.5-10)X; 156-PE-41F(11-11.5)X; 156-PE41G(13-13.5)X; 156-PE-61D_5.5-6.0; 156-PE-61E_10.0-10.5; and 156-PE-61F_11.5-12.0. Also correct the associated sample elevation intervals on the associated figures, if necessary.

2. All data qualifiers must be included in the notes at the bottom of the table (e.g., J, U, R, etc.)

11/7/14 High-level comment #1: Analytical data associated with soils/concrete removed during the course of the remedial action should not be presented in tables/figures depicting "post-excavation" conditions. If PPG wishes to present the entirety of the data set, environmental samples representative of materials which were removed during excavation may be provided in tables/figures in an appendix. Such information should be clearly described as interim sample results or pre-final excavation sample results or some other designation which makes it clear that they do not represent the condition of soils/concrete remaining once final remedial limits were achieved.

Assessment of how comment was addressed: While the data table seemingly presented the data depicting soils remaining post-remediation, the method these data were presented make it extremely difficult to use in evaluating the completeness of the remediation, or even completeness of the data presented. The analytical data for all soil samples (regardless of sampling event used to collect them) representing soils that remain following the remedial action should be presented in the format used in the October 2014 Draft Remedial Action Report for Site 156 (see Table 1A), with the addition of excavation elevation associated with each sample location (either measured/surveyed or extrapolated from as-built cut lines).

11/7/14 High-level comment #2: Analytical data associated with soils remaining following excavation, whether the source of that data was the Remedial Investigation (RI), the pre-design sampling program, or the post-excavation sampling program should be presented in a table (or tables) and a figure or series of figures, organized by Layout Area/Remedial Area. All data should be presented with elevations rather than (or in addition to) depths. Additionally, for all sample locations where spot-elevations were collected, the remedial excavation elevation corresponding to that sample location should also be presented. PPG/AECOM may wish to refer to these table(s)/figure(s) as "confirmation sample analytical results". Please note that a high-level review of the figures provided in the RAR indicated that a significant amount of RI data were not included in the pre-excavation or post-excavation figures.

Assessment of how comment was addressed: While the figures were revised to present analytical data remaining post-remediation, they did not include all data (e.g., those results deeper than the shallowest clean sample, those results beyond the limits of the layout area). Also, it was observed that not all borings were depicted on each figure, which can lead to confusion. It is recommended that data be presented similarly to the soil comparison figures in the February 2012 Garfield Avenue Group RIR (e.g., Southern Garfield Avenue Sites Figures 5-8, 5-14, and 5-26) in that where data were not associated with a specific sample location, the sample location was marked on the map but without associated analytical data. Also, the requested figures would present all analytical data associated with that sample point remaining post-remedy (similar to the analytical data presented on the referenced GAG RIR figures). If the GAG RIR figures are used as templates for the Metropolis Towers RAR figures, the "call-out box" data presentation should be modified to add sample elevations.

11/7/14 High-level comment #3: The remedial limits shown on the post-excavation sampling figures and the post-remedial action as-built figures are inconsistent. Figures showing confirmation sampling

results should have excavation limits that are consistent with the post-remedial action as-built drawings. As discussed in Comment #2 above, all data collected beyond the excavation limits should be clearly shown on those figures in a way that allows the user to compare the remedial limit elevation to the sample result elevation.

Assessment of how comment was addressed: While the figures depicting post-remedial soil conditions appear to have been revised to be consistent with the as-built excavation limits, the data beyond the horizontal and vertical limits of the remedial excavation do not appear to have been included on the figures, as discussed in association with high-level comment 2, above.

11/7/14 High-level comment #4: Where individual samples (which are representative of final excavation limits) contain CCPW-metal concentrations in excess of their respective remedial standards (e.g., K2-bottom sample on Table 2C), PPG must document attainment of Department standards consistent with the Department's *Technical Guidance for the Attainment of Remediation Standards and Site-Specific Criteria* (September 24, 2012, Version 1.0). Note that this guidance cannot be used to document compliance with the hexavalent chromium criterion.

Assessment of how comment was addressed: Weston cannot determine if this comment was addressed. Since the data were presented in a confusing manner (see discussion of high-level comment 1, above), we were not able to determine if there were any non-hexavalent chromium compounds remaining above remedial standards post-remedy to which the Department's technical guidance would be applied. The data need to be presented in such a manner that it is possible to determine whether the Department's standards have been met.

11/7/14 High-level comment #5: All highlights/bolding/shading provided in figures and tables must be clearly explained in the legend/notes. For example, the meaning of the pink shading on Table 2A was not provided.

Assessment of how comment was addressed: This comment was not fully addressed. For example, the significance of the "red rings" around certain sampling points on Figure 9C6 was not provided in the Legend, data qualifiers were not defined, and the significance of cutline elevation "-9999" on the table was not defined.

Agenda
Metropolis Towers Remedial Action Report Technical Meeting
22 September 2015

- Introduction (M McCabe)
- Reason for Meeting (T Cozzi)
- Iterative Submittals/Meetings (Handout 1)
- Outstanding Issues – Detailed sample by sample information needed to prevent repeated mobilizations
    1. Exceedances beyond cut lines (examples: Cr^{+6} @ MW05, Cr^{+6} @ LB3, IGWSSL exceedances without single-point compliance)
    2. Data usability (e.g., rejected data, elevated detection levels)
    3. Addressing IGWSSL exceedances consistent with Department Guidance (example: Layout Area 1)
    4. Insufficient documentation of confirmation-sampling frequency (example: Layout Area 2)
    5. Sample elevation vs. excavation limits (example: PE-9)
- Programmatic RAR Figures/Tables Requirements (Handout 2)
- Discussion: Methods for Resolution

Handout #1

Summary of Issues Related to Metropolis Towers Figures and Tables

Comment/Issue	11/7/14 comments / 12/18/14 meeting	2/16/15 email / 3/11/15 meeting	6/29/15 comments / meeting	Outstanding Issues as of 9/3/15 (1)
Do not include data for soils/concrete removed during remedial action on figures depicting post-remedial conditions	●	●		
Where confirmation samples were collected just "inside" remedial limits and represent post-excavation conditions, those samples can and should be included on figures and tables			●	**Issue #4**
Data representing post-remedial conditions must be presented on figures/tables, regardless of which sampling event generated the data	●			
All data collected beyond excavation limits must be presented	●	●		
Sample elevation data must be provided	●	●		
Figures showing post-remedial samples should depict as-built remedial limits	●			
Where single-point compliance is not achieved, must document attainment of remedial standards consistent with *Technical Guidance for the Attainment of Remediation Standards and Site-Specific Criteria* (does not apply to Cr^{+6})	●	●	●	**Issue #3**
All highlights, boldings, shadings shown on figures/tables must be explained in Legend/Notes	●	●		
Cr^{+6} exceedances addressed through use of test pits for visual observation and sample collection			●	**Issue #1**
Site-specific (e.g., vanadium direct-contact) and Layout Area-specific (e.g., nickel IGWSSL) remedial standards must be used			●	
Since IGWSSL only apply to soils in the vadose zone, identify water table elevation to document where IGWSSL do not apply			●	**Issue #3**
"Non-detect" results must identify reporting limit; must evaluate usability of those results where reporting limit exceeds remedial standard			●	**Issue #2**
Rejected data should be evaluated for usability consistent with Department protocols and Guidance; where data are determined to not be usable and needed to meet sample coverage requirements, samples must be re-collected			●	**Issue #2**
Confirm adequate sample frequency for bottom and sidewall samples			●	**Issue #4**
Check spot elevations against data presented on excavation contours and post-excavation sampling elevations			●	**Issue #5**

● This issue was identified in comments/discussed at associated meeting

(1) Issue number corresponds to "Outstanding Issue" number identified on 9/22/15 meeting agenda

Matrongolo, Eileen

From: Amend-Babcock, Laura
Sent: Monday, June 01, 2015 1:56 PM
To: 'bmcpeak@planningprogress.com'
Cc: Amin, Prabal; Tom Cozzi; David Doyle
Subject: Garfield Avenue Group RAR figures/tables requested format

Brian, the following presents the requested Remedial Action Report figures/tables data presentation format. Please distribute this information to the appropriate parties.

General:

1. Analytical data associated with soils remaining following excavation, whether the source of that data was the remedial investigation, pre-design investigation, post-excavation sampling, or any other sampling event, should be presented on a table (or tables) and a figure (or series of figures), organized by previously-identified remedial area (e.g., IRM #1, Phase 1C).

2. All data should be presented with elevation in addition to depth on tables. On figures, elevations only (rather than elevations and depths) may be presented for clarity sake. For all sample locations where spot elevations were collected, the remedial excavation elevation corresponding to that sample location should also be presented.

3. Analytical data associated with materials which were removed during the course of the remedial action should **not** be presented in the tables/figures depicting post-remedial conditions. If PPG wishes to present the entirety of the data set, environmental samples representative of materials which were removed during excavation may be provided in tables/figures in an appendix to the Remedial Action Report. Such information should clearly described as interim sample results, or pre-final excavation sample results, or some other designation which makes it clear that they do not represent the condition of materials remaining once final remedial limits were achieved.

4. Where individual samples which are representative of final excavation limits contain contaminants in excess of remedial standards, PPG must document attainment of Department standards consistent with the Department's *Technical Guidance for the Attainment of Remediation Standards and Site-Specific Criteria* (September 24, 2012, Version 1.0). Note that this guidance cannot be used to document compliance with the hexavalent chromium criterion. Additional figures/tables must be provided, as necessary, wherever the Department's guidance is applied.

5. Where individual samples representative of post-remedial condition contain hexavalent chromium in concentrations greater than 20 milligrams per kilogram, PPG must document the soil matrix from which that sample was collected, and the sample depth relative to anticipated final design grade. These data are necessary to document compliance with the Department's chromium policy and the Tom Cozzi 8/13/13 letter *Updated Method to Determine Compliance with the Department's Chromium Policy; Garfield Avenue Group – Sites 114, 132, 133, 135, 137, and 143; Jersey City, New Jersey*.

6. All highlights/bolding/shading/etc. on figures and tables must be clearly explained in the figure legends and table notes.

Tables:

1. Due to anticipated differences in elevation between initial and anticipated final grade, as well as the need to document compliance with the Department's "20-20" policy, both depth and elevation data should be tabulated for all samples.

2. Data tables should be presented in a format consistent with Tables 5-1 through 5-9 of the Garfield Avenue Group Remedial Investigation Report with the following changes:
    a. All analytical results, not only exceedances, must be presented for samples representing soils which remain following remedial action.
    b. Exceedance of applicable remedial standards must be clearly identified. Also see General #4, above.
    c. Sample elevation must be provided in addition to sample depth. See General #2, above.
    d. "ND" sample results must identify the reporting limit for the non-detection.

3. Figures must be provided to document the use of the Department's *Technical Guidance for the Attainment of Remediation Standards and Site-Specific Criteria*, wherever used. See General #4, above.

Figures:

1. The area covered under each submittal should be graphically identified on a site-wide key map.

2. Sample results should be posted to the sampling locations in a format consistent with Figures 5-1 through 5-3 in the Garfield Avenue Group Remedial Investigating Report with the following changes:
    a. Samples collected from materials which were excavated should not be included.
    b. Sample elevation must be identified. See General #2, above.
    c. Exceedance of applicable remedial standards must be clearly identified. Also see General #4, above.

3. All sample locations should be presented on all figures, similar to the method used in Figures 5-8, 5-14, and 5-26 of the Garfield Avenue Group Remedial Investigation Report.

4. The pre-excavation elevations and the excavation limits/elevations achieved must be presented on a figure. Contours must be presented in a scale sufficient to accurately describe the remedial limits achieved.

5. Figures must be provided to document the use of the Department's *Technical Guidance for the Attainment of Remediation Standards and Site-Specific Criteria*, wherever used. See General #4, above. Where attainment of the Department's standards cannot be met, the limits of the anticipated deed notice must be identified.

Please feel free to reach out to me if you have any questions on the above.

Laura

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From:	LoPilato, Alfred
To:	Hunt, Claire
Subject:	FW: Site 156 - Metropolis Towers Supplemental RI Scope of Work
Date:	Friday, March 11, 2016 12:14:11 PM
Attachments:	image001.jpg image002.png

FYI.....

From: Amend-Babcock, Laura [mailto:Laura.Amend-Babcock@WestonSolutions.com]
Sent: Friday, March 11, 2016 12:12 PM
To: Gibbons, Thomas; James D. Ray; Ronald Riccio; Nancy Colson
Cc: 'Cozzi, Tom'; 'David Doyle'; Keith Prins (Prins@ppg.com); PE Mark E. Terril (terril@ppg.com); Overmyer, Jody; Amin, Prabal; Dave Spader (dspader@erfs.com); 'Bhavini Doshi (BDoshi@jcnj.org)'; Jason Watson (Jwatson@jcnj.org); jfarrell@jcnj.org; LoPilato, Alfred; Conrey, Nanette; Mikaelian, Scott
Subject: RE: Site 156 - Metropolis Towers Supplemental RI Scope of Work

On behalf of the New Jersey Department of Environmental Protection (Department), Weston is providing the following comments on the *PPG Site 156 (Metro Towers) Revised Scope of Work and Technical Rationale for Supplemental Remedial Investigation; Soil and Groundwater Sampling* (Plan) dated February 26, 2016.

General Comments:

1. The Plan is acceptable and approved for use upon PPG's confirmation that the specific comments identified below will be addressed. Please finalize the Plan by addressing the comments below; however, the plan revision may be done concurrently with moving forward with field implementation of the Plan.

Specific Comments:

1. Section 1.0: The meeting identified in the fourth paragraph occurred on March 11, 2015, not on March 4 as indicated.

2. Section 2.1.1.1: Since the deepest exceedance (LA1-1) for a sample within the shallow scrape area was collected at an elevation of 2.8-3.3 feet above mean sea level (ft amsl), the shallow excavation must extend to at least 2.8 ft amsl, rather than 3 ft amsl as identified, and the post-excavation bottom sample should be biased to the location of former sample LA1-1.

3. Section 4: The proposed construction of MW-10 is not consistent with N.J.A.C 7:9D. Any proposed deviations from the construction standards must be submitted in writing to the State (via the well drilling permit application process) and approved prior to construction of the well. Therefore, the Department recommends that PPG install the proposed MW-10 (e.g., prepack well screen with low-flow sampling) as a temporary well consistent with N.J.A.C. 7:9D.

   Additionally, it is recommended that the sequencing of the installation and sampling of MW-10 is done such that the well can be installed, sampled, and abandoned if appropriate, in advance of the installation of the boiler room engineering control remedy described in the January 2016 *Remedial Investigation Report/Remedial Action Work Plan; Building No. 2 - Boiler Room; Subslab Soil and Interior Concrete Surfaces (AOC 3) Revision 2*.

4. Section 5.1: As indicated in specific comment 2 above, the shallow excavation must reach a

target terminal depth consistent with at least 2.8 ft amsl, not -3 ft amsl as indicated in the second sentence.

5. Table 1: The following changes should be made to Table 1.

Proposed Location ID	Grid ID	Required Change	Rationale for Change
CS SS10b-BTM	C-2	Revise Sample Elevation from 3-2.5 ft amsl to 2.8-2.3 ft amsl	See specific comment #2, above
CS SS1b-SW1	C-2	Remove antimony from Analyses	For consistency with Section 2.1.3 of Plan (which calls for one sample) and with Figure 1 (which shows this location as analysis for Cr^{+6} only)
CS SS1b-SW3	C-2	Remove antimony from Analyses	For consistency with Section 2.1.3 of Plan (which calls for one sample) and with Figure 1 (which shows this location as analysis for Cr^{+6} only)
CS LB3	L3	Include "(to be converted to MW-8)" in Method	For consistency with Section 4 of Plan and Figure 1

6. Table 2: The following changes should be made to Table 2.

Well ID	Required Change	Rationale for Change
MW-7	Identify well location as boring CS H5 in grid H5, and revise X- and Y-coordinates accordingly	For consistency with Plan section 4.0 and Figure 1
MW-8	Identify well location as boring LB3 in grid K3, and revise X- and Y-coordinates accordingly	For consistency with Plan section 4.0 and Figure 1

7. Table 3: The following changes should be made to Table 3.

Well ID	Required Change	Rationale for Change
MW-7	Identify grid ID as H5	For consistency with Plan section 4.0, revised Table 2, and Figure 1
MW-8	Identify grid ID as K3	For consistency with Plan section 4.0, revised Table 2, and Figure 1

8. Appendix A Table 1.1: Please identify the Layout Area-specific impact to groundwater soil screening levels (IGWSSLs) for nickel developed by PPG for Site 156 (i.e., 411 milligrams per kilogram [mg/kg] for Layout Area 1; 322 mg/kg for Layout Area 2; and 565 mg/kg for Layout Area 3) rather than the default IGWSSL identified in Table 1.1. Alternately, PPG may opt to apply the most stringent Layout Area-specific IGWSSL (i.e., 322 mg/kg) to the entire site.

9. Appendix A, first paragraph following Table 2.1-1: Please remove the last sentence "Collection of a sample from the peat layer at this location is proposed to confirm the non-detect" as this sample is neither proposed nor requested.

10. Appendix A, second paragraph following Table 2.1-3: Please confirm that the surface elevation at PE-81 is 8.2 ft amsl, not 8.2 ft bgs as stated, and revise the text as necessary.

11. Appendix A, Table 2.4-1: Please correct the typographical errors:
    a. Grid E4 neighboring boring is (PPG1-B66) rather than (PPG1-B56).
    b. Grid J2 neighboring borings are (J2, FC-18) rather than (J2, CS J2).

Laura
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From: Gibbons, Thomas [mailto:thomas.gibbons@cbi.com]
Sent: Friday, February 26, 2016 4:50 PM
To: James D. Ray <Jray@mdmc-law.com>; Ronald Riccio <RRiccio@mdmc-law.com>; Nancy Colson <ncolson@mdmc-law.com>
Cc: 'Cozzi, Tom' <Tom.Cozzi@dep.state.nj.us>; 'David Doyle' <David.Doyle@dep.nj.gov>; Keith Prins (Prins@ppg.com) <Prins@ppg.com>; PE Mark E. Terril (terril@ppg.com) <terril@ppg.com>; Overmyer, Jody <overmyer@ppg.com>; Amin, Prabal <Prabal.Amin@WestonSolutions.com>; Amend-Babcock, Laura <Laura.Amend-Babcock@WestonSolutions.com>; Dave Spader (dspader@erfs.com) <dspader@erfs.com>; 'Bhavini Doshi (BDoshi@jcnj.org)' <BDoshi@jcnj.org>; Jason Watson (Jwatson@jcnj.org) <Jwatson@jcnj.org>; jfarrell@jcnj.org; Alfred LoPilato (Alfred.LoPilato@aecom.com) <Alfred.LoPilato@aecom.com>; Conrey, Nanette <Nanette.Conrey@aecom.com>; Scott Mikaelian (Scott.Mikaelian@aecom.com) <Scott.Mikaelian@aecom.com>
Subject: Site 156 - Metropolis Towers Supplemental RI Scope of Work

Jim,

On behalf of PPG Industries, we are transmitting AECOM's revised remedial investigation scope of work for Metropolis Towers. Please see below for more information regarding this submission and instructions for downloading. Let me know if you have any questions or concerns.

Have a nice weekend.

Tom

Thomas M. Gibbons, PMP
Program Manager
New Jersey Chrome
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Email: Thomas.Gibbons@cbi.com

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Trenton, NJ 08691
USA

From: LoPilato, Alfred [mailto:Alfred.LoPilato@aecom.com]
Sent: Friday, February 26, 2016 4:32 PM
To: Gibbons, Thomas
Cc: Mikaelian, Scott; Conrey, Nanette; Hunt, Claire
Subject: Site 156 Metropolis Towers Supplemental RI Scope of Work

TEAM:

Below, please find download links to the Site 156 Metropolis Towers Supplemental Remedial Investigation Scope of Work Memo, Revision 2.

This version of the Memo incorporates Weston/NJDEP comments to prior versions, and includes the results of discussion that took place with Weston/NJDEP on February 2, 2016 at AECOM's office in Piscataway, NJ.

Please feel free to contact me should you have any questions.

These files will be available for download until 3/4/2016

File	Description	Size
2016_02_26 Site 156 SOW Memo_FULL_F.pdf		1,819KB
2016_02_26_Site 156 SOW Memo_App A_Att 2_Boring Logs.pdf		21,194KB
2016_02_26_Site 156 SOW Memo_App A_Att 3_Field Logs.pdf		55,028KB
2016_02_26_Site 156 SOW Memo_APPENDIX A_Rationale_FULL_F.pdf		10,267KB

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From:	Amend-Babcock, Laura
To:	Conrey, Nanette; rriccio@mdmc-law.com; jray@mdmc-law.com; ncolson@mdmc-law.com; Amin, Prabal; David.Doyle@dep.nj.gov; Tom.Cozzi@dep.nj.gov; feinberg@ppg.com; overmyer@ppg.com; dspader@erfs.com; Gibbons, Thomas (thomas.gibbons@cbi.com); prins@ppg.com; Mikaelian, Scott; LoPilato, Alfred; Gardner, Mike; ian.curtis@dep.nj.gov
Cc:	Hunt, Claire
Subject:	RE: Site 156 Revised Soil RA Work Plan and Survey Controls Review - Final
Attachments:	image001.png

As verbally relayed to A LoPilato and C Hunt, the following comments are being provided specific to the field activities proposed in the September 23, 2016 *PPG Site 156 (Metro Towers) Supplemental Remedial Investigation Results, Survey Controls Review, and Additional Remedial Investigation Activities Work Plan* (Work Plan). These comments were verbally provided by NJDEP and Weston on 10/19/2016, in advance of the comments for the non-field-activities portions of the Work Plan which will follow by 10/21/16, with the understanding that the field work is currently being implemented at the site.

Specific to the sidewall sampling proposed for the test trenches installed at CS LB3 and CS PS3-1, the elevations of the post-excavation (trench box) sidewall samples must be collected an elevation consistent with the prior exceedances. This would also result in two sets of sidewall samples for CS PS3-1, one from each sidewall at an elevation of —3.4 to —3.9 feet mean sea level (ft msl), and one from each sidewall at an elevation of —5.4 to —5.9 ft msl. Test pit bottom samples should be collected as proposed in the Work Plan.

Specific to the series of borings being installed around CS L5 to remove the exceedance via overdrilling, the borings should be extended vertically to below the prior exceedance. For example, the prior exceedance was detected at —3.0 to —3.5 ft msl, so the overdrilling (post-remediation) samples should be collected below—3.5 ft msl, rather than from an elevation of —3.1 to —3.6 ft msl as proposed in the Work Plan.

Additionally, please collect one soil sample for hexavalent chromium and TCL/TAL parameters from the soil used to backfill the shallow scrape area.

Regards,

Laura

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From: Conrey, Nanette [mailto:Nanette.Conrey@aecom.com]
Sent: Friday, September 23, 2016 5:52 PM
To: rriccio@mdmc-law.com; jray@mdmc-law.com; ncolson@mdmc-law.com; Amend-Babcock, Laura <Laura.Amend-Babcock@WestonSolutions.com>; Amin, Prabal <Prabal.Amin@WestonSolutions.com>; David.Doyle@dep.nj.gov; Tom.Cozzi@dep.nj.gov; feinberg@ppg.com; overmyer@ppg.com; dspader@erfs.com; Gibbons, Thomas (thomas.gibbons@cbi.com) <thomas.gibbons@cbi.com>; prins@ppg.com; Mikaelian, Scott <Scott.Mikaelian@aecom.com>; LoPilato, Alfred <Alfred.LoPilato@aecom.com>; Gardner, Mike

<mike.gardner@aecom.com>
Cc: Hunt, Claire <Claire.Hunt@aecom.com>
Subject: Site 156 Revised Soil RA Work Plan and Survey Controls Review - Final

Ron,

On behalf of PPG, we are providing the attached *Revised Metro Towers Soil RI Work Plan* for review by the JCO Team. This document includes a Supplement Remedial Investigation Results, Survey Controls Review and Additional Remedial Investigation Activities Work Plan. The Survey Controls Review summary addresses Weston's comments from their initial Work Plan review. We ask that you complete your review by October 21, 2016.

The Memorandum Text is provided in an attached Word document. A PDF copy of the Memorandum (in its entirety) is provided in the linked folders below:

These files will be available for download until 9/30/2016

File	Description	Size
2016 09 23 Site 156 Supp RI & Survey Controls Memo-F.pdf	PPG Site 156 (Metro Towers) Supplemental Remedial Investigation Results, Survey Controls Review and Additional Remedial Investigation Activities Work Plan	9,505KB
Att1 SOW Memo.pdf	Attachment 1 Scope of Work Memorandum	86,854KB
Att4 Lab Data.zip	Attachment 4 Laboratory Results	69,823KB
Att6 Survey.zip	Attachment 6 Revised Post-Excavation As-Built Drawing and Spot Elevation File	2,560KB

Download all files (.zip)

Please let me know if you have any questions.

Regards,

Nanette Conrey
Project Manager
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nanette.conrey@aecom.com

AECOM
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Piscataway, NJ 08534
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From:	Amin, Prabal
To:	Conrey, Nanette; rriccio@mdmc-law.com; jray@mdmc-law.com; ncolson@mdmc-law.com; Amend-Babcock, Laura; David.Doyle@dep.nj.gov; Tom.Cozzi@dep.nj.gov; feinberg@ppg.com; overmyer@ppg.com; dspader@erfs.com; Gibbons, Thomas (thomas.gibbons@cbi.com); prins@ppg.com; Mikaelian, Scott; LoPilato, Alfred; Gardner, Mike
Cc:	Hunt, Claire
Subject:	RE: Site 156 Revised Soil RA Work Plan and Survey Controls Review - Final
Date:	Friday, October 21, 2016 4:02:05 PM
Attachments:	image001.png RE Site 156 Revised Soil RA Work Plan and Survey Controls Review - Final.msg

Weston has reviewed the September 23, 2016 *PPG Site 156 (Metro Towers) Supplemental Remedial Investigation Results, Survey Controls Review and Additional Remedial Investigation Activities Work Plan* (Work Plan) prepared by AECOM on behalf of PPG. We have consulted with the New Jersey Department of Environmental Protection (Department) and are providing the comments below.

The Department understands that the field effort has been initiated to meet the current schedule. Comments specific to the Work Plan activities were provided, both verbally and via email, on 10/19/16 to facilitate the field implementation of the Work Plan. A copy of the email containing the comments provided on 10/19/16 is attached to these comments for reference.

Please note that although the Department is not requiring PPG to provide a revised Work Plan, PPG should document acceptance of these comments in a Response-to-Comment (RTC) letter and address the noted issues in the future Remedial Action Report (RAR).

General Comment

1. A statement is made that one of the reasons for the differences between the DGA depth observed in the field and the excavation bottom as presented in the as-built drawings is that the on-site historic fill is similar in nature to the imported DGA fill. This does not comport with field observations made by Weston oversight personnel that indicated DGA fill was very homogenous, whereas the pre-excavation fill was heterogeneous in nature with historic fill artifacts present (e.g., brick, wood fragments, etc.). Additionally, the soil descriptions provided in the boring logs attached to the Work Plan show differing soil types between the imported DGA backfill and the pre-excavation fill. Please refrain from including references to the similarity of the pre-excavation fill to the post-excavation backfill from future submittals.

Specific Comments

1. Third paragraph, second bullet: Layout Area 1 was not depicted on the As-Built drawing presented in Attachment 6. Note that the final excavation limits of all remedial areas must be documented in the RAR, depicted consistent with the requirements set forth in N.J.A.C. 7:26E-1.6.

2. Section 4.0, page 6, first full paragraph: The text indicates that the limits of the shallow excavation associated with former samples LA1-1 and PPG1-TO2 was surveyed by Maser, but that "survey locations are not available at this time." Please ensure that the RAR figures include all survey information rather than approximate locations as provided in this submittal.

-

3. Section 8.2, bullets: The text discusses the differences between post-excavation confirmation sample location and as-built excavation bottom elevations at the locations for each of six samples. With the exception of SW PE-50, these samples could not be found on Figure 5 with their identified sample names. A review of prior submittals (e.g., April 2015 revised RAR figure submittal) suggests that these locations are identified on the figure with alternate sample identifiers (e.g., "B(-1)SIDEWALL 2014.05.09" appears as "B(-1)-SW" on Figure 5; "K1-BLDG1-SIDEWALL" appears as "K1-SW-B1" on Figure 5). Please ensure that all information presented in the RAR is internally consistent or appropriately cross-referenced.

-

4. Section 10.6: The reported elevation for boring CS K7L7 in the text (—4.69 ft msl) does not agree with the reported elevation for this boring presented in Table 4 (—4.0 ft msl). Please resolve this discrepancy in future submittals.

-

5. Section 13.2, second paragraph: Please ensure that the reference to "CS I12" is corrected to CS I2 if/when this information is provided in subsequent submittals.

-

6. Figure 5: Please ensure future submittals, including the final RAR, address the issues listed herein:

   a. While spot elevations were provided for a number of samples, many of those values are obscured by the "ring" that identifies whether the sample was a sidewall or bottom sample. All information must be presented legibly on the figures.

   b. The contours of Layout Area 1b/2b should be revised as appropriate to document final excavation elevations of the shallow scrape area shown in the inset box.

   c. The vertical extent of the excavations associated with the test pits installed at PPG1-M05, CS LB3, CS PS3-1, and the additional large-diameter borings at CS L5 should be depicted on the final figure.

7. Attachment 6, Revised Post-Excavation As-Built Drawing and Spot Elevation Files: It is noted that the revised post-excavation as-built drawing excludes Layout Areas 1a and 1b. Please note that PPG needs to provide an excavation as-built drawing that reflects the entirety of the remedial excavation in the

RAR. Furthermore, the as-built drawing should incorporate all post-remedy investigation and excavation activities currently underway.

Thanks.

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Edison, NJ 08837

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From: Conrey, Nanette [mailto:Nanette.Conrey@aecom.com]
Sent: Friday, September 23, 2016 5:52 PM
To: rriccio@mdmc-law.com; jray@mdmc-law.com; ncolson@mdmc-law.com; Amend-Babcock, Laura; Amin, Prabal; David.Doyle@dep.nj.gov; Tom.Cozzi@dep.nj.gov; feinberg@ppg.com; overmyer@ppg.com; dspader@erfs.com; Gibbons, Thomas (thomas.gibbons@cbi.com); prins@ppg.com; Mikaelian, Scott; LoPilato, Alfred; Gardner, Mike
Cc: Hunt, Claire
Subject: Site 156 Revised Soil RA Work Plan and Survey Controls Review - Final

Ron,

On behalf of PPG, we are providing the attached *Revised Metro Towers Soil RI Work Plan* for review by the JCO Team. This document includes a Supplement Remedial Investigation Results, Survey Controls Review and Additional Remedial Investigation Activities Work Plan. The Survey Controls Review summary addresses Weston's comments from their initial Work Plan review. We ask that you complete your review by October 21, 2016.

The Memorandum Text is provided in an attached Word document. A PDF copy of the Memorandum (in its entirety) is provided in the linked folders below:

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Att1 SOW Memo.pdf	Attachment 1 Scope of Work Memorandum	86,854KB
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Att6 Survey.zip	Attachment 6 Revised Post-Excavation As-Built Drawing and Spot Elevation File	2,560KB

Download all files (.zip)

Please let me know if you have any questions.

Regards,

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From: Amin, Prabal
To: Conrey, Nanette; Ronald Riccio; James D. Ray (jray@mdmc-law.com); Nancy Colson; Cozzi, Tom; David Doyle (David.Doyle@dep.nj.gov); Amend-Babcock, Laura; dmrusso@aol.com; arthur.senor@rve.com; dspader@erfs.com; bdoshi@jcnj.org
Cc: terril@ppg.com; overmyer@ppg.com; feinberg@ppg.com; dorothy.laguzza@leclairryan.com; joseph.lagrotteria@leclairryan.com; Mikaelian, Scott; LoPilato, Alfred; Hunt, Claire
Subject: RE: Site 156 Supplemental Soil RIWP
Date: Friday, March 24, 2017 11:36:15 AM
Attachments: image001.png

Weston has reviewed the February 20, 2017 *PPG Site 156 (Metro Towers) Supplemental Remedial Investigation Results, Survey Controls Review and Additional Remedial Investigation Activities Work Plan* (Work Plan) prepared by AECOM on behalf of PPG. We have discussed our comments with the New Jersey Department of Environmental Protection (Department), and are providing the comments below on the Department's behalf:

General Comments

1. As discussed between NJDEP, PPG, AECOM, and Weston on March 23, 2017, the Department is requesting that PPG implement the work in accordance with the schedule proposed below, with the understanding that PPG and the Department will revisit the schedule during the next revision to the Master Schedule by the Site Administrator.
2. This Work Plan is considered conditionally approved and PPG should move forward with its implementation concurrent with making the required revisions to this Work Plan.

Specific Comments

1. Section 5.2, Section 8.0, third paragraphs: Please remove the following statement from the Work Plan: "*In their comments on the March 2016 work plan, NJDEP/Weston did not request or require sampling of the soil prior to placement, but NJDEP/Weston recently requested that the material be sampled as part of this Supplemental RI.*"
2. Section 8.1, Section 8.2, and Table 6:
   a) Analysis of the proposed additional samples for CCPW metals is not required since all results of the samples associated with the October/November 2016 supplemental remedial program achieved compliance with remedial goals for CCPW metals.
   b) It is also recommended that data validation be expedited to ensure, in a timely manner, that the data are of sufficient quality to use for decision-making purposes.
3. Attachment 5: The Attachment included the mine registration certificate from the source of the DGA backfill used to fill the test pits (Tilcon Oxford quarry), which is sufficient to document compliance with the Department's *Fill Material Guidance for SRP Sites*. Because inclusion of the analytical data related to DGA samples collected from Tilcon Mount Hope and Tilcon Pompton Lakes quarries could cause confusion for future users of the document, please remove the analytical data from the Attachment.

-

Metropolis Towers Proposed Schedule

Description of Work	Duration	Begin	End	Comments
Field Activities - Drilling	2 weeks	4/3/17	4/14/17	18 proposed PDI borings plus contingency borings (as needed) for horizontal delineation.
Lab Results/Data Validation	30 days	4/17/17	5/26/17	
Report/Recommendations	2 weeks	5/30/17	6/9/17	A RIR or RAWP is not required. This task is for the evaluation of remedial action and path forward to address the known exceedances.
Procurement of Remediation Contractor	4 weeks	6/12/17	7/7/17	Includes coordination to complete RA activities.
Field Activities - Excavation	2 weeks	7/10/17	7/21/17	No post-excavation samples required if PDI borings delineate extent of excavation.
RAR Submittal	7 weeks	Ongoing	9/8/17	Includes revised RAR per the 11/7/2014 high-level assessment email and incorporates additional sampling/remediation to date.
Weston/NJDEP Review	7 weeks	9/11/17	10/27/17	
PPG/AECOM RTC	2 weeks	10/30/17	11/10/17	
Weston/NJDEP Review/RTC	2 weeks	11/13/17	11/28/17	
PPG/AECOM RTC - FINAL	2 weeks	11/29/17	12/12/17	
NJDEP RAR determination	2 weeks	12/13/17	12/29/17	

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From: Conrey, Nanette [mailto:Nanette.Conrey@aecom.com]
Sent: Monday, February 20, 2017 5:52 PM
To: Ronald Riccio <RRiccio@mdmc-law.com>; James D. Ray (jray@mdmc-law.com) <jray@mdmc-law.com>; Nancy Colson <ncolson@mdmc-law.com>; Cozzi, Tom <Tom.Cozzi@dep.nj.gov>; David Doyle (David.Doyle@dep.nj.gov) <David.Doyle@dep.nj.gov>; Amin, Prabal <Prabal.Amin@WestonSolutions.com>; Amend-Babcock, Laura <Laura.Amend-Babcock@WestonSolutions.com>; dmrusso@aol.com; arthur.senor@rve.com; dspader@erfs.com; bdoshi@jcnj.org
Cc: terril@ppg.com; overmyer@ppg.com; feinberg@ppg.com; dorothy.laguzza@leclairryan.com; joseph.lagrotteria@leclairryan.com; Mikaelian, Scott <Scott.Mikaelian@aecom.com>; LoPilato, Alfred <Alfred.LoPilato@aecom.com>; Hunt, Claire <Claire.Hunt@aecom.com>
Subject: Site 156 Supplemental Soil RIWP

Dear Mr. Riccio:

AECOM, On behalf of our client, PPG, is pleased to provide for your review the attached "PPG Site 156 (Metro Towers) Supplemental Remedial Investigation Results, Survey Controls Review and Additional Remedial Investigation Activities Work Plan", dated February 20, 2017.

A document summary sheet (DSS) is attached with this email with further details. The RIWP is provided in the linked folder below that includes a PDF file with text, tables, figures, and attachments (except laboratory reports), and a zip file that contains Attachment 7 (laboratory reports).

Please let us know if you have questions or comments.

These files will be available for download until 2/27/2017.

File	Description	Size
2017 02 20 Site 156 Supp RI R1 WP-F.pdf	Supplemental RIWP	12,313KB
2017 02 20 Site 156 Supp RI WP Att 7 Lab Data.zip	Attachment 7 Laboratory Data	61,840KB

Thank you.

Nan Conrey

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From: Paige, Stefanie
To: Conrey, Nanette; LoPilato, Alfred
Cc: Lilgeberg, Catherine; Hunt, Claire; Mikaelian, Scott
Subject: Metro Towers 2/26
Date: Wednesday, April 26, 2017 11:10:08 PM

Good Evening,

AECOM completed sampling four borings- three borings for delineation and one borings for waste class (waste class samples were also taken from one delineation boring). The following are details from the day:

Boring	Sample	Comments
L5a-SO1	12.75-13.25 (1 day TAT) (DUP)	All over samples placed on hold- sampled every two feet from DGA to MM; including all targeted sample (9.5-10.0 ft bgs)
L5b-NW	12.5-13.0 (1 day TAT)	All over samples placed on hold- sampled every two feet from DGA to MM; including all targeted sample (8.0-8.5 ft bgs)
L5c-W3	12.5-13.0 (1 day TAT) (DUP)	All over samples placed on hold- sampled every two feet from DGA to MM; including all targeted sample (7.0-7.5, 9.0-9.5, and 11.0-11.5 ft bgs) Two composite waste class samples were taken from this location. (5-10 ft and 10-15 ft)
WC-LB3d	1 foot intervals, including (2) 5 ft composite sample	Waste Class- sample from DGA to MM

Maser was able to come out to site and survey all additional points. All drums containing soil cuttings are labeled and located on the drum pad, west of the guard station. SGS will be onsite tomorrow to remove the VAC truck from site. All points were drilled and completed for this round.
Let me know if there are any questions or concerns, thanks!
Stefanie