CONSTRUCTION COMPLETION REPORT
SA-6 NORTH CHROMIUM REMEDY

STUDY AREA 6 NORTH
NJDEP SITES 087 AND 088
NJDEP PI #G000008710 AND #G000008711

JERSEY CITY, NEW JERSEY

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NOVEMBER 2017

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EXECUTIVE SUMMARY

Honeywell is submitting this Construction Completion Report (CCR) pursuant to the First Amended Consent Decree regarding the Remediation and Redevelopment of Study Area 6 North, ECF No. 435, entered by the United States Court, District of New Jersey on August 2, 2012, in Civil No. 05-05955, later consolidated with Civ. No. 95-2097 ("SA-6 North Consent Decree") in order to document the Chromium Remedy implemented to address chromium-impacted soil site-wide and groundwater for the Open Space Area (also referred to as "AOC-1 Open Space Area" in the SA-6 North Consent Decree) at Study Area 6 North (SA-6 North), located in Jersey City, Hudson County, New Jersey.[1] The remedial activities were initiated in May 2013 and were completed in December 2016. A Remedial Action Report (RAR) was prepared by Honeywell and submitted to New Jersey Department of Environmental Protection (NJDEP). NJDEP approved the RAR on June 1, 2017. The Chromium Remedy was implemented successfully in accordance with the following documents:

- NJDEP-approved Remedial Action Work Plan (RAWP);
- SA-6 North Consent Decree, In-situ Work Plans, the SA-6 North 100% Design Report and Design Change Bulletins;
- NJDEP's Technical Requirements for Site Remediation; and
- NJDEP's Administrative Requirements for the Remediation of Contaminated Sites.

SA-6 North encompasses approximately 42 acres north of the SA-7 Site and is bounded by Route 440 and the Hackensack River on the east and west sides, respectively. For this CCR, the contaminant of concern (COC) in soils at SA-6 North is hexavalent chromium and the COC for shallow groundwater is total chromium per the NJDEP-approved RAWP. Deep overburden and bedrock groundwater zones are being addressed by the Study Area 7 (SA-7) regional groundwater remedy. With respect to chromium-impacted soil and groundwater, the RAWP identified one area of concern (AOC) at the Site, AOC-1. AOC-1 is further divided into three sub-areas

[1] Throughout this CCR reference to chromium-impacted soils shall mean soils containing hexavalent chromium above the NJDEP soil criteria of 20 mg/kg, and reference to chromium-impacted groundwater shall mean groundwater with total chromium above the NJDEP groundwater standard of 70 µg/L.

in the SA-6 North Consent Decree with respect to future land use: the "Open Space Area," the "Residential Area," and the "Additional Excavation Areas" as shown on Figure 2.

The Open Space Area was defined as containing soil with hexavalent chromium concentrations above 20 milligrams per kilogram (mg/kg) and with shallow groundwater concentrations of total chromium above 70 micrograms per liter (µg/L). Pursuant to the SA-6 North Consent Decree, the Open Space Area Chromium Remedy includes in-place containment of contaminated soils and groundwater via a RCRA-equivalent cap and hydraulic barrier walls. The Residential Area was defined as containing soil with hexavalent chromium concentrations above 20 mg/kg, but with shallow groundwater concentrations of total chromium below 70 µg/L. The Additional Excavation Areas are those portions of SA-6 North that are not contiguous to AOC-1 that were defined as containing soil with hexavalent chromium concentrations above 20 mg/kg, but with shallow groundwater concentrations of total chromium below 70 µg/L. Pursuant to the SA-6 North Consent Decree, the Chromium Remedy for the Residential Area and the Additional Excavation Areas requires excavation of soils containing hexavalent chromium at concentrations greater than 20 mg/kg to 20 feet below ground surface.

The Remedial Action Objectives (RAOs) established in the NJDEP-approved RAWP for SA-6 North AOC-1 are as follows:

The RAOs for soils include:

- Prevent exposure to chromium-impacted soils containing hexavalent chromium above the NJDEP soil criteria of 20 milligrams per kilogram (mg/kg) to a depth of 20 feet, consistent with NJDEP policy.
- Remove and consolidate chromium-impacted soils that may be disturbed by future Site redevelopment activities; and reuse soils containing hexavalent chromium below 240 mg/kg beneath the area to be capped, to the extent feasible.
- Coordinate remedial actions for chromium with remedial actions for non-chromium contaminants and Site redevelopment, to the extent feasible.

Specific RAOs for groundwater include:

- Mitigate the potential for surface water infiltration and leaching of contaminants (total and hexavalent chromium) from fill soils (vadose zone) to groundwater.
- Mitigate offsite migration of chromium in groundwater above the NJDEP Groundwater Quality Standard (GWQS). [2]
- Reduce chromium concentrations in groundwater.
- Prevent exposure to groundwater chromium concentrations above the NJDEP GWQS.

Remediation was completed across SA-6 North in order to meet the RAOs, with the exception of three areas where remediation has been deferred ("Deferred Areas") as shown on **Figure 16**, due to circumstances further detailed below:

- Two narrow portions of SA-6 North adjacent to the Route 440 right-of-way (ROW) along the eastern perimeter of the Site (Route 440 ROW Deferred Areas) (DN#6 and DN#9 on Figure 16); and
- In-situ treatment area 7 (TA-7) located within the Jersey City Municipal Utility Authority (JCMUA) property (TA-7 Deferred Area) (DN#10 on Figure 16).

Additionally, three areas (TA-7, TA-8, and TA-10) within the Residential Area at SA-6 North were identified where excavation was determined to be technically impracticable (TI) due to depths of contamination and/or proximity to sewer lines and other critical structures. Thus, instead of excavation, in-situ chemical treatment of hexavalent chromium by injection of a chemical reductant was implemented in these three areas to meet the RAOs for soils in the Residential Area.

TA-10 has been sub-divided into two areas. The first area is a portion of TA-10 that is located north of the SA-6 northern hydraulic barrier wall and south of the northern curbline of the future Stegman Boulevard. This area could not be

[2] The SA 6 North Consent Decree requires Honeywell to isolate chromium-impacted shallow groundwater and to intercept and treat shallow groundwater flowing above the meadow mat in the AOC 1 Open Space Area. The Study Area 6 North Consent Decree also requires Honeywell to maintain an outward gradient of shallow groundwater from Study Area 7.

effectively treated in-situ due to the presence of underground utilities, including a 72-inch water force main. This area will be included in the Open Space Area deed notice and conservation restriction, as shown on **Figure 16**.

The second TA-10 area is designated TA-10-1 and is located north of the northern curbline of the future Stegman Boulevard, as shown in Figure 11B. In-situ treatment was implemented in TA-10-1. Initial post-treatment soil sampling has been performed in this area. Validated analytical results for the initial post-treatment sampling were submitted to all Parties in the March 2017 monthly progress report included in Attachment T to this CCR. On June 21, 2017, Honeywell submitted to all Parties a proposal to collect final confirmatory post-treatment soil samples in TA-10-1 in Spring 2018 in order to confirm that hexavalent chromium concentrations have been reduced to less than 20 mg/kg. Honeywell will establish a deed notice (DN#7) on TA-10-1 until results indicate that hexavalent chromium concentrations in soils have been reduced to less than 20 mg/kg.

Therefore, no further remedial actions are required for SA-6 North other than remediation in the identified Deferred Areas and actions to support the long-term maintenance and operation requirements for shallow groundwater and the deed noticed areas where chromium-impacts remain, including the Open Space Area. Remediation of the Deferred Areas will be coordinated with the widening of Route 440 and relocation of a fuel station in the TA-7 Deferred Area.

Since total chromium concentrations in shallow groundwater in the Residential Area and Additional Excavation Areas of AOC-1 were identified as <70 µg/L, remediation of shallow groundwater outside of the SA-6 North Open Space Area (capped area) was not necessary. Deeper groundwater zones are being addressed by the Study Area 7 (SA-7) regional groundwater remedy.

Major activities associated with the Chromium Remedy included:

- Excavation and offsite disposal of approximately 8,500 cubic yards (CYs) of chromium-impacted soil from the Residential Area and Additional Excavation Areas;

- Excavation of approximately 9,500 CYs of chromium-impacted soil from the Residential Area and Additional Excavation Areas and consolidation of this material in the Open Space Area;
- Reuse of approximately 28,000 CYs of confirmed non-chromium-impacted historic fill soils as backfill in excavations;
- Placement of approximately 41,000 CYs of structural fill material and horizon soils for the cap;
- Implementation of in-situ injections of a chemical reductant to treat chromium-impacted soils at Treatment Areas (TA) TA-7, TA-8, and TA-10-1 within the Residential Area and Additional Excavation Areas;
- Surcharge of the Open Space Area to consolidate underlying compressible strata;
- Construction of approximately 2,400 feet of hydraulic barrier wall around the Open Space Area;
- Construction of an approximately 10-acre Resource Conservation and Recovery Act (RCRA)-equivalent cap in the Open Space Area; and
- Construction of a contingent groundwater extraction system within the Open Space Area consisting of two runs 660 feet and 950 feet long.

Prior to and during the development of the 100% Design, Pre-Design Investigation (PDI) sampling and analytical activities were completed to delineate the lateral and vertical limits of hexavalent chromium concentrations to 20 mg/kg in soils at SA-6 North. The PDI samples were considered post-excavation equivalent samples that precluded the need for collection of traditional post-excavation confirmatory samples at the completion of excavation activities for most of the site. Sidewall confirmation samples were not required where the excavation area abutted property boundaries or the hydraulic barrier.

As indicated in the 100% Design Report, the steep slope along the bulkhead in the vicinity of Excavation Area 8 (EA-8) prevented the full delineation of chromium-impacted soil in this area during the PDI. Therefore, additional post-excavation sampling was required to confirm excavation limits as the excavation at EA-8 progressed.

Other than EA-8 and one isolated location at EA-2 (as explained in Section 5.6.1), the PDI sampling at all other excavation areas allowed the remedial action to be more definitively designed and implemented in the field and is a process that has been accepted by the NJDEP in the RAWP and has been implemented successfully by Honeywell at other sites. The results of the PDI sampling are contained in the Pre-Design Investigation Results and Mapping (PDI Report), which was Appendix B of the SA-6 North Chromium Remedy 100% Design Report.

With the exception of the Deferred Areas along the Route 440 ROW and the TA-7 Deferred Area as described above, the RAO for soils in the SA-6 North Residential Area and Additional Excavation Areas and the RAOs for soils and groundwater in the SA-6 North Open Space Area are being met by implementation of the Chromium Remedy and establishment of the necessary institutional controls. The Deferred Areas along the Route 440 ROW will be temporarily deed noticed until a public utility-owned gas main adjacent to the eastern boundary of the Site is relocated as part of a future road-widening project of Route 440. Likewise, the TA-7 Deferred Area will be temporarily deed noticed until JCMUA relocates the adjacent fuel station. A supplemental CCR will be submitted upon completion of remediation in the Deferred Areas.

The RAO for soils was achieved with in-situ chemical treatment in TA-8. The RAO for soils was achieved for nearly all of TA-7, except for one limited, recalcitrant location. In TA-7, the one recalcitrant soil location is shallow and will be excavated to achieve the RAO after JCMUA moves the fuel station adjacent to this area. In TA-10-1, final confirmatory post-treatment soil samples will be collected in spring 2018 in order to confirm whether hexavalent chromium concentrations in soils have been reduced to less than 20 mg/kg. In the interim, both the TA-7 and the TA-10-1 area will be subject to deed notices, which will remain in place until results demonstrate hexavalent chromium concentrations in soils have been reduced to less than 20 mg/kg for these areas. Final results for these areas will be submitted in a supplemental CCR.

The Long Term Monitoring Plan (LTMP) establishes procedures and schedules for long-term monitoring of shallow groundwater in the Open Space Area to evaluate hydraulic control and determine the need for operation of the contingent groundwater extraction system based on trigger criteria. The LTMP also establishes

the inspection, maintenance, and operation of critical features of the Chromium Remedy at areas where engineering and institutional controls are necessary.

Honeywell will establish appropriate institutional controls at SA-6 North that supplement the remedial actions, including deed notices and remedial action permits for soils for the Open Space Area and each of the deed notice areas. A classification exception area (CEA) has already been established with the NJDEP for the regional shallow groundwater which adequately covers shallow groundwater >70 µg/L in the Open Space Area at SA-6 North. In addition, the existing Conservation Restriction for the SA-6 North Open Space Area will be adjusted as needed to conform to the as-built remedy for Study Area 6 North.

This document will close out remediation of chromium-impacted soil and groundwater at SA-6 North with the exception of the implementation of the institutional controls and remediation of the Deferred Areas. As remediation at each Deferred Area is completed, documentation will be submitted to the Special Master and Parties, and the remedial action permit and deed notice for each area will be terminated by submitting documentation to NJDEP and All Parties. Termination of any deed notice requires the prior approval of the Special Master, Parties and Court.

1.0 INTRODUCTION

1.1 PURPOSE AND SCOPE

Honeywell International Inc. (Honeywell) is submitting this Construction Completion Report (CCR) prepared by Amec Foster Wheeler Environment and Infrastructure, Inc. (Amec Foster Wheeler) to document completion of remedial activities associated with the Chromium Remedy at Study Area 6 North (SA-6 North or Site), located in Jersey City, Hudson County, New Jersey. A Site Location Map is included as **Figure 1**. This CCR was prepared for and is submitted solely to the Special Master, the Parties, and the Court pursuant to the First Amended Consent Decree regarding the Remediation and Redevelopment of Study Area 6 North, ECF No. 435, entered by the United States Court, District of New Jersey on August 2, 2012, in Civil No. 05-05955, later consolidated with Civ. No. 95-2097 ("SA-6 North Consent Decree"). [3]

A Remedial Action Report (RAR) was prepared by Honeywell and submitted to the New Jersey Department of Environmental Protection (NJDEP) in accordance with the remedial action reporting requirements specified in the Technical Requirements for Site Remediation (TRSR), (New Jersey Administrative Code [N.J.A.C.] 7:26E-5.7). Since NJDEP's Site Remediation Program Case Management Team retained direct oversight of the Chromium Remedy, Honeywell requested NJDEP review and approval of the RAR in accordance with paragraph 23G of the Consent Judgment between Honeywell and the NJDEP dated September 7, 2011 ("Consent Judgment"). The NJDEP approved the RAR on June 1, 2017.

This CCR is based largely on the RAR, but contains additional attachments and other information not required by NJDEP that were not included in the RAR. The purpose of this CCR is to provide documentation of the successful implementation of

[3] The "Parties" referenced in this CCR are the signatories to the SA-6 North Consent Decree: The City of Jersey City, Hackensack Riverkeeper, and Honeywell. In addition, the "Special Master" referenced in this CCR is the Honorable Senator Robert Torricelli, who was appointed pursuant to the SA-6 North Consent Decree, paragraph 71, to oversee and enforce the implementation and long-term monitoring of the Chromium Remedy within SA-6 North, and the Initial Development Period related to the Open Space Area.

the Chromium Remedy at SA-6 North and achievement of designated remedial action objectives (RAOs) at the Site to address chromium-impacted soil and groundwater[4]. The Chromium Remedy was implemented in three sub-areas within the defined Area of Concern-1 (AOC-1) as shown on **Figure 2**:

- Open Space Area
- Residential Area and
- Additional Excavation Areas.

The Chromium Remedy was implemented at SA-6 North in accordance with the following documents:

- An Administrative Consent Order ("ACO") between Honeywell, formerly Allied Signal, Inc., and the NJDEP (NJDEP, 1993), modified pursuant to the Consent Judgment;
- SA-6 North Consent Decree;
- July 1, 2013: Technical Requirements for Site Remediation N.J.A.C. 7:26E-1-5 adopted May 7, 2012, revised 2013;
- NJDEP, 2012. New Jersey Administrative Code, Chapter 26C Administrative Requirements for the Remediation of Contaminated Sites (ARRCS); last revised May 7, 2012, Trenton, New Jersey.
- January 4, 2008 (amended February 2008): *Remedial Action Selection Report and Remedial Action Work Plan for Chromium* to address chromium contamination at SA-6 North (SA-6 North Chromium RASR/RAWP). This document was approved by the NJDEP in a letter dated February 19, 2009.
- February 2013: *Revised Work Plan for In-Situ Treatment of Chromium Impacted Soil* for three treatment areas (TA) at SA-6 North where excavation is technically impracticable and the *Updated Work Plan for In-Situ*

[4] Throughout this CCR, reference to chromium-impacted soils shall mean soils containing hexavalent chromium above the NJDEP soil criteria of 20 mg/kg, and reference to chromium-impacted groundwater shall mean groundwater total chromium above the NJDEP groundwater standard of 70 µg/L.

Treatment of Chromium-Impacted Soils at the Northern Area Section of Treatment Area 10 dated August 2015.

- June 28, 2013: *Chromium Remedy 100% Design Report - Issued for Construction* for SA-6 North, ECF Nos. 1176 and 1180, entered by the United States District Court, District of New Jersey on July 10, 2013, in Civ. No. 05-05955, later consolidated with Civ. No. 95-2097 ("SA-6 North 100% Chromium Remedial Design"). Portions of this document were reviewed and approved by the NJDEP in an email on May 15, 2013. The Design Report for SA-6 South was issued at the same time. Unless otherwise noted, the design reports, drawings, and specifications are collectively referred to herein as the 100% Design Report.
- Design Change Bulletins (DCs) to SA-6 North 100% Design Report as indicated in Section 3 below.

As the Chromium Remedy progressed at both SA-6 North and SA-6 South, Honeywell prepared a series of five Declarations which were periodically submitted to the Parties to memorialize completion of specific remedial elements of the Chromium Remedy in accordance with the above documents. There are three individual Declarations related to SA-6 North (Declarations Nos. 3,4, and 5), and five in total for SA-6 South and SA-6 North. In general accordance with Honeywell correspondence dated June 19, 2014 and February 4, 2016 submitted to all Parties, the elements of each Declaration were as follows:

- Declaration No. 1: Excavation and backfilling, hydraulic barrier wall construction, and soil management and disposition at SA-6 South;
- Declaration No. 2: Open space cap subgrade, geosynthetic components, contingent groundwater extraction system trench construction, and trimming of the hydraulic barrier wall sheet pile to final elevation at SA-6 South;
- Declaration No. 3: Excavation and backfilling, hydraulic barrier wall construction, and soil management and disposition at SA-6 North;
- Declaration No. 4: Open space cap subgrade, geosynthetic components and contingent groundwater extraction system trench construction at SA-6 North; and

- Declaration No. 5: All Remaining construction activities including: additional miscellaneous excavations at SA-6 South within 60 Kellogg and Site 163; installation of gas vent system, cover soil placement, final contingent groundwater extraction system infrastructure installation, discussion of deferred areas and pending institutional controls required, in-situ treatment, soil erosion and sediment control at SA-6 South and SA-6 North; monitoring well installation and abandonment, final grading and historic fill cap installation at SA-6 South; and meadow mat (Stratum D) repair at SA-6 North .

In addition, each Declaration is signed by Honeywell and a New Jersey-licensed professional engineer and all five Declarations have been entered with the United States District Court for the District of New Jersey in Civil No. 95-2097 (see ECF Nos. 1403-1, 1464-1, 1484, 1487, and 1515, for Declarations 1 through 5, respectively). While the Declarations are not required by the TRSR for RARs, the Special Master and Parties have agreed that the Declarations will be included in the CCR. Declarations 3, 4, and 5 are attached to this CCR (**Appendix T**). The CCR will be filed with the Court in accordance with paragraph 5 of the Consent Order Entering Consolidated 100% Design for Study Area 6 North and Study Area 6 South, *Jersey City Municipal Utilities Auth. v. Honeywell*, D.N.J., Consol. Cases, Civ. No. 95-2097, July 9, 2013, ECF No. 1180, along with a Consent Order explaining that the CCR supersedes the 100% Design.

For the purpose of this CCR, the contaminant of concern (COC) in soils at SA-6 North is hexavalent chromium and the COC for shallow groundwater is total chromium per the NJDEP-approved RAWP. Chromium-impacted soil and groundwater was delineated during multiple phases of remedial investigations (RI) and subsequent pre-design investigations. With respect to chromium-impacted soil and groundwater, the RAWP identified one area of concern (AOC) at the Site, AOC-1. AOC-1 is further divided into three sub-areas with respect to future land use: the "Open Space Area," the "Residential Area," and the "Additional Excavation Areas" as shown on **Figure 2**. AOC-2 is defined in the SA-6 North Consent Decree as the entirety of the Site (including AOC-1) where historic fill exists. A separate historic fill remedy is being implemented in AOC-2 which will be documented in a separate non-chromium RAR submittal by Honeywell's Licensed Site Remediation Professional (LSRP); therefore, AOC-2 is not the subject of this CCR.

The Open Space Area was defined as containing soil with hexavalent chromium concentrations above 20 milligrams per kilogram (mg/kg) and with shallow groundwater concentrations of total chromium above 70 micrograms per liter (µg/L). Pursuant to the SA-6 North Consent Decree, the Open Space Area Chromium Remedy includes in-place containment of contaminated soils and groundwater via a RCRA-equivalent cap and hydraulic barrier walls. The Residential Area was defined as containing soil with hexavalent chromium concentrations above 20 mg/kg, but with shallow groundwater concentrations of total chromium below 70 µg/L. The Additional Excavation Areas are those portions of SA-6 North that are not contiguous to AOC-1 that were defined as containing soil with hexavalent chromium concentrations above 20 mg/kg, but with shallow groundwater concentrations of total chromium below 70 µg/L. Pursuant to the SA-6 North Consent Decree, the Chromium Remedy for the Residential Area and Additional Excavation Areas requires excavation of soils containing hexavalent chromium at concentrations greater than 20 mg/kg to 20 feet below ground surface.

The SA-6 Chromium Remedy 100% Design was prepared by Honeywell as one integrated project for both SA-6 North and SA-6 South. The 100% Design Report was used to obtain bids from and select a remedial contractor to implement the Chromium Remedy at both sites concurrently with the same project team under one contract. Although two 100% Design Reports were prepared for SA-6 North and SA-6 South, remedial activities or elements that were common to each were combined to the extent possible. Project execution followed the integrated approach with certain elements of the SA-6 Chromium Remedy common to both sites, such as project support systems and infrastructure, construction water treatment, decontamination pads, site security and preparation, etc.

The Chromium Remedy at SA-6 North, with the exception of the deferred areas, was completed in December 2016. Remediation of non-chromium COC in AOC-2 at SA-6 North was completed in March 2017 separately from the implementation of the Chromium Remedy at SA-6 North. This CCR does not address SA-6 North non-chromium COC. A separate RAR addressing the SA-6 North non-chromium COC will be prepared and submitted to NJDEP by Honeywell's LSRP in the third quarter 2017.

The Chromium Remedy at SA-6 South was completed in November 2016. Remediation of non-chromium COC at SA-6 South was completed concurrent with the Chromium Remedy. The NJDEP approved the SA-6 South RAR on March 30, 2017. A CCR for SA-6 South has been prepared and submitted solely to the Special Master and the Parties. The Non-Chromium RAR for SA 6 South was submitted to NJDEP in October 2016.

1.2 SITE SETTING AND SITE HISTORY

SA-6 North and SA-6 South are located on the west side of Jersey City. SA-6 North and SA-6 South are separated by Study Area 7 (SA-7). SA-6 North, SA-6 South, and SA-7 lie between Route 440 to the east and the Hackensack River to the west. A Site Layout Map of SA-6 North is included as **Figure 2.** SA-6 North is bordered by a car dealership to the north and SA-7 to the south. SA-6 South is bordered by SA-7 to the north and Droyer's Cove, Kellogg Street and Droyers Point Society Hill developments to the south. Adjacent commercial properties, including New Jersey City University (NJCU) and a Home Depot, are located east of Route 440.

Collectively, SA-6 North, SA-7, and SA-6 South comprise approximately 100 acres (see **Illustration 1**). Bayfront Redevelopment LLC, a wholly owned subsidiary of Honeywell, owns both the SA-6 North and SA-6 South properties with the exception of Block 6 on SA-6 North, representing a 6.25-acre lot occupied by the Jersey City Municipal Utilities Authority (JCMUA) and is jointly owned by the City of Jersey City (Jersey City) and the Jersey City Redevelopment Agency (JCRA). All the other Lots and Blocks on SA-6 North are owned by Bayfront Redevelopment LLC. SA-6 North has an overall area of just over 42 acres as indicated below.

SA-6 North consists of Hudson County Chromate Sites 087 and 088 as follows:

NJDEP Site No.	NJDEP Site Name	Program Interest Number for Chromium	Block 21901 Lot No.	Address	Acres
087	Jersey City Incinerator Authority (JCIA) Site	G000008710	9 & 10	555 & 575 Route 440	35.76
088	JCIA Well Site	G000008711	5	501 Route 440	6.48
Total Acres					42.24

Detailed site histories have been provided in previous regulatory submittals. Recent operations at the SA-6 North and SA-6 South are summarized as follows:

- SA-6 North is also referred to as the "Jersey City Properties." Since approximately the mid-1950s, the Site was owned by Jersey City and occupied by "Jersey City Entities" including the Jersey City Department of Public Works (JCDPW), Jersey City Incinerator Authority (JCIA), and JCMUA. JCDPW and JCIA vacated the SA-6 North in 2014 during the implementation of the Chromium Remedy and some of the associated structures formerly utilized by the JCIA were demolished. JCMUA continues operations on Block 6 including primary wastewater treatment (grit removal) and sanitary conveyance to the regional Passaic Valley Sewerage Commission (PVSC) wastewater treatment facility located in Kearny, New Jersey. JCMUA also performs vehicle maintenance and material storage and maintains administrative operations on Block 6. Bayfront took ownership of the SA-6 North properties June 5, 2008.
- SA-6 South is also referred to as the "Kellogg Street Properties." SA-6 South was the location of historic industrial and commercial operations. Recent operations included a bowling alley, freight trucking terminals, chemical production, concrete mixing and distribution, boat repair, and light retail and office space. Honeywell purchased the SA-6 South properties between 2005 and 2010.

Historical maps and aerial photographs indicate that, prior to development, SA-6 North and the surrounding area consisted of marshland, which extended to the edge of the former Morris Canal (approximately the eastern edge of Route 440). Filling activities occurred from approximately the 1920s to the 1950s. The aerial photographs indicate that the area comprising the SA-6 and SA-7 sites has been filled over the years to build up the grade to approximately current levels. No detailed information is available on the placement of chromite ore processing residue (COPR) for the properties comprising SA-6 North. However, it is believed that COPR deposited on SA-7 likely spilled over and was co-mingled with other types of fill, spreading the COPR material onto the adjacent portions of the SA-6 North and South properties. The deposition of COPR is believed to have resulted from operations at a former sodium dichromate plant that operated on the east side of Route 440.

Visual observations of soil borings and sample analytical results from soil borings conducted on SA-6 North and SA-6 South indicate the presence of other types of fill consistent with the NJDEP's definition of "historic" fill in the TRSR. The historic fill map of the Jersey City quadrangle (NJDEP, 2004) was obtained from the NJDEP's website and was reviewed. This map confirms that SA-6 North, SA-6 South, and SA-7 were identified as containing historic fill as mapped by the NJDEP. The resulting material on the SA-6 properties is thus a mixture of COPR and indigenous historic fills and soils.

1.3 PROJECT BACKGROUND AND LAND DEVELOPMENT

A redevelopment plan, known as the Bayfront Redevelopment Plan, encompasses the entire 100-acre parcel designated as SA-6 North, SA-7 and SA-6 South (see **Illustrations 1 and 2**) and was approved by the City of Jersey City on March 12, 2008. Remediation of chromium-impacted soils and groundwater was conducted consistent with the planned future use and redevelopment of SA-6 South as set forth in the Bayfront Redevelopment Plan. Remediation of chromium-impacted soils at SA-7 was completed in September 2009. Honeywell remediated SA-6 North from March 2013 to December 2016 so that implementation of the Bayfront Redevelopment Plan may now proceed. Remediation at SA-6 South was completed in November 2016 and has been reported under a separate chromium RAR and a CCR and a non-chromium RAR.

Illustration 1: SA-6, SA-7, and Surrounding Area

The Bayfront Redevelopment Plan lays out the redevelopment of the nominal 100-acre site that is owned by Bayfront Redevelopment LLC (Bayfront, a subsidiary of Honeywell) and is being developed in partnership with the City of Jersey City into a residential, commercial and retail complex. The Bayfront Redevelopment Plan represents a major opportunity to revitalize the west side of Jersey City; it meets the objectives of Jersey City's master plan for the broader west side area designated as the Bayside Redevelopment Area (see **Illustration 2**).

The Chromium Remedy and Non-Chromium Remedies at both SA-6 North and SA-6 South integrate the requirements of the future Bayfront Redevelopment Plan.

To be consistent with future planned use and the Bayfront Redevelopment Plan, SA-6 North and SA-6 South are divided into Open Space and Development Areas. The designation of these areas is contained in the SA-6 North and SA-6 South Consent Decrees, and is designated as follows:

Illustration 2: Bayside Redevelopment Area

- SA-6 North Consent Decree: "Open Space Area" and "Residential Area" and "Additional Excavation Areas." The Residential Area and Additional Excavation Areas are development areas.
- SA-6 South Consent Decree: "Open Space AOC" and "Development AOC." The "Development AOC" consists of two parts: the Kellogg Street Development AOC and the Site 163 Development AOC.

The Bayfront Redevelopment Plan designates the SA-6 North and SA-6 South Development Areas for future residential and commercial/retail use redevelopment, and designates the Open Space Areas for future redevelopment as linear parks and recreational use areas currently known as "Central Park" on SA-6 North and the "Promenade" on SA-6 South. The as-built grades of the cap associated with the Chromium Remedy in the SA-6 North Open Space Area are interim grades. During redevelopment, the cap grades will be raised and made consistent with the Bayfront Redevelopment Plan grades, with smoothing as needed to facilitate drainage pending development, and associated installation of roadways and stormwater

management. Development in the SA-6 North Open Space Area is restricted via a recorded conservation restriction. **Illustration 3** depicts the conceptual Chromium Remedy related to future redevelopment areas.

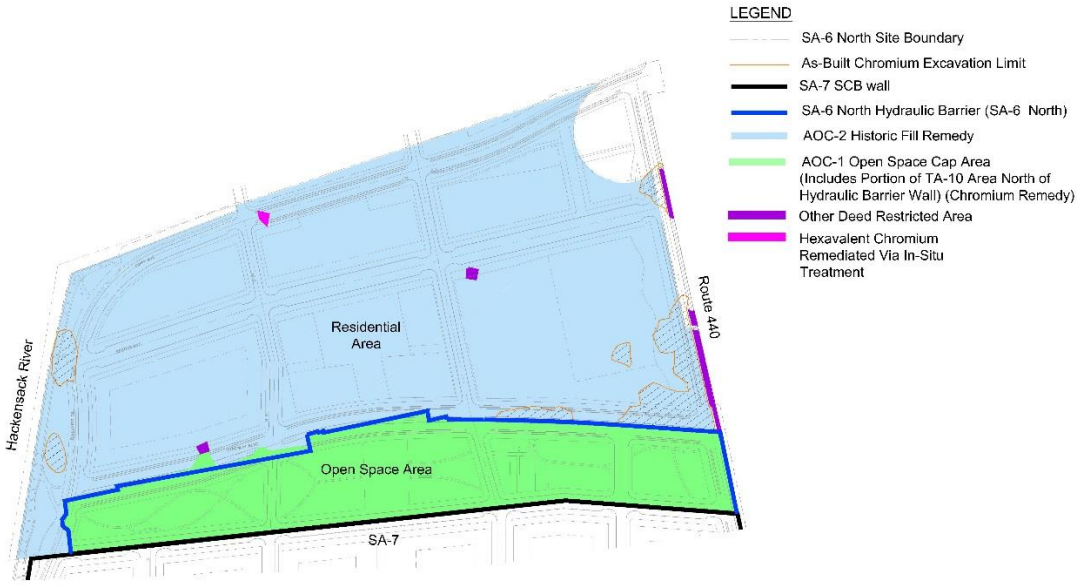

Illustration 3: SA-6 North Chromium Remedy and Redevelopment Plans

1.4 CONTAMINANTS OF CONCERN AND REMEDIAL ACTION OBJECTIVES

For the purpose of this CCR, the contaminant of concern (COC) in soils at SA-6 North is hexavalent chromium and the COC for shallow groundwater is total chromium per the NJDEP-approved RAWP. The NJDEP-approved RAWP identified specific remedial action objectives for soil and groundwater as follows:

Specific RAOs for soils include:

- Prevent exposure to chromium-impacted soils containing hexavalent chromium above the NJDEP soil criteria of 20 milligrams per kilogram (mg/kg) to a depth of 20 feet, consistent with NJDEP policy.
- Remove and consolidate chromium-impacted soils that may be disturbed by future Site redevelopment activities; and reuse soils beneath the area to be capped, to the extent feasible.

- Coordinate remedial actions for chromium-impacted soils with remedial actions for non-chromium contaminants and Site redevelopment, to the extent feasible.

Specific RAOs for groundwater include:

- Mitigate the potential for surface water infiltration and leaching of contaminants (total and hexavalent chromium) from fill soils (vadose zone) to groundwater.
- Mitigate offsite migration of chromium-impacted groundwater above the NJDEP Groundwater Quality Standard (GWQS).[5]
- Reduce chromium concentrations in groundwater.
- Prevent exposure to groundwater chromium concentrations above the NJDEP GWQS.

To achieve the RAOs for SA-6 North soils and groundwater, the NJDEP-approved RAWP proposed the following remedial actions:

- Excavation of soil impacted with hexavalent chromium >20 mg/kg to a depth of 20 feet below ground surface (bgs) or 20 mg/kg, in the Residential Area and Additional Excavation Areas;
- Consolidate lower concentration chromium-impacted soil from the Residential Area and Additional Excavation Areas in the Open Space Area prior to cap construction;
- Capping and containment of chromium-impacted soil in the Open Space Area;
- In-situ permeable reactive barrier (PRB) treatment remedy using a reductant medium along the north side and vertical hydraulic barriers along the east and west sides of the Open Space Area;

[5] The SA 6 North Consent Decree requires Honeywell to isolate chromium-impacted shallow groundwater and to intercept and treat shallow groundwater flowing above the meadow mat in the AOC 1 Open Space Area. The Study Area 6 North Consent Decree also requires Honeywell to maintain an outward gradient of shallow groundwater from Study Area 7.

- Post-remediation groundwater monitoring to evaluate groundwater chromium concentrations with respect to the NJDEP GWQS; and
- Establishment of institutional controls.

Following submission of the RAWP, Honeywell continued to work with NJDEP to develop and refine the Chromium Remedy to achieve the RAOs stated in the NJDEP-approved RAWP. Eventually, Honeywell proposed to eliminate the PRB concept and fully contain the Open Space Area with a vertical hydraulic barrier consisting of sealed sheetpile. The implemented Chromium Remedy did not include a PRB.

In addition, following submission of the RAWP, Honeywell identified several isolated locations where chromium-impacted soil existed in areas within the Residential Area and Additional Excavation Areas where excavation was technically impracticable (TI) due to depths of the chromium-impacted soil and proximity to sewer lines and other critical structures. Instead of excavation in these isolated TI areas, in-situ chemical treatment of hexavalent chromium by injection of a chemical reductant was proposed to meet the RAOs for the Residential Area and Additional Excavation Areas. These areas were identified as in-situ chemical treatment areas TA-7, TA-8, and TA-10. These areas are isolated from the identified areas in the Residential Area and Additional Excavation Areas where excavation could be conducted. Thus, instead of excavation, in-situ chemical treatment of hexavalent chromium by injection of a chemical reductant was implemented in these isolated TI areas to meet the same RAO for soils in the Residential Area and Additional Excavation Areas as that stated above.[6] Additional details pertaining to the implementation of the in-situ chemical reduction in the TI areas of the Residential Area and Additional Excavation Areas are provided in Section 12.0.

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[6] TA-10 was sub-divided into two areas. The first area is a portion of TA-10 that is located north of the SA-6 northern hydraulic barrier wall and south of the northern curbline of the future Stegman Boulevard. This area could not be treated in-situ due to the presence of underground utilities, including a 72-inch water force main. This area will be included in the Open Space Area deed notice and conservation restriction, as shown on Figure 16. The second TA-10 area is designated TA-10-1 and is located north of the northern curbline of the future Stegman Boulevard, as shown in Figure 11B. In-situ treatment was implemented in TA-10-1.

In addition, there are three areas located within the Residential Area and Additional Excavation Areas where remediation has been deferred ("Deferred Areas") as shown on **Figure 16**, and discussed in more detail in Section 4:

- Two narrow portions adjacent to the Route 440 right-of-way (ROW) along the eastern perimeter of the SA-6 North (Route 440 ROW Deferred Areas) (DN#6 and DN#9 on Figure 16); and
- In-situ treatment area 7 (TA-7) located within the Jersey City Municipal Utility Authority (JCMUA) property (TA-7 Deferred Area) (DN#10 on Figure 16).

Therefore, to achieve the soil RAOs in the Residential Area and Additional Excavation Areas, with the exception of the Deferred Areas and TI areas, Honeywell excavated soil impacted with hexavalent chromium >20 mg/kg to a maximum depth of 20 feet bgs. Excavated material containing hexavalent chromium between 20 and 240 mg/kg was consolidated in the Open Space Area. Excavated material containing hexavalent chromium >240 mg/kg was disposed of offsite. In lieu of excavation in TI areas TA-7, TA-8 and TA-10-1, Honeywell implemented in-situ chemical treatment of hexavalent chromium by injection of a reductant as shown on Figure 11B. . In lieu of excavation in the non-TA-10-1 portion of TA-10 (*i.e.*, the portion of TA-10 located to the south of the northern curbline of the future Stegman Boulevard) Honeywell will deed notice and conservation restrict the area as part of the Open Space Area, and the area will be capped by roadway and/or sidewalk during the redevelopment.

To achieve the soil RAOs in the Open Space Area, engineering controls (vertical hydraulic barrier and RCRA-equivalent cap) were constructed around and over existing and consolidated chromium-impacted soil within the Open Space Area.

The soil RAOs were met in AOC-1 with the exception of the three "Deferred Areas" and portions of the TI areas within the Residential Area and Additional Excavation Areas as discussed in Sections 4.0 and 12.

Concentrations of total chromium in shallow groundwater within the Residential Area and Additional Excavation Areas were below the NJDEP GWQS for groundwater of 70 µg/L prior to implementation of the Chromium Remedy.

Therefore, remediation of shallow groundwater is not necessary in the Residential Area and Additional Excavation Areas.

To achieve groundwater RAOs in the Open Space Area, Honeywell constructed a vertical barrier and a cap which fully contains groundwater in the Open Space Area. Further, a contingent groundwater extraction system (GWET) was installed within the Open Space Area to assist in maintaining an inward hydraulic gradient relative to groundwater outside the Open Space Area. The GWET and the hydraulic barriers are designed to isolate shallow groundwater and to intercept and treat chromium-impacted shallow groundwater flowing above the meadow mat in the AOC-1 Open Space as required by the SA-6 North Consent Decree. Groundwater level measurements will be monitored in accordance with the Long Term Monitoring Plan (LTMP), dated July 2017 (latest Revised Draft), prepared for both SA-6 North and SA-6 South, to monitor hydraulic conditions in both the Residential Development and Open Space Areas.

To achieve both soil and groundwater RAOs, Honeywell will establish appropriate institutional controls for the Open Space Area, Deferred Areas, TA-10, and groundwater at SA-6 North including:

- Deed notices for each area of the Site where hexavalent chromium concentrations in soils remain >20 mg/kg;
- Remedial action permits for soils for all areas where hexavalent chromium concentrations in soils remain >20 mg/kg;
- A remedial action permit for groundwater in the Open Space Area;
- A classification exception area (CEA) has already been established with NJDEP for the chromium-impacted regional shallow groundwater which adequately covers shallow groundwater at SA-6 North; and
- A conservation restriction has already been established for the Open Space Area at SA-6 North. The Conservation Restriction will be amended to include the portion of TA-10 that is located to the south of the northern curbline of the future Stegman Boulevard. See Figure 2. Honeywell will maintain the conservation restriction.

The deed notice areas are shown on Figure 16. A summary of the five deed notice areas at SA-6 North are:

- Deed Notice Area No. 5: Open Space Area and the portion of TA-10 that is located to the south of the northern curbline of the future Stegman Boulevard,
- Deed Notice Area No. 6: Route 440 Right-of-Way (ROW) Deferred Area,
- Deed Notice Area No. 7: TA-10-1,
- Deed Notice Area No. 9: Route 440 ROW Deferred Area, and
- Deed Notice Area No. 10: TA-7 Deferred Area.

Draft deed notices, draft remedial action permit applications, and the NJDEP-approved CEA are appended to this CCR. Section 4.0 more fully describes the three Deferred Areas that will be subject to deed notices until remediated. Additional details concerning the institutional controls are provided in Section 18.

1.5 CONSTRUCTION OVERVIEW

The Chromium Remedy for the Residential Area and Additional Excavation Areas at SA-6 North consisted of excavation of soils exceeding 20 mg/kg for hexavalent chromium to the elevations established in the SA-6 North 100% Design Report DC 2015-09-04, DC 2015-11-18, DC 2015-11-30 based either upon pre-design investigation (PDI) sample data or encountering Stratum D. Excavated soil containing hexavalent chromium concentrations between 20 and 240 mg/kg for hexavalent chromium was consolidated in the SA-6 North Open Space Area; whereas excavated soil containing hexavalent chromium concentrations >240 mg/kg was disposed of offsite.

Unlike SA-6 South, the chromium-impacted soils at SA-6 North were less wide-spread and were identified in specific areas. These distinct areas were previously delineated to 20 mg/kg during the RI and/or PDI sampling and were given the term Excavation Area (EA) and were numbered (1, 2/3, 4, 5, 7 and 8) for reference purposes. The originally defined EA-6 area was included in the Open Space Area by realignment of the hydraulic barrier once the design was completed.

Hydraulic barriers keyed into the Stratum D were installed on the east, north and west sides of the Open Space Area. The SA-7 Soil-Cement Bentonite (SCB) Wall forms the southern side of the hydraulic barrier. The northern hydraulic barrier also served as temporary excavation support for excavation of EA-5 and EA-2/3 in the Residential Area. A Resource Conservation and Recovery Act (RCRA)-equivalent cap was constructed over the Open Space Area to isolate chromium-impacted soils.

More specifically, the Chromium Remedy included the following main work elements:

- Site preparation (utility mark out, temporary fencing, and erosion controls);
- Remedial Contractor mobilization and installation of site support facilities including construction trailers, decontamination stations, utility abandonment and bypassing, soil erosion controls, construction dewatering and stormwater control, and treatment infrastructure;
- Abandonment/demolition/removal/relocation of existing structures, select monitoring wells, and utilities as necessary to remediate chromium-impacted areas;
- Construction water management;
- Installation of temporary sheetpile for excavation support;
- Excavation within the designated Residential Area and Additional Excavation Areas of chromium-impacted soils exceeding 20 mg/kg hexavalent chromium to a maximum depth of 20 feet or shallower if meadow mat (Stratum D) was reached;
- Consolidation of excavated material exhibiting hexavalent chromium concentrations between 20 and 240 mg/kg within the Open Space Area;
- Offsite disposal and transportation of excavated material exhibiting hexavalent chromium concentrations exceeding 240 mg/kg;
- Installation of a hydraulic barrier along the perimeter of the designated Open Space Area that was embedded approximately 2 feet (minimum) into the underlying Stratum D and was tied into the existing hydraulic barrier associated with the SA-7 remedy along the common SA-6 North and SA-7 Site boundaries. Embedment of the hydraulic barrier into the underlying

Stratum D established the integrity of the seal between the vertical wall and the horizontal Stratum D confining layer.

- Installation within the Open Space Area of a contingent groundwater extraction system which will be operated as needed to maintain an inward hydraulic gradient as specified in the Consent Decree, the 100% Design Report, and the SA-6 LTMP that is currently being developed.
- Soil surcharging in the Open Space Area to consolidate underlying compressible strata;
- Grading of soil consolidated from other areas in the Open Space Area and compaction of existing material/subgrade fill;
- Installation of the RCRA-equivalent geosynthetic cap system, including a methane venting layer to address naturally occurring methane;
- Installation of surface drainage and erosion control structures;
- Installation of a cap drainage system to collect stormwater infiltration and discharge to surface water;
- Installation of utility corridors for future site redevelopment;
- Installation of paired piezometers along the barrier wall to allow for groundwater level monitoring to demonstrate compliance with the inward hydraulic gradient requirement.
- Restoration of site and planting of grass or placement of clean crushed stone cover;
- Recording of institutional controls and initiation of future monitoring; and
- In-situ treatment of soils exhibiting hexavalent chromium concentrations exceeding 20 mg/kg by injecting a chemical reductant solution into the subsurface at TA-7, TA-8, and TA-10-1.

Table 9 provides a cross-reference table of major construction elements referenced to particular components of the SA-6 North 100% Design (100% Design Report, Specifications, and Drawings), DCs, and the Declarations which were periodically sent to all Parties documenting completion of specified portions of the Chromium Remedy.

The Chromium Remedy activities included the following major categories, and corresponding approximate quantities for SA-6 North (quantities that are combined for SA-6 North and SA-6 South are noted):

Item	Units	Quantity
Construction Water Discharged (North and South)	Gallons	41,257,040
Abandoned Existing Monitoring Wells/Piezometers	Each	41
Dewatering Wells		
Shallow	Each	44
Deep	Each	2
New Monitoring Wells		
Piezometers	Each	10
Material Handling		
Concrete	Cubic Yards (CY)	5,740
Excavated Soils		
Open Space Area 1N <20 mg/kg	CY	14,000
<20 mg/kg	CY	11,300
20-240	CY	9,500
>240 (Non-hazardous)	CY	2,500
>240 (Hazardous)	CY	6,000
Consolidated Materials		
20-240 (South)	CY	35,000
20-240 (North)	CY	9,500
Asphalt	CY	100
Hydraulic Barrier	LF	2381
Cap Materials		
Subgrade Fill	CY	66,000
Geosynthetic Venting Layer (GVL)	Square Feet (SF)	361,300
Geosynthetic Composite Layer (GCL)	SF	29,500
Geotextile Layer	SF	59,000
Geosynthetic Drainage Layer (GDL)	SF	440,970

Item	Units	Quantity
Liner	SF	440,970
GDL Soil	CY	17,700
Root Barrier	SF	440,970
Clean Cover Soils	CY	41,000
Backfill		
<20 mg/kg within excavation areas	CY	21,900
Imported Fill (Summit, NJ, "Celgene" fill)	CY	6,000
Surcharge		
Soil	CY	130,800
Monitoring Points	Each	11 Half Stations 13 Full Stations 15 Settlement Platforms
Disposal		
Recycled Asphalt (North and South)	Tons	3,700
>240 (Non-Hazardous)	Tons	4,000
>240 (Hazardous)	Tons	10,000
Frac Tank	Tons	120
In-Situ Injections (CAPS Injected)		
TA-7	Gals	324
TA-8	Gals	168
TA-10	Gals	1,155

The following entities were involved in the construction of the SA-6 North remediation (see also **Figure 3,** Project Team Organization Chart):

Party	Responsibility
Honeywell	Overall compliance with court-ordered remediation
Amec Foster Wheeler	Engineer of Record (EOR), Design, Contract Documents, Construction Inspection, Health and Safety Oversight, and Overall Site Construction Management

Party	Responsibility
Entact	Excavation of chromium-impacted soil, imported backfill purchase and placement, and Dewatering and Groundwater Extraction
Gramercy[7]	Demolition of JCIA buildings
Entact Subcontractors: **B&B Drilling, Inc.** **Maser Consulting P.A.** **Chemtech** **Eurofins** **Vertical V-Northeast** **ESI**	 Install and abandon monitoring wells and piezometers Surveying Analytical Laboratory for Imported Fill Samples (non-chromium) Analytical Laboratory for Imported Fill Samples (chromium) Compaction Testing Installation of all geosynthetic materials for the RCRA-equivalent cap
Emilcott Associates	Air Monitoring
Arecon	Manifests, and Management of Excavated Soil Disposal
Mueser Rutledge Consulting Engineers (MRCE)	3rd Party Structural and Geotechnical Engineering Peer Review
Langan	3rd Party Liner QA
SGS Accutest Laboratories Inc. (Accutest)	Analytical Laboratory for samples collected by Amec Foster Wheeler
Travelers Industrial Hygiene Laboratory	Analytical Laboratory for Perimeter Air Monitoring Plan (PAMP) samples
Analytical & Environmental Services, Inc. (AESI)	3rd Party Analytical QA/QC
Validata, LLC	3rd Party Analytical Data Validation
Cornerstone	Groundwater Modeling
Geocomp Engineering	Prepared Vibration Monitoring Reports
Isotec/ERFS	In-Situ Injections

Mobilization to both SA-6 North and SA-6 South commenced on March 1, 2013 and was completed on June 28, 2013. The Chromium Remedy on SA-6 North was

[7] Not included in Figure 3 as they were a direct contract to JCRA.

substantially complete by December 2016. Work on SA-6 South was also substantially completed by November 2016. Representative photographs of major components of the work are included in **Appendix A.**

1.6 DATA VALIDATION AND DATA USABILITY EVALUATION

Unless otherwise indicated for specific sample types, Accutest analyzed soil and groundwater samples collected during the Chromium Remedy implementation. Hexavalent chromium analysis was performed using United States Environmental Protection Agency (USEPA) Method 7199. Data validation was performed by a third-party data validation specialist with Validata, LLC (Validata) of Seattle, Washington. Additionally, Honeywell employs Dr. Rene Surgi of Analytical & Environmental Services, Inc. (AESI) of Glencoe, Illinois, to provide third-party analytical quality assurance/quality control (QA/QC).

Honeywell's protocol is to have Dr. Surgi review 100% of the soil sample hexavalent chromium soil analytical data and work with Accutest on any QA/QC matters prior to issuance of the final analytical data packages. Soil samples that do not meet the laboratory's strict internal QA/QC criteria are re-logged by the laboratory and re-analyzed. Once the data packages are issued by Accutest to Validata, the hexavalent chromium (and total chromium, if performed) data are validated. Employing such a protocol provides a high degree of confidence that the hexavalent chromium analytical data that has passed the internal laboratory QA/QC standards and was not rejected by the validator is accurate, precise, representative and, thus, usable. Rejected data, although reported, is flagged with an "R" and is not used for the intended purpose of the associated sampling.

The Data Management Plan (DMP) contained in the SA-6 North 100% Design Report outlined, among other things, the specific data validation objectives and procedures involved in producing quality, usable analytical data during implementation of the Chromium Remedy. Honeywell revised the DMP in August 2014 to clarify data validation level and frequency based upon the purpose of the sampling and end use of the data. This revised DMP was submitted to NJDEP and all Parties on August 22, 2014. A summary of the data validation level and frequency for soil samples analyzed for total and hexavalent chromium collected during the SA-6 Chromium Remedy and based upon the revised DMP was as follows:

- Level IV data validation 100% of samples analyzed that were used for compliance purposes (i.e. post-excavation soil samples and those collected for re-use applicability of excavated material and quarterly groundwater samples); and
- Level II data validation of approximately 25% on samples that were used for non-compliance purposes (i.e. samples for soils consolidated in the Open Space Area and those collected from soils being disposed of offsite).

Additionally, and in accordance with the DMP, data validation was also conducted on the following samples that included analysis of parameters other than total and hexavalent chromium:

- Level IV data validation on 100% of the monthly effluent water samples for tested parameters;
- Level IV data validation on 10% of soil samples for other (non-chromium) tested parameters; and
- Level IV data validation of approximately 10% of the PAMP air samples analyzed for hexavalent chromium for other (non-chromium) tested parameters. Those samples for which data validation was conducted only on a 10% frequency are indicated as **Tables 1A and 1B**.

The NJDEP issued guidance for the Data of Known Quality Protocols (DKQPs) in April 2014, approximately 1 year after the start of the SA-6 Chromium Remedy. The NJDEP was consulted regarding whether the questionnaire that is part of the DKQP process needed to be filled out for samples collected during the implementation of the Chromium Remedy. NJDEP concluded that the DKQP questionnaires were not required for the Chromium Remedy since the laboratory follows rigorous QA/QC protocols specifically developed for the chromium program in Jersey City which results in the generation of data of known quality and because the third-party validation process covers the data assessment and usability evaluation promoted in the DKQP guidance. We note that the validation process essentially asks the same questions as those on the questionnaire. As indicated above, 100% of samples analyzed for hexavalent chromium were validated by Validata, whereas validation of all other analytical parameters was conducted on 10% of the samples. Any rejected data was not used.

Given the high level of internal and external QA/QC that is conducted, the 100% data validation that Honeywell employs for hexavalent chromium, and validation of 10% of samples for analytical parameters other than hexavalent chromium, the analytical data meets NJDEP's standards of precision, accuracy, and usability.

Copies of the laboratory analytical reports and the data validation reports are available upon request. Electronic Data Deliverable (EDD) documentation is included in **Appendix B**.

1.7 REPORT ORGANIZATION

This document has been prepared to meet the provisions specified in Sections 1.6 and 5.7 of the TRSR and contains the following sections:

- *Introduction.* This section contains information on the purpose and scope of the document, pertinent site setting information, project background and relationship between the Bayside Redevelopment Area and Bayfront, COCs, and RAOs, overview of the Chromium Remedy construction elements, and report organization.
- *Preparatory Construction Activities.* This section describes the activities implemented that were in support of the main elements of the Chromium Remedy.
- *Modifications and field changes to SA-6 North 100% Design Report.* Changes to what was proposed in the SA-6 North 100% Design reports are summarized in this section.
- *Deferred Areas and Unanticipated Items Encountered During Remedial Activities.* These sections summarize uncompleted, unexpected or unanticipated site conditions encountered during implementation of the Chromium Remedy.
- *Dewatering and Construction Water Treatment* (Section 6) through *Site Restoration* (Section 14). Detailed descriptions of the main elements of the Chromium Remedy are provided in these sections. Tables and figures are used to graphically communicate the information.
- *Construction Permits.* This section presents a description of the permits obtained to implement the Chromium Remedy.

- *Sustainability Efforts During Construction.* Sustainable elements of the Chromium Remedy implementation are presented in this section.
- *Post-Remedy Operation & Maintenance.* This section describes the activities to inspect, monitor, and maintain elements of the Chromium Remedy that remain. In addition, groundwater monitoring and sampling is described.
- *Institutional Controls*. The implementation of deed notices, soil and groundwater remedial action permit(s), and a classification exception area are presented in this section.
- *Record Drawings*. Record drawings are discussed and provided.
- *Remedial Action Costs*. A summary of the costs to complete the project are provided.
- *Remediation Close Out Summary*. This section contains the conclusions and recommendations.
- *References.* References used in preparing this document are listed in this section.
- *List of Acronyms and Abbreviations.* This section contains a list of acronyms and abbreviations used in this document.

2.0 PREPARATORY CONSTRUCTION ACTIVITIES

On behalf of Honeywell, Amec Foster Wheeler managed and oversaw the bidding and contractor selection process for the SA-6 North Chromium Remedy. The selected contractor was Entact LLC (Entact) of Pittsburgh, Pennsylvania. Prior to mobilization, Entact prepared and submitted to Amec Foster Wheeler and Honeywell various work plans and submittals and acquired certain construction permits and approvals required by the SA-6 North 100% Design Report for implementation of the SA-6 North Chromium Remedy.

In addition, several other permits were obtained by Amec Foster Wheeler for execution of the SA-6 North Chromium Remedy during the design process. Other additional permits were obtained after the design process as detailed designs prepared by Entact were needed to obtain certain permits. Permits acquired for implementation of the SA-6 North Chromium Remedy are listed in Section 15.

2.1 MOBILIZATION AND SITE PREPARATION

Amec Foster Wheeler and Entact mobilized equipment and labor forces to the SA-6 North between March 1, 2013 and June 28, 2013. Mobilization and site preparation included the following key activities:

- Re-establishment of Amec Foster Wheeler and Honeywell office space in the southern portion of the building located at 60 Kellogg Street;
- Mobilization and set-up of office trailers at SA-6 South for Entact operations. The trailers were outfitted with temporary electrical, internet, and telephone infrastructure;
- Establishment of a global positioning system (GPS) base station for use with construction layout and surveying;
- Mark-out of excavation, capping, staging and lay down areas;
- Geophysical surveys to locate unknown utilities, utility mark-outs, onsite utilities to be maintained, relocated or abandoned;
- Establishment of vehicular traffic pathways and staging areas;
- Installation of soil and erosion controls;

- Setup of the temporary construction water treatment plant (CWTP) at SA-6 North. The CWTP was utilized for SA-6 North and SA-6 South;
- Relocation of electrical feed for SA-7 regional groundwater extraction wells;
- Construction of decontamination facilities; and
- Installation of fencing, and establishment of initial exclusion zones, contaminant reduction zones and support zones. Such zones were maintained and modified as needed throughout the execution of remediation activities.

Other preparatory activities that occurred either just prior to or during initial stages of the construction activities are described in the sections that follow.

The Chromium Remedial Contractor could not fully engage in site preparation activities until the Jersey City Entities vacated the Site. While the Chromium Remedial Contractor did what they could to prepare the Site and begin the Remedy, the delay in the Jersey City Entities vacating the Site delayed and hampered progress and work sequencing.

2.2 HEALTH AND SAFETY

Health and Safety on the SA-6 North Chromium Remedy was controlled by a Master Health and Safety Plan (HASP). The Master HASP was included as Appendix D of the SA-6 North Chromium Remedy 100% Design Report. Each site contractor was required to prepare and submit a HASP for their specific work requirements in conformance with the Master HASP. Direct responsibility for employee safety was retained by each contractor as outlined in the contractor's respective HASP.

The minimum personal protective equipment (PPE) for personnel within the fenced-in portion of the SA-6 North included hardhats, high visibility vests, gloves, safety glasses, and steel-toed boots. Minimum worker PPE within exclusion zones at the Site consisted of hardhat, safety glasses, high visibility vests, Tyvek™ suits, gloves, and steel-toed boots. Upon leaving the exclusion zone, disposable PPE was placed into containers staged within the contamination reduction zone. Non-disposable PPE was decontaminated in the same area. Disposable PPE was combined with other chromium-impacted waste and transported and disposed of offsite.

Decontamination fluids were processed through the onsite CWTP and subsequently discharged via JCMUA and PVSC discharge permits and agreements.

During the course of the project, 386,624 man-hours were worked on site. This number represents the combined total with SA-6 South as this was conducted as an integrated project. Of that total, approximately 40% of the total hours worked could be allocated to SA-6 North. There were no Occupational Safety and Health Administration (OSHA) recordable incidents for the SA-6 North Chromium Remedy. Annual details are summarized in the table below:

Year	Man-Hours*
2013	60,928
2014	132,272
2015	104,384
2016	89,040
Project Total	**390,624**

*The man-hours include all hours on both SA-6 North and SA-6 South from mobilization through December 9, 2016.

A perimeter air monitoring program was carried out to document protection of human health outside of the remediation zone(s) to airborne COCs. The perimeter air monitoring program is discussed in detail in Section 11, but background and baseline monitoring activities are presented briefly below in Section 2.3 as they were part of the preparatory construction activities. In the course of the project, there were no exceedances of the perimeter air action levels.

2.3 BACKGROUND AND BASELINE PERIMETER AIR MONITORING

A perimeter air monitoring program (PAMP) was implemented and maintained whenever ground intrusive activities were occurring throughout the course of the SA-6 Chromium Remedy. The PAMPs were provided in the 100% Design Report. Separate PAMPs were prepared for SA-6 North and SA-6 South to account for the disparate durations of ground intrusive activities between SA-6 North and SA-6 South. The PAMP for SA-6 North was Appendix E of the SA-6 North Chromium Remedy 100% Design Report. More details of the overall perimeter air monitoring program are provided in Section 11.

During the mobilization phase and prior to ground intrusive activities, background perimeter air monitoring was performed to establish baseline air conditions that could be used for comparison to those measured during ground intrusive activities as shown on **Table 1A**. The background sampling was conducted for a minimum of 10 days during fair weather conditions (i.e., not during rain, snow, or high humidity) from July 15, 2013 to August 6, 2013.

Upon completion of the baseline sampling activities, the laboratory analytical data, real-time volatile organic compounds (VOC) [if applicable] and particulate matter dust monitoring data, and meteorological data was tabulated and presented to Honeywell. **Table 1A** summarizes the baseline perimeter air monitoring sample analytical data collected. **Figure 4** indicates the locations of the PAMP stations.

2.4 SITE SECURITY

Site security was established during the mobilization phase. Site security focused on perimeter security and access. The primary feature of Site Perimeter security was the perimeter fence line. SA-6 North was already surrounded by a perimeter fence due to the presence of the Jersey City Entities. The existing chain link fence along the exterior borders of SA-7 and SA-6 South previously installed during the remediation of SA-7 was repaired and replaced, as needed. Where new fence was required, 8-foot chain link fence was installed (equivalent to that installed on SA-7). For approximately one year, under a New Jersey Department of Transportation (NJDOT) issued Highway Occupancy Permit, the eastern end of the area fencing and sidewalk were relocated into the shoulder of Route 440 to facilitate construction of the hydraulic barrier and capping remedy and to maintain site security within that area.

Access to SA-6 North was limited by the security manned gate off of Culver Circle previously established by the Jersey City Entities at the JCDPW portion of the Site. Once JCDPW vacated the Site, site access was maintained strictly through this gate and Honeywell provided the security forces at the gate. Security forces were maintained on a 24-hour basis and patrolled SA-6 North, SA-6 South, and SA-7 in vehicles.

Installation of the hydraulic barrier and capping remedy, along the eastern cap boundary, did require access to Route 440 from JCIA gate locations. Two excavation

areas did encroach onto the driveway entrances to the JCMUA. The JCMUA operations on Block 6 were fenced off as needed during the remediation activities; however, during the excavation on the JCMUA portion of the property, exclusion zones around the hot-spot excavation areas were established.

2.5 SUPPORT FACILITIES AND TEMPORARY SITE UTILITIES

Support facilities for the Honeywell and Amec Foster Wheeler construction management and Entact teams were also established during mobilization. Honeywell and Amec Foster Wheeler shared office space in the southern portion of the existing building at SA-6 South Site 125 (60 Kellogg Street) from the beginning of mobilization in March 2013 until February 2016. Once Honeywell and Amec Foster Wheeler moved out of the office space at Site 125, a set of permanent office trailers was established in the northeast corner of SA-6 North.

Water for construction and dust suppression activities was obtained from a JCMUA fire hydrant located on SA-6 North.

Additionally, the CWTP was constructed between the former JCMUA Sludge Digesters and the JCDPW "H" building. The construction of the CWTP is described in more detail in Section 6. SA-7 was used for the staging of incoming clean materials including surcharge fill and geosynthetic materials. Equipment staging, parking, truck staging, and other storage was located in available areas.

2.6 TRAFFIC CONTROL

Onsite traffic associated with remedial activities was controlled by using designated routes established in the SA-6 North 100% Design Drawings. A paved perimeter-road was established on SA-7, which provided access from both SA-6 North and SA-6 South. Temporary ramps were built out of clean fill for transport between elevation changes on both SA-6 South and SA-6 North. These routes were marked using orange construction fence, traffic barricades, jersey barriers, signage and/or other types of traffic control devices.

Offsite truck traffic routes were consistent with routes previously approved for SA-7 and SA-5 remediation projects. The offsite truck routes used are indicated on **Figure 5**.

2.7 DEMOLITION

In accordance with a Site Preparation Plan prepared for SA-6 North dated October 2008, five major structures were either totally or partially demolished as necessary to facilitate implementation of the chromium remedy: The Former Sedimentation Basin, JCIA Incinerator Building, Former Waste Management, Inc. Leased Garage, JCIA Maintenance Garage and the Salt Dome. The demolition of these structures was contracted by the JCRA to Gramercy Group, Inc. Procurement and Specification Documents for the demolition scope and engineering oversight were provided to JCRA by Amec Foster Wheeler.

The former JCIA facility was located at 501 Route 440 in Jersey City, New Jersey. After JCIA relocated to a new Municipal Services Complex on Linden Avenue, Jersey City, New Jersey in September of 2014, the structures were demolished as detailed in **Appendix J**. A Structures Demolition Closeout Report was submitted to JCRA dated October 2015.

2.8 UTILITY ABANDONMENT

Utilities at SA-6 North included gas, electric, telephone/internet, water, storm and sanitary sewer which serviced both the Site and adjacent properties. Utilities that crossed into the excavation areas were abandoned in full compliance with Jersey City's Utility Abandonment Regulation, New Jersey's Underground Facility Protection Act and only after giving advanced notification via New Jersey's One Call system. Underground water, sewer, gas, and electric utilities in the JCIA area, which were in the vicinity of EA-2/3, were abandoned during the demolition activities discussed in Section 2.7 and **Appendix J**. **Appendix C** includes the Utility Abandonment As-Built Record Drawing. Compliance requirements were completed prior to the inception of excavation activities.

2.9 GROUNDWATER TESTING FOR pH

During the mobilization phase and early stages of the Chromium Remedy implementation and prior to ground intrusive activities, Amec Foster Wheeler collected groundwater pH readings from five different locations along the proposed hydraulic barrier wall alignments at SA-6 North. The groundwater pH measurements were necessary to determine the type of sealant material that was suitable for the hydraulic barrier (sheetpile) joints.

The 100% Design required a cement-bentonite grouted seal on the sheetpile interlocks where the groundwater pH values were greater than 11.5 standard units. **Figure 6** shows the measured pH values at each SA-6 North and SA-6 South location and stationing along the hydraulic barrier wall alignments. Section 10 details the installation of the hydraulic barrier and sealing of its joints.

The pH monitoring was performed in accordance with the methodology documented in a technical memorandum, dated August 12, 2013 and submitted by Honeywell to All Parties. All pH monitoring was performed in the fill above the meadow mat (Stratum D). Groundwater measurements were collected by Amec Foster Wheeler personnel certified with the NJDEP Office of Quality Assurance to perform field analysis of non-potable water for specific conductance, turbidity, dissolved oxygen, pH and temperature.

2.10 WASTE CLASSIFICATION

The *Proposed In Situ Waste Classification and Disposal Facility Approval Sampling Plan* (Amec, 2013) established a protocol for the sampling and analysis of the estimated 25,120 CYs of potentially chromium-impacted material that was planned to be disposed offsite from both SA-6 North and SA-6 South. Soil boring logs can be found in **Appendix H.** Materials containing hexavalent chromium concentration >240 mg/kg at SA-6 North or >1,000 mg/kg at SA-6 South were designated for offsite disposal as shown on **Figures 7A through 7G**.

In order to properly classify the material for offsite disposal, the NJDEP *Waste Classification Request Form and Instructions* dated June 22, 2009 were used as a reference for the specific sampling frequency and analysis for the waste classification protocol in addition to any receiving disposal facilities' acceptance criteria. Results of the waste classification sampling are contained in **Appendix K**.

3.0 MODIFICATIONS AND FIELD CHANGES TO SA-6 NORTH 100% DESIGN REPORT

Throughout the course of the implementation of the SA-6 Chromium Remedy, it was occasionally necessary to make modifications to the SA-6 North 100% Design Report based upon differing or unforeseen field conditions and/or provide further detail to conceptual design items. Design changes were documented in DCs. Design changes are classified as either major or minor, where major DCs were defined as those that could significantly impact cost and schedule and minor DCs as those having minimal to no impact to cost and schedule.

DCs were issued using sequential numbering starting with DC 000. A single combined DC log was maintained for SA-6 North and SA-6 South (see **Appendix D**). Some DCs applied to both sites. For purposes of the Special Master process, a separate numbering system was maintained. The DC Log provides a cross reference to the Special Master numbering.

During the course of the project a number of requests for information (RFIs) were received from the contractor. These RFIs sought clarification on specific areas of the SA-6 North 100% Design Report. Responses to all requests were provided. In the cases where an RFI resulted in a design change, an associated DC was prepared and issued.

4.0 DEFERRED AREAS

As discussed in the Executive Summary, and Sections 1.4 and 2.8, there are three areas within the Residential Area and Additional Excavation Areas where excavation was technically impracticable during the implementation of the SA-6 Chromium Remedy. Remediation of these areas will be deferred until a later time[8] and will be subject to deed notices which Honeywell will establish and maintain until remediation can be completed. As remediation at each Deferred Area is completed, documentation will be submitted to the Special Master and Parties, and the remedial action permit and deed notice will be terminated by submitting documentation to NJDEP and All Parties. Termination of any deed notice will require approval of the Special Master, Parties and Court. Honeywell will document the remediation of each Deferred Area with a supplement to this CCR after the completion of the remedial work in each Deferred Area.

The Deferred Areas are shown on **Figure 16** and are generally referred to as the Route 440 ROW Deferred Areas (corresponding to Deed Notice Area #6 and Deed Notice Area #9), and the TA-7 Deferred Area (corresponding to Deed Notice Area #10). The Open Space Area, including the portion of TA-10 located to the south of the northern curbline of the future Stegman Boulevard, (Deed Notice Area #5) is also subject to a Conservation Restriction and is not considered a deferred area. Similarly, as discussed in Section 12, TA-10-1 (Deed Notice Area #7) is not considered a Deferred Area.

During the preparation of the SA-6 North 100% Design Report, Honeywell determined that a 24-inch ductile iron gas main owned by Public Service Electric & Gas (PSE&G) exists north of the Open Space Area adjacent to the Route 440 ROW. A section of the gas line had been relocated to the east into Route 440 to facilitate construction of the SA-7 Remedy. At that time, the section of gas main adjacent to

[8] The deferral of the remediation of the Route 440 ROW Deferred Areas is authorized in the Consent Order Entering Consolidated 100% Design for Study Area 6 North and South (ECF 1180) ("100% Design Order"). In the event that the Route 440 road widening project is not completed by the end of 2021 (five years after completion of the SA-6 Chromium Remedy), the Parties will confer regarding appropriate action for the Route 440 ROW Deferred Areas. *See* 100% Design Order at page 4.

the SA-6 North Open Space Area was also relocated in anticipation of the SA-6 North Chromium Remedy. The relocation scope did not, however, anticipate the northern and eastern limits of the EA-1, and EA-2/3. This resulted in a conflict between the gas main and the eastern edge of these excavation areas adjacent to Route 440. Honeywell inquired of PSE&G and NJDOT about the potential relocation of a portion of this gas main and determined, based on their input, that utility relocation should be deferred pending the comprehensive Route 440 Road Widening Project which is currently in the design phase. Consequently, a portion of excavations in EA-1 and EA-2/3 are deferred until the gas main is relocated in association with the Route 440 Road Widening Project. Honeywell will establish deed notices for these Route 440 ROW Deferred Areas (Deed Notices #6 and #9). Honeywell will continue to monitor NJDOT and PSE&G progress on the Route 440 Road Widening Project and will address residual chromium contamination proximate to the gas line when relocated in the future for the Route 440 improvements. Upon completion of the remedial work and full implementation of the Chromium Remedy the deed notices will be withdrawn.

Deed Notice Area #6 is an approximately 4,000 square foot strip of land on SA-6 North adjacent to the Route 440 ROW where the PSE&G gas main is located north of the SA-6 North Open Space Area. Excavation of residual chromium-impacted soil between the eastern edge of EA-2/3 and the SA-6 North property line in this Deed Notice Area #6 will be coordinated with the relocation of the gas main during the Route 440 Road Widening Project. A draft of the deed notice is contained in **Appendix S**.

Deed Notice Area #9 is comprised of two tracts of land; Tract 1 is near Culver Circle at the Route 440 ROW and Tract 2 is further south along the Route 440 ROW. (The ownership of the Deferred Areas within Deed Notice Area #9 differs from that of the Deferred Area of Deed Notice Area #6.) Tract 1 is an approximately 1,400 square foot area. Tract 2 is an approximately 970 square foot area. Excavation of residual chromium-impacted soil between the eastern edge of EA-1 and EA-2/3 and the SA-6 North property line in this Deed Notice Area #9 will be coordinated with the relocation of the gas main during the Route 440 Road Widening Project. A draft of the deed notice is contained in **Appendix S**.

It is not anticipated that implementation of the Bayfront Redevelopment Plan will impact Deed Notice Area #6 or Deed Notice Area #9. Because this area is so narrow,

is proximate to the Route 440 ROW, and the gas main is located within the area, any planned development of this area will also need to be deferred until the gas main is relocated.

Deed Notice #10 is the in-situ treatment area TA-7 on the JCMUA property. This area is within the area of the JCMUA fuel station. This area consists of aboveground storage tanks connected by underground piping to a pump island with fuel-dispensing cabinets/pumps. To prevent disruption to the JCMUA fuel station and due to the depth of chromium-impacted soil and the proximity of the nearby 72-inch forcemain, in-situ treatment was implemented in this area in lieu of excavation. As described in Section 12, in-situ treatment reduced the chromium-impacted soils to below 20 mg/kg for hexavalent chromium throughout the area except for one recalcitrant area of approximately 560 square feet. As part of facility upgrades, JCMUA plans on relocating their fueling system. Once this system is relocated, the limited area where hexavalent chromium soil remains >20 mg/kg will be excavated and the deed notice terminated. This area will not be impacted by Open Space Development.

5.0 UNANTICIPATED ITEMS ENCOUNTERED DURING REMEDIAL ACTIVITIES

During excavation activities at SA-6 North several unknown subsurface features and conditions were encountered requiring actions not included as part of the SA-6 North 100% Design including.

- Anomalous material[9] was identified in excavation area EA-1 near Culver Circle (see Section 5.1), EA-5 (see Section 5.6.2), and EA-8 (see Section 8.6);
- The 72-inch force main was found to be approximately 4 feet east of its recorded (as-built) location on the section of line east of the JCDPW "H Building" as shown in **Figure 12**;
- The location of the 72-inch force main caused a change in the alignment of the western section of the hydraulic barrier wall;
- The location of piles supporting the Sedimentation Basin caused a change in the alignment of the hydraulic barrier wall;
- Two unregistered underground storage tanks (USTs) were identified; and

[9] The SA-6 North 100% Design Report indicated that additional post-excavation sampling may be required if certain field conditions indicated the need to extend excavation beyond the identified limits, as determined by the onsite Construction Manager, or designee, or Honeywell's Remediation Manager. Conditions specified in the 100% Design Report that would trigger the need for additional post-excavation sampling included:

- Field observations indicating that an area previously defined as clean shows evidence of contamination. In that event, sampling may be conducted to help identify the source and assess the impact;
- Observations that were not consistent with soil conditions characterized by the samples that were collected during the RI and PDI;
- Observations of chromium blooms on the surface of soils previously thought to be clean; and
- Other field conditions which suggest chromium impacts may extend outside of the previously defined limits.

Material meeting one or more of the trigger criteria is referred to as anomalous material in this CCR.

- The presence of piles within the EA-5 excavation limits caused a change in the alignment of the eastern section of the hydraulic barrier wall.

Additional soil sampling was conducted that included post-excavation soil boring and sampling following excavation at excavation EA-2 (see Section 5.6.1), where the previous JCIA building prohibited full horizontal delineation of EA-2 during the PDI.

Further descriptions of the unanticipated items encountered are provided in the sections below.

As indicated in the SA-6 North 100% Design Report, due to the severity of the river bank slope along the western side of the Site, post excavation sampling at EA-8 was necessary following completion of excavation of this area to the design limits. The results of the post excavation sampling at EA-8 indicated a slight expansion of the original EA-8 area vertically and horizontally. The additional sampling and excavation activities are detailed in Section 8.6.

5.1 ANOMALOUS MATERIAL AT EA-1

During visual inspection of the excavation EA-1 sidewall, a small lens of potentially chromium-impacted soil was identified on the north face of the excavation adjacent to the NJDOT Culver Circle ROW. Field kits positively identified the material as hexavalent chromium. The excavation was extended to the SA-6 North and NJDOT property line as shown on **Figure 8A**. Since the material was located outside of the SA-6 North property boundary, no samples were collected. Honeywell notified the NJDOT of the visibly suspect material extending into NJDOT property via e-mail on May 18, 2016 (the email is attached after Declaration #3 in Part 17 of 22 in **Appendix T**).

5.2 HYDRAULIC BARRIER WALL PARALLEL TO THE 72-INCH FORCE MAIN

The SA-6 North 100% Design required "soft dig" to confirm the 72-inch force main location prior to initiating the Chromium Remedy near the force main. As the result of those investigations it was determined that the north-south run of the force main east of the "H Building" was approximately 4 feet east of the documented as-built location. To comply with separation distances between the hydraulic barrier and the force main memorialized in a Memorandum of Understanding (MOU) entered in to

by Honeywell and PVSC, it was necessary to move a run of approximately 240 linear feet of the north-south aligned hydraulic barrier approximately 4 feet east (see **Illustration 4**). This change was documented in DC 2014-09-02.

Additionally, after a series of discussions and meetings between NJDEP, PVSC and Honeywell following issuance of the SA-6 North 100% Design, the western-most section of the east-west aligned hydraulic barrier was moved approximately 15 feet to the south to increase the separation between the force main and hydraulic barrier (see **Illustration 4**). These hydraulic barrier relocations were documented in DC 2013-08-14 and in documentation to the NJDEP dated August 7, 2013. Record drawings contained in **Appendix C** show the re-aligned positions of the hydraulic barrier.

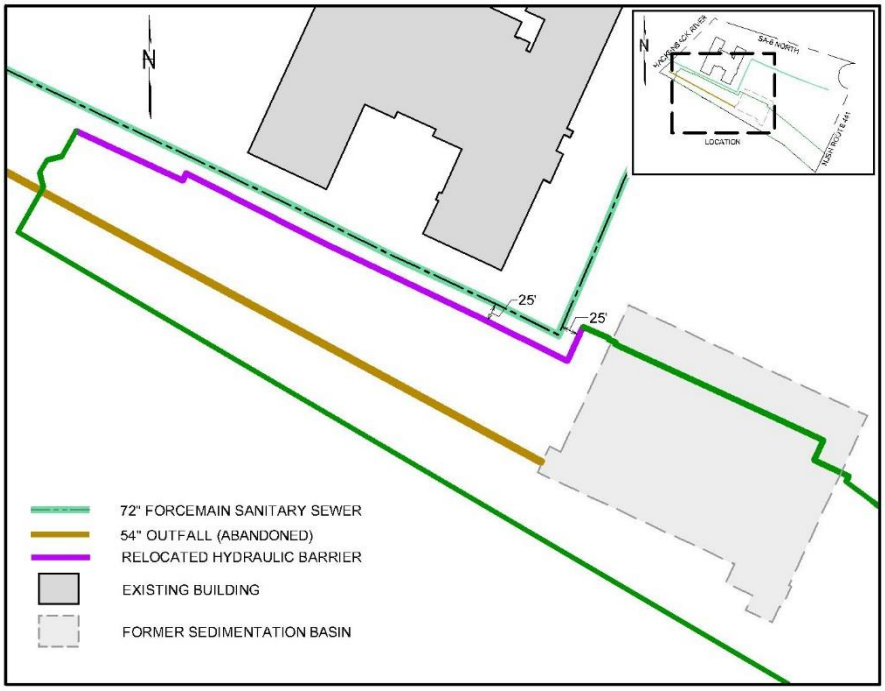


Illustration 4: Revised Hydraulic Barrier Location

The realignment of the northern barrier wall due to the 72-inch force main resulted in a decrease in the Open Space Area containment cell and RCRA-equivalent cap area. Along most of the realigned hydraulic barrier sections, moving the barrier did not result in leaving chromium-impacted soils outside of the new alignment of the Open Space Area boundary. However, some chromium-impacted soils at a depth from approximately 12 to 14 feet bgs were left outside of the new alignment along the east-west section and became part of TA-10. To the extent that these soils could

not be effectively treated in-situ, Honeywell agreed to incorporate the area into the Open Space Area institutional controls. During development, Stegman Boulevard will be constructed over this area and will effectively cap the underlying chromium-impacted soil, limiting the potential for contact with the soil. Honeywell will deed notice and conservation restrict, as part of the Open Space area, the portion of TA-10 located to the south of the northern curbline of the future Stegman Boulevard. In addition, Honeywell will establish a deed notice (Deed Notice #7) on the TA-10-1 in-situ treatment area as discussed more fully in Section 12.

Honeywell and PVSC entered into an MOU regarding implementation of the surcharge, hydraulic barrier installation, and construction of the RCRA-equivalent cap along the 72-inch force main in this area. The MOU required monitoring to be performed during those activities. Monitoring included installation of geophones on the 72-inch force main to allow for acoustical monitoring in addition to installation of inclinometers between the barrier wall and force main, and installation of survey monuments on the force main as shown in **Figure 12**. The acoustical monitoring program was conducted by Pure Technologies under contract to PVSC. The geotechnical, survey, and vibration monitoring plans were prepared by Amec Foster Wheeler and included in the First Amendment to the MOU dated October 10, 2013. The plans were submitted to PVSC for approval prior to commencing construction activities adjacent to the force main. The plans were reviewed and approved by Hatch Mott MacDonald on behalf of PVSC. Periodic reports were submitted to PVSC by Amec Foster Wheeler throughout the construction progress.

5.3 HYDRAULIC BARRIER WALL AT SEDIMENTATION BASIN

The SA-6 North 100% Design Report indicated that the hydraulic barrier would be subject to further minor changes pending the pre-trenching and verification of the pile locations along the alignment of the hydraulic barrier through the former JCMUA Sedimentation Basin. One objective of the SA-6 North 100% Design was to avoid removal of piles that penetrate the Stratum D. DC 2014-08-13 was submitted to document minor modifications to the hydraulic barrier alignment due to the located piles that support the Sedimentation Basin. This modification also reduced the number of corners of the hydraulic barrier wall. These changes also provided a wider utility corridor for the future Stegman Boulevard and allow for additional clearance between the cap geosynthetic materials and future Bayfront utilities.

5.4 USTS ENCOUNTERED

During the course of chromium-impacted soil excavation activities in September 2015 at EA-5 on Site 088 (former JCIA area) an unknown UST was discovered. A second unknown UST was encountered on Site 088 while doing subgrade preparation in May 2016 in the Open Space Area. In both instances upon discovery, Honeywell immediately notified their LSRP, Mr. Peter Jaran, P.E. of Equity Environmental Engineering, LLC (Equity), who is overseeing remediation of the non-chromium AOCs. Additional discussion of the USTs is contained in **Appendix J**.

5.5 EASTERN SECTION OF HYDRAULIC BARRIER WALL REALIGNMENT

Pre-trenching along an eastern section of the hydraulic barrier alignment south of the EA-5 excavation area revealed the presence of a cluster of piles. To avoid the piles, the hydraulic barrier alignment was moved approximately 3 feet to the north of the design alignment. This resulted in a slight increase in the Open Space Area cap area and an equivalent decrease in the area of EA-5. This change was documented in DC 2015-03-30.

5.6 ADDITIONAL SAMPLING CONDUCTED AT SA-6 NORTH

In accordance with the SA-6 North 100% Design Report, additional post-excavation sampling was conducted at EA-2 and EA-5.

5.6.1 Additional Sampling at EA-2

One supplemental post-excavation sidewall confirmation sample, 088-SB-190, was required at EA-2/3 to verify that the excavation was terminated in <20 mg/kg material. A soil sample could not be collected at this location at the required depth during the PDI since this corner of EA-2/3 was slightly under the JCIA building. Soil boring 088-SB-190 was performed on February 10, 2016 (see **Appendix H** for boring logs) and the soil sample collected at elevation 1.9 feet based on the National Geodetic Vertical Datum 1929 (NGVD29) and analyzed for hexavalent chromium as shown on **Table 2A**. Honeywell submitted the standard certification email, including an as-built survey and tabulated coordinates of the finished excavation at the bottom and sidewall sample locations, on April 3, 2016. The final excavation limits and sample locations are shown on **Figure 8B.** A Record Drawing of the final excavation limits is included in **Appendix C**.

5.6.2 Additional Sampling at EA-5

The excavation of EA-5 was conducted from August 27, 2015 through September 24, 2015. A single post-excavation sample, 087-EA-5-SW-092915, was taken of anomalous material observed approximately 6-8 feet above the bottom of the excavation (Stratum D) from the sidewall at EA-5 on September 29, 2015 as shown on **Figure 8B**. The 087-EA-5-SW-092915 sample results indicated that the hexavalent chromium level was <20 mg/kg as shown on **Table 2A**.

Once the preliminary analytical results of the post-excavation soil samples were obtained by Amec Foster Wheeler and reviewed with Honeywell, Honeywell submitted the results and a summary of the excavation effort to All Parties. Subsequently, Honeywell submitted the standard certification email, including an as-built survey and tabulated coordinates of the finished excavation at the bottom and sidewall sample locations, on October 12, 2016, after the analytical results were validated. Once the analytical results confirmed that the hexavalent chromium concentrations were <20 mg/kg in post-excavation samples, the excavation was backfilled with clean imported fill material.

In addition, at EA-5 less than 100 CY of asphalt was removed and sampled. The asphalt sample results indicated that low levels of arsenic were present above the Impact to Groundwater (IGW) and the residential direct contact soil remediation standards as shown on **Table 2B**. The arsenic-impacted asphalt was sampled, analyzed, evaluated, and handled in accordance with the NJDEP-approved Soil Management Plan (SMP), which was part of the 100% Design Report, and the *Proposed Concrete and Asphalt Sampling Plan* (CASP), dated September 2013, which was submitted to the NJDEP on October 28, 2013. The arsenic-impacted asphalt was placed in the Open Space Area.

6.0 DEWATERING AND CONSTRUCTION WATER TREATMENT

6.1 GENERAL

Dewatering was conducted to remove groundwater and stormwater from within the excavation areas and to minimize the moisture content of excavated soils. Capture, collection, and treatment of stormwater/surface water that came in contact with impacted soils was also completed. Collected groundwater, stormwater, and surface water from both SA-6 North and SA-6 South was pumped to the CWTP installed on SA-6 North.

For management of stormwater, diversion berms were installed upgradient of excavation areas and within large excavation areas as needed to divert the flow of surface water away from open excavation areas. Additional controls used to minimize the volume of water requiring treatment included extending sheetpile used for temporary excavation support, sealed jersey barriers, and minimizing the open excavation between the excavation face and the backfill.

Wastewater collected at designated decontamination pads was also collected and pumped to the CWTP for treatment.

6.2 EXCAVATION DEWATERING/PUMPING

Excavation dewatering in the Residential Area and Additional Excavation Areas was accomplished with a combination of shallow well points, and localized sumps and pumps installed above Stratum D and deep wells installed below Stratum D.

6.2.1 Well Installation

Shallow well points and deep wells for dewatering above and below Stratum D in the Residential Area were drilled and installed by B&B Drilling, Inc. (B&B Drilling), a licensed New Jersey well driller, in accordance with N.J.A.C. 7:9D. The shallow well points and deep dewatering wells are shown on the Excavation De-Watering Layout 03/15/16 figure provided by Entact contained in **Appendix I**. Deep dewatering wells within the main SA-6 North excavation area were given the designations DW-6 and DW-7. Because only EA-2/3 and EA-5 were deep enough to encounter groundwater, these were the only excavations that required dewatering wells. Any

other localized water intrusion in the other EAs was handled with intermittent sump pumping as needed.

The deep dewatering wells were drilled and installed by B&B Drilling using a hollow stem auger rig. Each was drilled through the Stratum O/D layer to a total depth of up to 48 feet bgs, 30 to 32.5 feet below the top of the Stratum O/D layer. A 6-inch diameter screen and riser pipe were used in the construction of each deep dewatering well. Screen lengths were 25 feet long in each. A 10-inch diameter steel conductor casing was set 1 to 2 feet into the top of the Stratum O/D layer to isolate water above the Stratum O/D layer from that below.

Well component specifications were submitted by Entact to Amec Foster Wheeler for review and approval prior to installation. Shallow well points within the excavation areas were removed with the excavated soils. Deep dewatering wells were abandoned by B &B Drilling's licensed driller once an adequate amount of backfill placement and compaction within an area was complete. After consultation with representatives of the NJDEP, Bureau of Water Allocation and Well Permitting, B&B Drilling determined that individual permitting of the shallow well points was not necessary, but that the shallow well points were covered under the Temporary Dewatering Permit that was obtained from NJDEP. However, because the deep dewatering wells were constructed through Stratum D (confining layer), B&B Drilling obtained permits for the deep wells. Well records for the deep wells are included in **Appendix E**. Abandonment reports are included in **Appendix E**.

Three well point header systems (H-19 to H-21) were installed within the excavation footprints prior to excavation as shown in the figure contained in **Appendix I**. H-19 was installed in EA-5, whereas H-20 and H-21 were installed in EA-2/3.

Shallow well points were installed by B&B Drilling. Shallow well points consisted of a 2.5" slotted polyvinyl chloride (PVC) well casing with filter pack placed around the slotted screen and a 1.5" PVC interior drop tube. The well casing was advanced to 2 feet below the anticipated bottom of the excavation or to the top of the Stratum D layer using hollow stem auger drilling methods. Each well point was equipped with a control valve and was connected to a header pipe (H-19 to H-21) via flexible hoses which connected to the electrically driven vacuum stations.

To determine the depth of the Stratum D prior to well installations, B&B Drilling drilled three investigatory boreholes per excavation for EA-2/3 and EA-5 along the dewatering header pipe as shown on the Excavation Dewatering Layout record drawing in **Appendix I** and collected core samples from each to determine the actual bgs depth of the Stratum D layer prior to installing interior and perimeter well points. Boreholes were offset approximately 10 feet from the well point location to protect the integrity of the well point. The boreholes were advanced with the drill rig to the within 4 feet of the assumed Stratum D layer. The remaining 4 feet were advanced using a 2-foot-long split spoon sampler to retrieve core samples. The core samples were evaluated by Amec Foster Wheeler to determine if the Stratum D layer was encountered. Soil boring logs are included in **Appendix H**. At the completion of sample collection, the depth of the observed Stratum D layer or termination point of the borehole was recorded and the borehole was grouted. The data collected during the split spoon sampling event was evaluated to determine the depth at which the dewatering well points would be driven to effectively dewater excavation areas within breaching the Stratum D layer.

6.2.2 SA-6 North Dewatering/Pumping System

The general process for managing water was to prevent water from contacting chromium-impacted fill materials. However, this was not possible for activities performed below the groundwater table and where surface water/stormwater and incidental precipitation fell on active excavation areas, backfill areas, exclusion zones and contaminant reduction zones. Construction water was removed from remediation and support areas, and stormwater that contacted chromium-impacted soils was removed. Dewatering with shallow well points and deep wells began in an excavation area and/or phase to achieve drawdown in advance of excavation activities. Thus, shallow well points and deep wells were installed prior to the start of excavation activities to allow adequate time for groundwater removal. Site dewatering data is included in **Appendix I**.

Localized sumps and pumps were used to remove stormwater and surface water that migrated into open excavations. Sumps were installed at the low point within an excavation area and consisted of submersible pumps placed inside perforated pipe wrapped in geotextile liner and embedded in stone. Sumps were not installed below and did not penetrate the Stratum D layer and were constructed and relocated as needed as excavations proceeded. Stormwater and surface water collected in sumps

were pumped to 21,000-gallon storage tanks for equalization prior to pumping through the treatment (filtering) portion of the CWTP as described in Section 6.3.

6.3 CONSTRUCTION WATER TREATMENT PLANT

The CWTP for SA-6 North and SA-6 South was constructed west of the JCMUA Digestion Tanks as shown on **Figure 2**. The CWTP was constructed within a secondary containment system for spill prevention. The secondary containment consisted of a 40-mil high-density polyethylene (HDPE) geomembrane overlain with a 6-inch layer of 1½-inch crushed stone. Class A geotextile liner was placed above and below the geomembrane. The 40 mil geomembrane panels were welded in the field. The secondary containment area had a perimeter berm constructed out of geotextile-covered jersey barriers. The CWTP consisted of approximately 300,000 gallons of untreated (influent) storage made up of eight 21,000-gallon "frac" tanks manifolded together by flexible hoses. Up to six additional frac tanks were positioned on SA-6 South during the peak of excavation activities.

The CWTP had a dual treatment train composed of 50-micron and 5-micron bag filters with a maximum throughput capacity of 500 gallons per minute (gpm). Treated effluent water was pumped into the unused JCMUA South Sludge Digestion tank. The digestion tank was fitted with a gate valve to regulate discharge. The tank normally operated in a flow through condition. During precipitation events, the valve was closed and the digester used to provide an excess of 1 million gallons of temporary effluent storage. The effluent was discharged by gravity to the JCMUA wet well. The CWTP base components are shown in **Figure 9**.

The PVSC-required MR-1 and MR-2 self-reporting documents for the CWTP were completed and sent to PVSC each month, reporting for the prior month. The effluent sample analytical results for the monthly samples are summarized on **Tables 3A, 3B, and 3C**. **Table 3B** also shows the chromium analytical results in each effluent sample. The total chromium load discharge limit permitted by PVSC is 11 pounds per day. The discharge limit was not exceeded during implementation of the Chromium Remedy. Chemical treatment to remove chromium from the construction water was not required.

Commissioning and startup test procedures specified in the SA-6 North 100% Design Report were performed prior to initial discharge from the effluent tank.

Entact oversaw operations and maintenance of the system during normal work hours.

Upon completion of the SA-6 North and South Chromium Remedies, the CWTP system was decontaminated, disassembled, and demobilized and residual solids and spent media generated as a result of the operation of the CWTP were sent offsite for disposal. Waste classification sample results of this material are included in **Appendix K**. The final wastewater discharge occurred on November 1, 2016 and involved the final rinse-out after cleaning of the interiors of the CWTP storage tanks and treatment components. Several of the frac tanks remained onsite for use in the SA-6 North Non-Chromium Remedy.

6.4 GROUNDWATER LEVEL AND BASELINE GRADIENT MONITORING

The SA-6 North 100% Design Report requires that the groundwater levels within the SA-6 North Open Space Area be maintained at lower levels than both SA-7 to the south and the Residential Area to the north in the post-Remedy condition. If monitoring indicates that this inward gradient is not being maintained, contingent dewatering is to be conducted within the Open Space Area to maintain compliance with the gradient requirements. The LTMP details the specific post-Remedy monitoring requirements, frequencies, and action steps depending on water level measurements.

Shallow groundwater levels were monitored within the SA-6 North Open Space Area along the border with SA-7 SCB using piezometers installed during the SA-7 remedy along the northern side of the SA-7 SCB wall as shown on **Figure 10**:

- 115-W6-SO;
- 115-W1-SO;
- 115-E5-SO; and
- 115-E4-SO.

Along the south side of the northern SA-7 SCB wall (adjacent to SA-6 North Open Space Area), the standpipes that monitor perimeter pools N1 through N4 were utilized to determine the head against the north side of the SA-7 SCB wall. An elevation of 4.0 feet above mean sea level, based on NGVD29, is the lowest elevation within the SA-7 site-wide underdrain system. Honeywell has installed water-level

monitoring points within SA-7, which will be used in the determination of whether there is an outward gradient from SA-7 towards SA-6 North.

The SA-6 North 100% Design Report detailed the installation of 5 pairs of new piezometers along the SA-6 North hydraulic barrier. These piezometers allow long-term monitoring of the hydraulic gradient within the shallow groundwater zone between the Open Space Area and the SA-6 North Residential Area. The 10 piezometers are:

Piezometers Installed Outside the Hydraulic Barrier:	Paired Piezometer Installed Inside the Hydraulic Barrier:
087-PZ-1	087-PZ-2
087-PZ-3	087-PZ-4
087-PZ-5	087-PZ-6
087-PZ-7	087-PZ-8
087-PZ-9	087-PZ-10

The locations of the 10 piezometers are shown on **Figure 10**. At each piezometer pair location, one piezometer is located inside of the SA-6 North hydraulic barrier and the other on the outside of the hydraulic barrier. The piezometers are constructed of 4-inch diameter stainless steel casing with a 5-foot-long screen set just above Stratum D. Record Drawing construction diagrams for the piezometers are contained in **Appendix E**.

Following installation of the geomembrane portion of the cap and initial drawdown of the contingent groundwater system, Amec Foster Wheeler conducted initial interim groundwater level monitoring on a bi-monthly basis. In accordance with the LTMP and GWLMP, Honeywell initiated long-term groundwater monitoring activities at SA-6 North in Spring 2017 per correspondence dated November 7, 2016 (see **Appendix G**). To supplement the manual groundwater measurements, groundwater level data loggers have been installed in each of the 10 piezometers and monitoring well 088-MW-112 located outside of the Open Space Area. The results of the manual readings taken during the first event per month of the initial interim groundwater level monitoring are provided in **Table 4**. The results indicate that an inward gradient has been maintained without active pumping of the contingent groundwater system. However, measurements at the 087-PZ-03 (exterior) and 087-PZ-04 (interior) piezometer pair have recently indicated an

outward gradient. The groundwater levels at 087-PZ-03 and nearby monitoring wells 088-MW-111 and 088-MW-112 installed in a former UST AOC also showed lower groundwater elevations than other wells in the SA-6 North Residential Area. This depression in groundwater levels may be attributed to the nearby breach in Stratum D at the former JCIA Incinerator Building/Trash Pit. Due to subsequent non-chromium remedy activities during the Spring of 2017 in the former JCIA former UST AOC resulting in abandonment and relocation of monitoring wells 088-MW-111 and 088-MW-112, data loggers are no longer in monitoring well 088-MW-112 and manual groundwater monitoring is no longer conducted in 088-MW-111 and 088-MW-112.

In response to Plaintiffs' request to establish baseline groundwater quality conditions inside the Open Space Areas, filtered and unfiltered groundwater samples were collected from each cap interior piezometer of both SA-6 North and SA-6 South. The samples were analyzed for total and hexavalent chromium. A summary of this data was included in the November 7, 2016 correspondence (see **Appendix G**) mentioned above and submitted to the Parties by Honeywell. The analytical results indicate that the filtered and unfiltered groundwater samples from the five inside piezometers (087-PZ-2, 087-PZ-4, 087-PZ-6, 087-PZ-8, and 087-PZ-10) were non-detect for hexavalent chromium and were below the NJDEP GWQS for total chromium.

Subsequent groundwater level monitoring and sampling activities and results conducted since the completion of the SA-6 Chromium Remedy have been provided by Honeywell either in separate memoranda or in monthly progress reports (See Appendix T). These groundwater level monitoring and sampling activities and results will also be included in the appropriate annual Integrated Groundwater Monitoring Reports.[10]

[10] The annual Integrated Groundwater Monitoring Reports are available at the following website: http://www.jerseycitychromiumcleanup.com/.

7.0 MONITORING WELL ABANDONMENT AND INSTALLATION

Selected monitoring wells at SA-6 North and SA-6 South were abandoned during implementation of the SA-6 Chromium Remedy in accordance with the Updated Monitoring Well Abandonment Plan which was submitted to NJDEP on April 20, 2017, which amended Appendix A-2 of the SA-6 North Chromium Remedy 100% Design Report. A minor DC 2014-06-06 provided clarification as to the wells requiring abandonment.

As discussed in Section 6.4, five pairs of new shallow piezometers were installed on either side of the SA-6 North hydraulic barrier to monitor hydraulic gradients across the barrier as shown on **Figure 10** and detailed on **Table 5**. As detailed in Section 12, three monitoring wells were installed within the TA-10-1 area. The logs are included in **Appendix H**.

Existing monitoring wells which are to be maintained in the Open Space Area will be raised to meet proposed grade and re-surveyed with revised Form B certifications. These monitoring wells are shown on **Figure 10** and are the following:

- 115-W6-SO;
- 115-E5-SO;
- 115-W1-SO; and
- 115-E4-SO.

In addition, as indicated in Section 6.4, five pairs of new shallow piezometers were installed on either side of the SA-6 North hydraulic barrier to allow monitoring of the hydraulic gradient of the shallow groundwater zone between the Open Space Area and the SA-6 North Residential Area. See **Appendix E** for details of construction.

All well abandonment activities were performed in accordance with N.J.A.C. 7:9D by a New Jersey licensed driller from B&B. Well abandonment records are included in Appendix E. Permits for new wells were obtained from the NJDEP by B&B. New

piezometer/well permits, Form A & B wells records, and new well construction diagrams are included in **Appendix E**.

8.0 EXCAVATION

Excavation of chromium-impacted soil was performed consistent with the NJDEP-approved RAWP, SA-6 North 100% Design Report, and subsequent DCs applicable to excavation. The excavation at SA-6 North was implemented only in the Residential Development portion of AOC-1. Excavation was performed at SA-6 North from June 16, 2015 to March 9, 2016. More details concerning the excavation sequence and schedule are provided in Section 8.3. A progression chart was maintained throughout the project that tracked excavation and backfilling operations showing zones for work sequence and quality control and was reviewed with all Parties at routine progress meetings/conference calls and was provided in the Monthly Progress Reports (**Appendix T**). As excavation progressed, Honeywell periodically submitted to all Parties documentation of completion of portions of the excavation operations in accordance with the SA-6 South Standard Operating Procedure - Confirmation of Excavation Limits, dated March 3, 2014 (and including Honeywell's April 24, 2014 letter and attachments). The excavation completion correspondence is included in Attachment F to Declaration No. 3 in **Appendix T**. Record Drawings for excavation and backfill work are included in **Appendix C**.

8.1 TEMPORARY EXCAVATION SUPPORT ALONG ROUTE 440 EA-1, EA-2/3

Temporary excavation support consisting of sheetpile and soldier pile was installed at the locations shown on SA-6 North Temporary Support of Excavation Plans (SN-501 to SN-505) as prepared by Honeywell's geotechnical consultant, MRCE. The original SA-6 North 100% Design Report details were modified based on the Remedial Contractor's specialty subcontractor input (Linde Griffin) provided through the RFI process and as approved by MRCE. Hatch Mott MacDonald also reviewed the design of temporary excavation support proposed along critical infrastructure adjacent to Route 440 on behalf of JCMUA and Bayonne Municipal Utility Authority (BMUA). The temporary excavation support was removed.

The temporary excavation support systems consisted of a combination of 2807 Hoesch Larssen Z sheetpile and a system of drilled soldier piles (H Piles), whalers and steel road plate lagging. The final field installation details were adjusted to reflect the field verified locations of the 36-inch BMUA forcemain and 48-inch reinforced concrete pipe (RCP) JCMUA sewer line. The depth of excavation and set

back distance at EA-1 allowed for excavation by sloping without the need for shoring or other temporary excavation support.

The Entact Quality Control Engineer monitored the temporary excavation supports for horizontal deflection during excavation. The 100% Design Report also mandated the need for vibration monitoring when sheeting was being driven in close proximity to underground utilities. Vibration monitoring is discussed further in Section 10.3.

8.2 EXCAVATED SOIL MANAGEMENT

Excavated soil was managed onsite in accordance with the NJDEP-approved SMP and the approved soil erosion and sediment control plan. Prior to the start of the Chromium Remedy, as part of the PDI, post-excavation equivalent samples were collected and boring locations were surveyed (see the PDI Results and Mapping Report in Appendix B of SA-6 North 100% Design Report). The post-excavation equivalent samples established the horizontal and vertical limits of the chromium-impacted soils and, thus, defined the extent of the excavations for most of the site. Sidewall confirmation samples were not required where the excavation area abutted property boundaries or the hydraulic barrier.

As indicated in the 100% Design Report, the steep slope along the bulkhead in the vicinity of EA-8 prevented the full delineation of chromium-impacted soil in this area during the PDI. Additional post-excavation sampling was required to confirm excavation limits as the excavation at EA-8 progressed.

Other than EA-8 and one isolated location at EA-2 (as explained in Section 5.6.1), the PDI sampling at all other excavation areas allowed the remedial action to be more definitively designed and implemented in the field and is a process that has been accepted by the NJDEP in the RAWP and has been implemented successfully by Honeywell at other sites.

The PDI sample hexavalent chromium results also established the designation and final disposition of the excavated material. Entact adopted three designations for SA-6 North for tracking and management purposes based upon their hexavalent chromium concentrations as follows:

- **A Material**: <20 mg/kg hexavalent chromium;

- **B Material**: 20 to 240 mg/kg hexavalent chromium;
- **C Material**: >240 mg/kg hexavalent chromium.

As provided in the SMP and SA-6 North 100% Design Report:

- **A Material** was stockpiled and tested to confirm its designation and, if confirmed, reused as backfill. If sample results of the A Material stockpiles, or portions of stockpiles, indicated that the material corresponded to one of the other designations, then the material represented by such samples was managed accordingly. **Table 6A** is the Stockpile Tracking Table. **Table 6B** presents the analytical data related to the stockpiles.
- **B Material** from SA-6 North was consolidated in the SA-6 North Open Space Area.
- **C Material** was shipped offsite for disposal. The material for offsite disposal was characterized as non-hazardous or hazardous waste depending on waste classification results (see Section 8.7)

The PDI sample results established the elevations to which excavation was to be performed for an excavation area, with the understanding that if Stratum D (i.e., "meadow mat") was encountered the excavation could be halted at a shallower depth. As discussed in Section 10.7, to maintain the integrity of Stratum D as a confining layer in the Residential Area, the excavations did not extend vertically below Stratum D.

Excavation was performed using hydraulic excavators directly loading into off-road articulated dump trucks (end dumps) to transport to designated on-site stockpiling areas. The end dumps did not leave SA-6 North, and were decontaminated if they were travelling out of an exclusion zone. The excavators were equipped with GPS equipment manufactured by Trimble®. Entact loaded X, Y, Z coordinates of the designed excavation limits into the GPS system and a transponder was attached to the bucket of the machine enabling the operator to precisely excavate in real-time to the design limits. Additionally, using the GPS and known coordinates differentiated the extents of the designation of various soils as shown on Design Drawings CN-116 to CN-122 based upon the concentration of hexavalent chromium. A summary of the

total excavated volume of each waste material is provided in the quantity summary table in Section 1.6.

Stockpiles of hazardous C Material (when not direct loaded) were covered with plastic sheeting to minimize air-borne dust and stormwater runoff. As provided in the SA-6 North 100% Design Report, excavations and soil stockpiles were protected from flooding to the 100-year flood elevation (10.2 feet) based on the NGVD29 datum by one or more of the options provided in the NJDEP Coastal Area Facilities Act (CAFRA)/Flood Hazard Area (FHA) permit (see Section 15 for more details). Daily inspections of the liners and plastic sheeting were performed to minimize migration of chromium-impacted soils beyond the designated stockpile area.

8.3 EXCAVATION SEQUENCING AND SCHEDULE

The EAs were each geographically distinct areas and were completed in sequence. Excavation began at EA-7 on the western portion of the Site and proceeded to EA-8 north of EA-7. Excavation of EA-4, then EA-5 were completed. The excavations along the Route 440 area were completed last with EA-2/3 conducted prior to EA-1.

A summary of the excavation schedule is provided in the table below.

Area Excavated	Start Date	End Date
EA-1	February 8, 2016	March 9, 2016
EA-2/3	November 5, 2015	January 6, 2016
EA-4	August 20, 2015	August 26, 2015
EA-5	August 24, 2015	September 8, 2015
EA-7	June 16, 2015	June 26, 2015
EA-8	June 18, 2015	December 9, 2015

8.4 EXCAVATED MATERIAL (STOCKPILE) TESTING

During the Chromium Remedy implementation, overburden soils (A Material or <20 mg/kg for hexavalent chromium) were excavated and set aside to allow for the excavation of chromium-impacted B (>20 mg/kg for hexavalent chromium) or C (>240 mg/kg for hexavalent chromium) below. In accordance with the SMP, stockpiles of A Material were managed onsite and sampled to confirm that the soil was <20 mg/kg for hexavalent chromium. The size of such A Material stockpiles

ranged from 50 to 5,200 CY. The volumes within individual stockpiles differed based upon site layout constraints and the contractor's preferences for advancing excavation and overall soil management. Once a stockpile was deemed completed, sampling commenced. Grab samples were collected from each stockpile for hexavalent chromium analysis at a maximum sampling frequency of 1 sample per 250 CYs. If the hexavalent chromium concentration in any sample from a portion of a stockpile was equal to or greater than 20 mg/kg, but below 240 mg/kg that portion of the stockpile was isolated from the remainder of the stockpile and consolidated in the SA-6 North Open Space Area. Stockpiled soil that was verified to contain <20 mg/kg hexavalent chromium was then approved for re-use as backfill in excavations. This approved-for-reuse A Material is still considered historic fill. At least 6 inches of imported clean backfill was placed over the reused A Material as needed to achieve the design grades. An institutional control (Restricted Area/Deed Notice) for the remaining site-wide historic fill soil will be filed in accordance with the NJDEP-approved RAWP as part of an RAR for non-chromium impacts to be submitted by Honeywell's LSRP.

Following surcharge, approximately 2 feet of <20 mg/kg of overburden soils (14,000 CY of historic fill) were stripped from Area 1N in accordance with SA-6 North Consent Decree paragraph 56(d) and DC 2015-09-02 to create additional capacity for the consolidation of 20-240 mg/kg chromium-impacted soils within the SA-6 North Open Space Area. This material had been pre-characterized as non-chromium-impacted soil with RI/PDI sample results. In accordance with the SMP, following excavation, the stockpiles of this historic fill soil were sampled before reusing as backfill in the SA-6 North excavations. Results confirmed that hexavalent chromium concentrations were below 20 mg/kg. Following removal of the Area 1N overburden soils, the cap subgrade was graded and compacted in accordance with the lines, grades and compaction requirements indicated in the Final 100% Design and DC 054.6 dated September 2016.

8.5 EXCAVATION EXTENT SURVEYING AND EXCAVATION COMPLETION CONFIRMATION

As discussed in Section 8.2, post-excavation equivalent samples collected during the RI and PDI established the horizontal and vertical limits of the chromium-impacted soils for most of the site and, thus, defined the extent of the excavations at SA-6 North. On January 30, 2012, Honeywell submitted a request and justification for a

variance in post-excavation sidewall (1 per 30 linear feet) and bottom sample (1 per 900 square feet) frequencies for SA-6 North to the default frequency mandated in the TRSR. While most excavation sidewall and bottom sample frequencies met these default criteria, there were a few locations where the frequencies did not meet the criteria. However, Honeywell showed in the variance request that, taken as a whole, the average sample spacing met the criteria. Further, Honeywell supported the variance request in the January 30, 2012 submittal with the following justification:

- The remedy is focused on a single contaminant, hexavalent chromium. This eliminates the possibility that another contaminant that could potentially have been present would be missed by applying the proposed sampling frequency.
- Soils impacted by hexavalent chromium can easily be identified based on color and texture, and therefore, can be managed appropriately should any such soils be encountered in the area characterized using the proposed spacing.
- Because the remediation areas will be dewatered prior to excavation, visual examination of the sidewalls and excavation bottoms will be feasible and the presence of any hexavalent chromium impacted materials will be easily identified. If necessary, additional sampling and/or remediation will be conducted, should any such materials be identified.

NJDEP approved the alternative post-excavation sidewall and bottom sample frequencies in a letter, dated February 16, 2012. Section 5.0 documents supplemental sampling conducted in excavations EA-1 and EA-5 due to the observance of anomalous material in isolated sidewall locations in those areas and at EA-2 where PDI sampling could not be fully completed due to a previous building interference in an isolated portion of that area. Section 8.6 documents additional sampling conducted in excavation EA-8 where the excavation limits could not be fully defined during the PDI due to the steepness of the slope along the Hackensack River embankment. Additionally, post-excavation samples were collected in EA-8 due to visual identification of anomalous material requiring additional horizontal and vertical delineation samples to define the excavation limits of this expanded area. The PDI sample data are included as Appendix B to the SA-6 North 100% Design and the location of the PDI samples are shown on drawings C-111,

Excavation Plan for Excavations Areas 1, 2/3, 4 and 5 and C-112, Excavation Plan for Excavations Areas 7 and 8, in **Appendix C** to this CCR.

Following the excavation in each excavation area, the horizontal and vertical extents of the completed excavations were surveyed and Honeywell periodically submitted excavation completion documentation to the Special Master and Plaintiffs prior to commencing backfilling. See Attachment F to Declaration No. 3 in **Appendix T**. The submittals summarized the activities undertaken to complete the excavation and included the following Engineer's certification:

> "Amec inspectors certify to the best of our technical ability that impacted soils as defined in the 100% Design Report have been removed and that the requirements to allow backfilling had been met."

Honeywell also noted, where applicable/appropriate, that the excavation terminated [by depth] in the Stratum D and provided an Excavation Bottom Map that included the surveyed post-excavation bottom elevations for each excavation area. Honeywell further stated that the contractor was ready to backfill the respective excavations. During the course of the excavation, the Special Master acknowledged receipt of Honeywell's submittals and the notification that the contractor was ready to backfill.

Surveying of the final "as-built" horizontal and vertical extent of the excavations was conducted by Maser Consulting P.A. (Maser) of Marmora, New Jersey. R. Thomas Hugg, a New Jersey Professional Land Surveyor, certified record drawings surveyed by Maser. Record Drawings are discussed and presented in Section 19.

Maser also surveyed the position and elevation of each PDI post-excavation equivalent soil sample to verify that the excavation was carried to or beyond the confirmatory points and tabulated the survey information. The table is provided in **Appendix C**.

For each excavation area, the table provides:

- The coordinates of the PDI bottom samples and a comparison of the actual excavation elevation to the targeted (design) elevation at the established PDI bottom sample locations; and

- The coordinates of the PDI sidewall samples and a comparison of the actual excavation elevation to the targeted (design) elevation at the established PDI sidewall sample locations.

8.6 ADDITIONAL SAMPLING AT EXCAVATION EA-8

The PDI investigation at EA-8 that was submitted in the SA-6 North 100% Design Report indicated the area boundaries, but not the final depths of the excavation. The geoprobe access to this area during the PDI had been limited due to a steep slope to the Hackensack River and active operations and storage by JCDPW. Therefore, the SA-6 North 100% Design Report detailed that additional vertical sampling be performed once the excavation footprint was advanced to elevation 7 feet based on the NGVD29 datum. Once that elevation was reached, nine post-excavation soil samples were collected on June 25-26, 2015 throughout the footprint of the excavation to establish the limits of excavation below elevation 7 based on the NGVD29 datum. As shown on **Table 7A**, hexavalent chromium was detected >20 mg/kg in some of the soil samples. Therefore, additional excavation was conducted to elevations 3.7 feet and 2.0 feet based on the NGVD29 datum in sub-areas designated EA-8 Area 1 and EA-8 Area 2 as shown on **Figure 11A**. Confirmation samples were collected on July 23, 2015.

During the inspection of the EA-8 Area 1 limits, an area of anomalous material was identified in the southern sidewall. Therefore, additional soil sampling and excavation was conducted in sub-areas designated EA-8 Areas 3 and 4 to elevation 1.6 feet based on the NGVD29 datum. Additional confirmation samples were collected on August 12, 2015, October 21, 2015, and November 12, 2015. The analytical results are included in **Table 7A**. The final vertical and horizontal excavation limits of EA-8 were documented in DC 2015-11-30.

Additional anomalous material was visually identified in the southwestern sidewall near 087-SB-102, which required sub-area EA-8 Area 5 to be expanded approximately 8-10 feet to the southwest as documented in DC 2015-9-04 and DC 2015-11-18.

All sampling and analysis of samples was performed in accordance with the Data Management Plan combined for both the SA-6 South and SA-6 North Chromium Remedies which was included as Appendix H of the SA-6 North Chromium Remedy

100% Design Report. EDDs for final (<20 mg/kg for hexavalent chromium) post-excavation samples were submitted to the NJDEP as documented in **Appendix B**.

8.7 OFFSITE TRANSPORTATION AND DISPOSAL

C Material classified as hazardous waste from SA-6 North and a limited amount of excess material from SA-6 South Open Space AOC that was confirmed >1,000 mg/kg for hexavalent chromium (see Section 8.4) was loaded into tri-axle dump trucks and shipped offsite to a rail transfer station, owned by Horwith Leasing Company LLC., in Northampton, PA. The material was then subsequently trans-loaded into gondola railroad cars and transported to the contracted disposal facilities as indicated below. Gondola cars were lined with synthetic liners to contain the chromium-impacted waste during rail transport. C Material classified as non-hazardous waste from SA-6 was shipped in tri-axle dump trucks directly to Middlesex County Landfill. Approximately 10,000 tons of hazardous soils were disposed of offsite. Waste manifests are included as **Appendix K**.

Trucks were lined with synthetic liners which closed over the loads near the truck scales before leaving the work zone. Dump truck bodies were equipped with road covers which were closed over the liners before leaving the project site. Initially, trucks were decontaminated at the contamination reduction zone, and washed in a designated truck wash zone before leaving the site and entering the public roadways.

The offsite disposal facilities for chromium-impacted material were:

Disposal Facility	Material Type	Waste Classification	Weight (Tons)
Heritage/US Ecology	Chromium-Impacted C Material Excavated from the Residential Development portion of AOC-1 at SA-6 North and excess D Material (>1,000 mg/kg) from SA-6 South Open Space Area	Hazardous	10,000
Middlesex County Landfill	Chromium-Impacted C Material Excavated from the Residential Development portion of AOC-1 at SA-6 North	Non-hazardous	4,000
Bayshore Soil Management	Frac Tank Sediment & Soil	Non-hazardous	120
Clean Earth	Personal Protective Equipment	Non-hazardous	40 CYs

9.0 EXCAVATION BACKFILLING, BACKFILL COMPACTION, AND BACKFILL COMPACTION TESTING

Backfilling within the excavations in the Residential Area and the Additional Excavation Areas included the spreading/placing, compacting, and grading of backfill materials that met the Specifications 02315 and were approved by the EOR.

9.1 BACKFILL SOURCES

The majority of the SA-6 North Residential Area and the Additional Excavation Areas was backfilled with historic fill soils that were sampled and confirmed <20 mg/kg for hexavalent chromium. Approximately, 21,900 CY of historic fill were placed in the Residential Area and the Additional Excavation Areas and compacted in accordance with Specification 02315-3.12.B.5. Imported clean backfill (referred to as "Celgene material") from a construction site in Summit, New Jersey was placed as bridge lift underneath the historic fill in portions of the SA-6 North Excavation Areas. Sources of imported backfill from offsite locations were tested and analyzed to confirm the material met the NJDEP's definition of clean fill in accordance with the TRSR and did not contain hexavalent chromium above 1 mg/kg. Approximately 6,000 CY of the Celgene material were placed as bridge lift and compacted in accordance with the Specifications.

These quantities have been updated to reflect the combined imported fill from SA-6 North and SA-6 South from those reported in the Draft SA-6 South Chromium RAR that was submitted to NJDEP and all Parties in December 2016 and in the Revised Draft SA-6 South Chromium RAR that was submitted to NJDEP and all Parties in February 2017.

Source	Quarry	Material Type	Approximate Volume Imported (CYs)
Weldon	Watchung	Screenings	83,500
Weldon	Watchung	Quarry Process	9,300
Weldon	Watchung	DGA	300
Weldon	Lake Hopatcong	Screenings	5,300
Tilcon	Mount Hope	DGA	18,800
Tilcon	Mount Hope	1.5" Stone	4,200
Tilcon	Mount Hope	3/8" Stone	800

Source	Quarry	Material Type	Approximate Volume Imported (CYs)
Tilcon	Mount Hope	6"-18" Riprap	100
Tilcon	Mount Hope	2.5 Stone	500
Liberty Aggregates	Liberty	I-5 Structural Fill	5,000
Tilcon	Mount Hope	I-8 Structural Fill	27,000
Tilcon	Mount Hope	#57 Stone	12,300

9.2 BACKFILL TESTING

Backfill quality control testing was performed as indicated in the SA-6 North 100% Design Report. One sample for chemical analytical testing was required for each 5,000 cubic yards brought onsite to confirm the imported backfill material met the definition of clean fill in the TRSR. Analytical results for imported backfill used in the Residential Area and the Additional Excavation Areas were compared to the Residential Direct Contact Soil Remediation Standards. In addition, the SA-6 North 100% Design Report required imported fill to have a hexavalent chromium concentration of ≤1 mg/kg.

Entact collected samples of imported fill material for analysis, other than hexavalent chromium, by their subcontracted analytical laboratory, ChemTech Laboratories of Mountainside, New Jersey. Samples were submitted to Eurofins (a.k.a. Lancaster Laboratories) of Lancaster, Pennsylvania for analysis of hexavalent chromium by USEPA Method 7199.

In accordance with the SA-6 North 100% Design Report imported fill samples were analyzed for (see **Appendix L**):

- Target Compound List (TCL) VOCs by SW8260
- TCL Semivolatiles by SW8270
- Extractable Petroleum Hydrocarbons (EPH) by New Jersey extractable petroleum hydrocarbons (NJEPH) 10/08
- Target Analyte List (TAL) Metals by SW6010B/7471
- Pesticides by SW8081
- Herbicides by SW846 8151
- Polychlorinated Biphenols by SW8082

- Cyanide SW846 9012
- Hexavalent Chromium by USEPA 7199
- Synthetic Precipitation Leaching Procedure (SPLP) Metals by SW6010B/7471 only for those contaminants that exceed IGW standards.

Clean fill certifications, certifying that the soil material was virgin and free of hazardous material and contaminants were obtained from the suppliers of the imported source location and are included in **Appendix L**. Specification 02315 also required one sample of each source of imported fill to be tested for maximum dry density and optimum moisture content as determined by American Society of Testing Materials (ASTM) D 698 (Standard Proctor). The Proctor results were used by the technician conducting the compaction testing in the field to determine the degree of compaction based upon a percentage of the Proctor as specified (see Specification 02315.3.12 and **Table 9**) in the SA-6 North 100% Design Report.

9.3 CONCRETE TESTING

Onsite sources of recycled concrete from SA-6 North included:

- approximately 5,000 CYs of crushed concrete generated from demolition of the Sedimentation Basin as reported in the SA-6 South Chromium RAR; and
- approximately 5,740 CY of crushed concrete generated from various excavations as discussed below.

All concrete materials were evaluated for suitability for onsite reuse through sampling and analysis. The SMP allowed concrete meeting NJDEP reuse parameters to be reused onsite as backfill in excavations or placed in the Open Space Area with consolidated chromium-impacted soil.

Concrete sampling and analysis was conducted in accordance with the September 2013 CASP. The procedures outlined in the CASP were in accordance with the NJDEP guidance document titled *Guidance for Characterization of Concrete and Clean Material Certification for Recycling*, dated January 12, 2010 and the NJDEP guidance document titled *Alternative and Clean Fill Guidance for SRP Sites*, dated December 29, 2011 – Version 2.

Concrete samples were collected at a maximum sampling frequency of one sample for every 250 CYs of concrete. Representative samples were obtained from the concrete cross-section (including the exposed surfaces) and crushed to fit into laboratory-supplied sample containers. A total of 18 concrete samples were collected from the crushed concrete generated from demolition of the sedimentation basin and the data was reported in the SA-6 South Chromium RAR. A total of 19 concrete samples were collected from the remaining sources of recycled concrete from SA-6 North. An additional 18 concrete samples were collected for synthetic precipitation leaching procedure analysis for those instances when the IGW standards were exceeded. Concrete that met the reuse criteria was sized to 3-inch minus for reuse by Entact in accordance with the SA-6 North 100% Design Report.

Concrete samples were field screened with a photo-ionization detector (PID) and collected with a bias towards any instrument reading or visual contamination. Sample collection, preservation and handling was performed in accordance the NJDEP Field Sampling Procedures Manual, August 2005, updated 2011 (NJDEP, 2005) and the Quality Assurance Project Plan provided in Appendix H-1 of the SA-6 North Chromium Remedy 100% Design Report.

In accordance with the CASP, concrete samples were analyzed for the same parameters as those tested on imported fill materials. The concrete sample results are included in **Tables 8A through 8H**.

9.4 BACKFILLING AND COMPACTION

The SA-6 North 100% Design Specification 02201.1.01.C allowed for the use of crushed recycled concrete as bridge lift where necessary to stabilize soft or wet subgrade materials at the bottom of excavations. A Material re-use soil or the offsite sources of clean backfill indicated above in Section 9.1 were placed over the bridge lift to bring the backfill to the appropriate design grades.

Bridge lifts were initially placed in nominal 12-inch lifts and compacted with a minimum of three passes of a static steel drum roller as specified in Specification 02201.3.03 and **Table 9**. Vibratory compaction equipment was not used in the bridging lift. Based on the observation of the stability of the lift the EOR permitted increasing the lift to 18 inches using dozer placement. If the lift was stable, static rolling was initiated. In some locations, it was necessary to defer rolling until up to a 3-foot-thick bridging lift was placed due to excessive dewatering. In other

locations geotextile fabric was added between bridge lift layers or on top of the bridge lift to add additional reinforcing and material separation. Subsequent lifts of non-bridge-lift backfill materials were placed at a maximum of 12 inches thick loose lift and compacted using vibratory smooth-drum rollers to at least 95% of the maximum dry density in accordance with the Specifications 02315.3.11 and 02315.3.12 (see **Table 9)**.

Approved-for-reuse A Material (historic fill) was placed and compacted at the bottom of the excavations and buried to the maximum extent possible with at least 6 inches of imported clean backfill as needed to achieve the design grades. The variable nature of approved historic fill reuse material precluded testing for compaction using the Proctor density methods. The condition of the material was observed, unsuitable materials removed, and compaction conducted in accordance with the specified methodology using 2 to 3 passes of a vibratory roller.

9.5 IN-PLACE BACKFILL DENSITY TESTING

The in-place density of the compacted imported backfill materials was verified in the field using a nuclear surface moisture-density gauge in accordance with American Society of Testing Materials (ASTM) D 8938. Vertical V-Northeast, Inc. of Rahway, New Jersey, was subcontracted to Entact and performed compaction testing in the SA-6 North Open Space Area. Bridge lift and historic fill in the SA-6 North Residential Area and the Additional Excavation Areas were not tested for compaction. Figures showing the in-place density testing locations in the Open Space Area and tables ("Field Density Test Summary Log") summarizing the in-field density test results for each lift at these testing locations are provided in **Appendix M.** The coordinates of the testing locations and elevations of each associated lift are also provided on the Field Density Test Summary Logs. Test locations where test results showed the in-place density of the backfill material of that lift was less than 95% of the maximum dry density are also shown highlighted on the Field Density Test Summary Logs. Such lifts were re-compacted and retested until the in-field density results met the criterion.

10.0 CONTAINMENT SYSTEM CONSTRUCTION

In accordance with the SA-6 North Consent Decree and the SA-6 North 100% Design Report, the Chromium Remedy for the Open Space Area includes a containment system consisting of a hydraulic barrier, a RCRA-equivalent cap (Cap), and a contingent groundwater extraction system to provide hydraulic control of shallow groundwater. The objectives of the containment system are to physically separate chromium-impacted soils within the Open Space Area from the adjacent Residential Area and SA-7; to prevent the horizontal migration of contaminated groundwater out of the Open Space Area; and to limit infiltration of precipitation into the chromium-impacted soil within the Open Space Area.

Major containment system construction activities included:

- Installation of Hydraulic Barrier along Open Space Area and Trash Pit;
- Vibration Monitoring;
- Consolidation of Chromium-Impacted Soil Excavated from the Residential Area and the Additional Excavation Areas;
- Construction of the Contingent Groundwater Extraction System Construction;
- Surcharging of soils in the Open Space Cap Area;
- Stratum D Repair in Open Space Area and Trash Pit; and
- Construction of the RCRA-equivalent Cap in the Open Space Area.

10.1 HYDRAULIC BARRIER INSTALLATION ALONG OPEN SPACE AREA

The hydraulic barrier at SA-6 North consisting of steel sheetpile with sealed joints was installed around the eastern, northern, and western perimeters of the Open Space Area in accordance with the SA-6 North 100% Design, Technical Specification Section 02170, and DCs 2013-8-14 (HB Wall), 2014-8-13, 2014-9-2, and 2015-03-30. The hydraulic barrier is connected to the existing SA-7 SCB on the southern boundary of SA-6 North and keyed into the Meadow Mat (Stratum D) or Stratum O to establish the integrity of the seal between the vertical wall and the underlying Stratum D confining layer. The western hydraulic barrier was installed

approximately 100 feet inboard of the bulkhead at the chromium delineation boundary.

The sheetpile for the hydraulic barrier was installed using an ABI Mobilram with a high frequency vibratory driver. Prior to driving the sheets, pre-trenching was conducted to approximately 4 to 5 feet bgs along the hydraulic barrier alignment to remove debris that could inhibit sheetpile driving. Material removed during the pre-trenching was consolidated in the Open Space Area.

An abandoned 54-inch RCP ran from the southwest corner of the former JCMUA sedimentation basin to an outfall structure at the Hackensack River. During the pre-trench excavation, the sections of pipe that crossed the western section of hydraulic barrier alignment were removed. A flowable fill concrete plug was installed in the down gradient side between the hydraulic barrier alignment and outfall structure. The 54-inch pipe within the Open Space Area was crushed in place and then backfilled with granular fill. This fill was used as a "French drain" for groundwater control west of the sedimentation basin pending installation of the contingent groundwater system collection trench west of the sedimentation basin.

The sheet piling was 1907 Hoesch Larssen Z Series sheetpile. The length of sheets varied along the alignment subject to the final design top elevation, the depth to Stratum D, and temporary support stability requirements. Sheets were fabricated and supplied to the site at specific lengths based upon the design profiles. The majority of sheetpile was delivered to the site in welded pairs. Single sheets and fabricated special sheets were used at specific locations. Sheet welding and epoxy coating was conducted by Durabond at their Steelton, Pennsylvania facility. Specifications 02170.1.01. and 02180.6.1.01.A (see **Table 9)** required application of an epoxy coating from the top of the sheet to a length equivalent of 2 feet into the Stratum D. Where longer sheets were used for structural purposes (i.e. to facilitate temporary excavation) the section of sheet below the 2 feet key did not require coating. The intent of the epoxy coating is to extend the life of the hydraulic barrier. Independent QA was performed at the Durabond facility to verify conformance with the specified requirements.

To meet the permeability objectives of the hydraulic barrier, the joints between the welded pairs were sealed with either a hydrophilic sealant or a cement bentonite grout between Station 0+00 and Station 5+00 (east wall and eastern portion of north

wall) and with hydrophilic sealant between Station 5+00 and Station 23+38. The type of sealant was based on the pH in the groundwater along the alignment. Record drawings of the sheetpile plan and profile are included in **Appendix N**.

As indicated in Section 2.9, supplemental pH testing of groundwater was conducted as part of the site preparation activities along limited sections of the hydraulic barrier alignment that were accessible outside of existing buildings and associated structures as shown on **Figure 6**. In accordance with the SA-6 North 100% Design Report either a bentonite grout mix or hydrophilic seal was utilized on the sheetpile depending on the pH of the groundwater.

To achieve a continuous barrier around the Open Space Area, the hydraulic barrier was connected to the northeast and northwest corners of the SA-7 SCB wall using a grouted connection. These connections were made by drilling a series of 6-inch diameter boreholes at the connection point using a track mounted drill rig fitted with a continuous flight hollow stem auger. The auger was advanced into the Stratum D and a Cement Bentonite grout was pumped from the bottom of the auger to fill the void. The closure section of the sheetpile barrier was then installed prior to the grout setting.

The toe of the wall was designed to key a minimum of 2 feet into the Stratum D. Embedment of the hydraulic barrier into the underlying Stratum D established the integrity of the seal between the vertical wall and the horizontal Stratum D confining layer. The Geotechnical Investigation Report from Appendix C of the SA-6 North 100% Design Report was used to develop an elevation profile of the top of Stratum D along the barrier wall. As noted above the sheets were fabricated and installed based on that design profile. Knowing the elevation of the top of Stratum D from the profile and the length of the sheet at any given location along the barrier wall alignment, the sheets were driven to the prescribed depth bgs (or elevation) so that the bottom of the sheets were keyed at least 2 feet into Stratum D. In EA-2/3 and EA-5 in the SA-6 North Residential Area, the excavation was carried down to Stratum D. These areas provided corroboration of the accuracy of the design Stratum D profile, and therefore confirmed that the sheet length/key and coating length were correct.

For the majority of SA-6 North, the cap to barrier wall profile is above the water table. In some utility corridors, the connection is submerged. Langan Engineering,

Inc. (Langan) of Lawrenceville, New Jersey was retained by Amec Foster Wheeler to provide third party QA on the construction of the cap components. In submerged areas, GCL was placed under the geomembrane in lieu of the gas vent layer and a sand bentonite plug was installed against the top of the sheetpile to provide for a low permeability connection. The installation of the connection detail for these areas is discussed in the Geosynthetics Quality Assurance Report prepared by Langan in **Appendix Q**.

10.2 HYDRAULIC BARRIER CONSTRUCTION ALONG TRASH PIT

The alignment of the hydraulic barrier is critically coordinated with the established northern boundary of the Open Space Area and the boundaries of the Redevelopment Area and the alignment of the future Stegman Boulevard. Thus, the alignment of the hydraulic barrier could not be altered at the Trash Pit without significant consequences to the future redevelopment configuration. Since the Trash Pit intersected the alignment of the hydraulic barrier and the hydraulic barrier alignment could not be altered in this area, the hydraulic barrier had to cut through the Trash Pit at the location prescribed in the 100% Design.

Prior to installation of the hydraulic barrier wall in the Trash Pit area, the Trash Pit was dewatered by pumping of all free liquids. The remaining debris was removed from the Trash Pit with the excavator and stockpiled within the footprint of the former JCIA basement where additional liquids could gravity drain back into the Trash Pit and continue to be pumped out. The remaining solid wastes were trucked offsite for disposal. The concrete walls of the trash pit were scraped clean to allow for the sealing of the hydraulic barrier to the walls. The top of the trash pit walls was demolished to 2 feet below the geomembrane elevation.

The bottom of the Trash Pit was pressure washed and a cofferdam consisting of "super sacks" filled with fine granular clean imported soil was installed along the north and south sides of the proposed hydraulic barrier location. A low permeability plug of AquaBlok® was installed within the cofferdam walls. The toe of the steel sheetpiles was placed into the low permeability plug and the tops were tack welded to two steel guide beams for interim support as shown on the Entact figure entitled "JCIA Trash Pit As Built Vinyl Sheetpile and Meadow Mat Repair" in **Appendix C.** The interlocks between the sheets were sealed with Swellseal WA hydrophilic sealant. The hydraulic barrier was sealed to the concrete wall on the interior of the Trash Pit with cement bentonite grout columns.

The connections at the exterior walls of the Trash Pit were sealed with a specially fabricated sheetpile inserted into overlapping cement bentonite grouted columns prior to the grout setting. Prior to backfilling the Trash Pit, the concrete walls south of the barrier wall (under the cap and inside the containment) were penetrated below the groundwater table to reduce the potential for perched groundwater in the pit under the cap. The Trash Pit was backfilled in 1-foot lifts and tamped with the bucket until the elevation of the backfill reached a point where heavy compaction equipment could be utilized. Imported clean fill was placed 2 feet directly above the AquaBlok®.

Stratum D repair near the Trash Pit was conducted as described in Section 10.8.

10.3 VIBRATION AND ACOUSTICAL MONITORING

The SA-6 North 100% Design Report mandated vibration monitoring when sheeting was being driven proximate to critical subsurface infrastructure or other features that could be damaged due to vibration. Such areas at SA-6 North are shown on **Figure 12** for acoustical monitoring or in **Appendix O** for vibration monitoring and included:

- Acoustical monitoring during hydraulic barrier wall installation adjacent to the 72-inch Force Main (**Figure 12**);
- Vibration monitoring during temporary excavation support installation near the utilities along Route 440 and EA-1, and EA-2/EA-3 (**Appendix O**);
- Vibration monitoring during barrier wall installation for the containment along Route 440 (**Appendix O**); and
- Vibration monitoring during hydraulic barrier wall installation adjacent to the 72-inch Force Main (**Appendix O**).

Honeywell's geotechnical engineering consultant, MRCE, developed the vibration limits for these sensitive areas. Seismographs were placed in proximity to the ABI Mobilram and the utility of concern. The seismographs were progressively relocated in unison with the movement of the progress of the driving. The accelerations were measured "real time." The accelerations were well below the trigger levels in the vicinity of the 72-inch Force Main.

The ABI Mobilram operator had the ability to adjust the vibration frequency and total applied energy during driving. If the trigger levels were approached, the operator adjusted the driving parameters to keep the seismograph reading below the vibration limits.

There were a number of locations along the eastern Barrier Wall adjacent to Route 440 where vibrations exceeded the trigger levels for short periods of time. In these cases, driving was immediately stopped and options evaluated. These sheets were only 15 feet in length and hence driving times typically short. The 24-inch ductile iron gas main had also been replaced and relocated to the east as part of the SA-7 remediation. Therefore, while the same trigger level was followed when driving, the risk associated with higher vibration levels was less in this area due to the gas main relocation. The exceedances were along the southern section of the Route 440 Barrier Wall closer to SA-7. With two exceptions, the sheets were successfully driven by either frequency modification or adding water to the pretrench. In one location one pair of sheets reached practical refusal slightly above the design depth. Review of the geologic profile indicated that an adequate 2 feet key had been achieved and the sheets were left high. This change was documented in DC 2015-07-31. At a second location, practical refusal was encountered at a shallower depth. At this location, further investigation identified a piece of concrete slab below the pre-trench level. The concrete was removed and the barrier wall installation completed without any further exceedances. Vibration monitoring results are provided in **Appendix O**.

10.4 SOILS CONSOLIDATED IN OPEN SPACE AREA

The Chromium Remedy allowed for the consolidation of soil excavated from the SA-6 North Residential Area, the Additional Excavation Areas, and SA-6 South Development AOC with hexavalent chromium concentrations of 20 to 240 mg/kg (B Material) as shown on **Table 6C** to be placed in the SA-6 North Open Space Area below the cap. The total volume of soils excavated from the SA-6 South Development AOC placed in the SA-6 North Open Space Area was approximately 35,000 CYs.

Soils placed within the SA-6 North Open Space Area were compacted as required by Specification 01600 (see **Table 9**) to create a stable subgrade for the capping system. In accordance with Paragraph 56(d) of the SA-6 North Consent Decree, debris, or deleterious materials that could interfere with compaction was not placed under the cap. Compaction was typically performed using a vibratory steel drum roller. The

subgrade was proof rolled with the roller operating in static mode loaded to provide a 1 ton per square foot (2,000 pounds per square foot), or equivalent, loading to the subgrade. The roller traversed over the subgrade materials until no further significant rutting or deformation of the subgrade was evident. In smaller areas where the roller would not fit (such as adjacent to the hydraulic barrier wall or adjacent to wells or surcharge monitoring instrumentation), a plate compactor was utilized to provide compaction. Subgrade compaction was subject to engineer's approval. Soils that were too wet to compact were either dried or treated with Calciment® to reduce moisture content and increase strength to meet the specified criteria. The grading of the consolidated soils met the grading requirements in the SA-6 North 100% Design Report.

10.5 CONTINGENT GROUNDWATER EXTRACTION SYSTEM CONSTRUCTION

The SA-6 North 100% Design Report included a conceptual groundwater extraction design based on vertically-installed wells. The SA-6 North 100% Design Report also indicated that the conceptual design would be subject to further evaluation and possible change. Based on that further evaluation it was determined that a trench system would be more effective in the variable fill above the Stratum D. DC 2014-3-25 documents the change to the trench design. The collection trench was installed prior to surcharging. The contingent groundwater extraction trench is shown on **Figure 10**. A Record Drawing is also contained in **Appendix C**. The system will only operate as necessary to comply with the groundwater capture and gradient requirements noted in Paragraph 58 of the SA-6 North Consent Decree.

Specification 02140.3.01 required that the water table be controlled during construction of the cap to maintain an inward gradient from SA-7 to the south and the Residential Area to the north (see **Table 9**). Pumping from the collection trench and other temporary trenches within the Open Space Area was initiated prior to cap placement to control groundwater levels and terminated in October 2016 after all Open Space Area cap work was completed. Evaluation of preliminary groundwater level monitoring results was discussed in Section 6.4.

The North contingent groundwater system consists of two trenches with 8-inch perforated HDPE conveyance pipe. One trench is east of the Sedimentation Basin. It consists of two "legs." One leg runs approximately 150 feet west from Pump Station #2. The second leg runs approximately 500 feet to the east of Pump Station #2.

The second trench in the western portion of the site also has two "legs." One leg runs from the Pump Station #1 west 650 feet towards the Hackensack River end of the Open Space Area. The second leg extends south from the Pump Station and then runs east between the south edge of the sedimentation basin and the SA-7 SCB wall. The second leg is approximately 350 feet long.

The HDPE pipe was placed on top of 6 inches (nominally) of clean crushed stone and was covered with additional stone to depths in accordance with the above-referenced DC. Geotextile fabric was placed across the top of the trench to prevent vertical migration of fines into the trench. As shown on the Record Drawing in **Appendix C**, the perforated piping is connected to an extraction manhole located in each trench. Access structures are installed at the end of each trench to provide access for maintenance, if required. A double walled conveyance force main runs from each extraction manhole to the GWTP. The force main discharge point was changed from the JCMUA grit chamber to the GWTP, as indicated in DC 2016-12-20. Electrical and instrumentation conduits were also installed between each pump station and the GWTP as shown on the drawing Contingent Groundwater Extraction System, North Cap in **Appendix C**.

The groundwater model predicts that the inward gradient can be maintained by passive means (i.e. without active pumping). In the event it is necessary to implement active pumping, pumps along with the requisite electrical and instrumentation wiring and controls have been installed in the two extraction manholes in the two separate extraction trenches.

10.6 SURCHARGE PROGRAM

The existing surface grade of the Open Space Area generally varied between elevation 12 and elevation 16 based on the NGVD29 datum. The maximum "redevelopment grade" at the Open Space Area is elevation 23 based on the NGVD29 datum. Engineering calculations indicated that up to approximately 10 inches of settlement could result due to the increased load resulting from the increase in grade. That settlement was estimated to be primarily through consolidation of the underlying compressible Stratum O and Stratum D Soils. A decision was made based on this potential settlement, to surcharge the site to remove 100% of the primary consolidation attributable to the Development Area grade loading, prior to placement of the cap.

The surcharge program was designed to be completed in a sequenced manner starting from 1N and moving east to 4N (see **Illustration 5**).

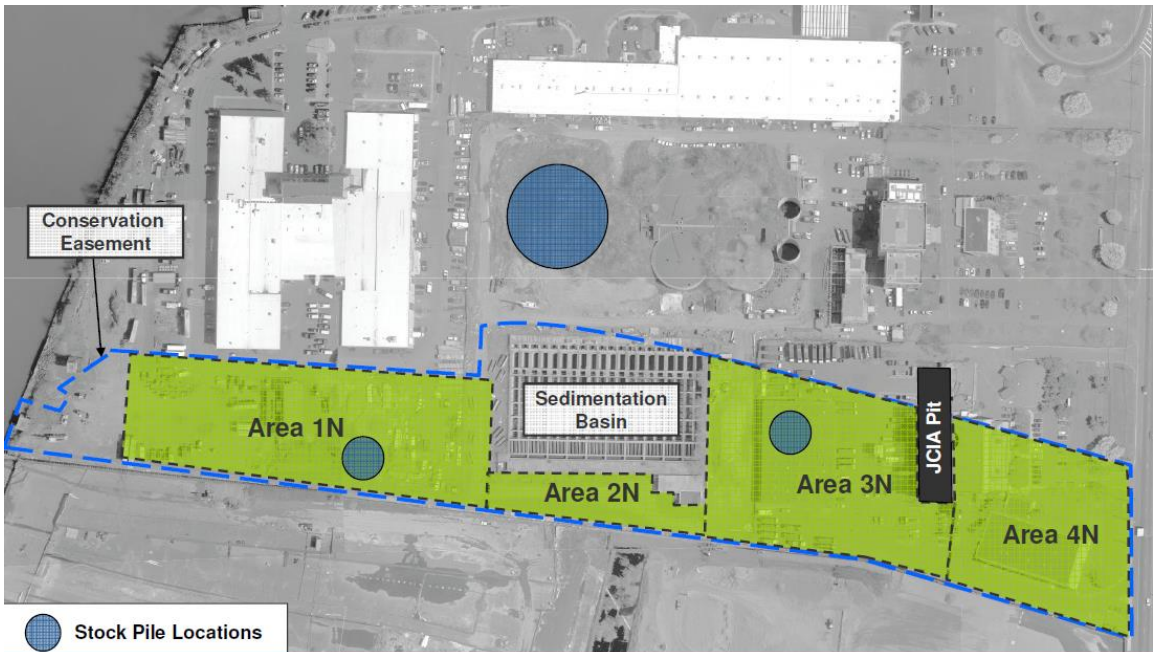


Illustration 5: Surcharge Loading Plan

The surcharge loads pile geometry was designed to achieve settlement as a result of primary consolidation in a period of approximately 6 months. Surcharge pile geometry was included in the SA-6 North 100% Design Report. The actual time required for the individual areas was determined by the results of the Surcharge Monitoring Plan. The Surcharge Monitoring Plan was provided in Appendix N of the SA-6 North 100% Design Report.

A Surcharge Monitoring report summarizing the results of the surcharge program for SA-6 North and SA-6 South was generated on a monthly basis during active surcharging. The Surcharge Monitoring Report included in **Appendix P** indicates that 100% of primary consolidation was achieved at the monitoring locations.

Upon completion of the analysis and verification by Amec Foster Wheeler that surcharge objectives were met, data packages were sent to MRCE for third party review. The dates of surcharging and third party agreement of completion are:

Surcharge Area	Initiation Date	Completion Date	MRCE Agreement
1N	April 2014	July 2014	August 8, 2014
2N	September 2014	November 2014	November 21, 2014
3N	November 2015	January 2016	March 29, 2016
4N	January 2016	January 2016	March 29, 2016

Following completion of the Surcharge Program, excess surcharge material was removed and the subgrade prepared for deployment of the cap geosynthetics.

10.7 STRATUM D REPAIR

During the development of the 100% Design, a geotechnical investigation was conducted to determine the elevation and thickness of the meadow mat (Stratum D) that underlies SA-6 North. A Geotechnical Investigation Report (Geotechnical Report) was included as Appendix C of the SA-6 North Chromium Remedy 100% Design Report and provided the details of the characteristics and incidence of Stratum D. In summary, Stratum D is a native marsh deposit consisting of organic silt/clay and peat with a range of measured permeability on the order of 1×10^{-7} to 1×10^{-8} cm/sec (as reported in the Geotechnical Report). Due to its low permeability, Stratum D plays an important role in preventing vertical migration of contaminants from the fill material overlying Stratum D in the Residential Area to the native material aquifer below and establishing hydrogeologic flow characteristics of the shallow groundwater perched atop the Stratum D. Therefore, the repair of Stratum D at any breaches or discontinuities in the Stratum D in the Residential Area, as described below and in Section 10.8, was necessary to maintain integrity of the Stratum D as a confining layer in the Residential Area.

The SA-6 North Geotechnical Report documented breaches of the Stratum D. As a result, the SA-6 North 100% Design required repair of the Stratum D in accordance with Specification Section 02180.8 Special Instructions – Repair of Stratum D on SA-6 North. During the course of chromium-impacted soil excavation activities at SA-6 North, repairs to Stratum D were necessary in the following situations:

- On several occasions pilings that penetrated the Stratum D were removed inadvertently in the excavation process, and

- In several locations, vertical cracks were observed in the Stratum D.

In each Stratum D repair location, GCL was placed over, and extended at least 3 feet beyond the repair area to provide continuity to the Stratum D layer. The locations of the repairs were noted on the Entact figure titled SA6 North Cap Panel Layout 60 mil Textured LLDPE Geomembrane in **Appendix C**.

Prior to installation of the GCL outside of the Trash Pit area, overburden soils were excavated and vinyl sheeting was driven into the existing Stratum D. The vinyl sheeting interlock abuts the hydraulic barrier wall and is connected to the hydraulic barrier wall by Swell Seal and 1-inch grouted column driven to a depth of 11 feet.

10.8 STRATUM D REPAIR JCIA TRASH PIT AREA

As indicated in Section 10.1.8 of the SA-6 North 100% Design Report it had been determined that the Stratum D layer was absent in a 25-30 feet halo around the JCIA Trash Pit. It is believed that portions of the Stratum D were removed during the construction of the Trash Pit. The SA-6 North 100% Design Report required development of means and methods for restoring the layer following Contractor selection, and inclusion of those details in the Issued for Construction design (IFC). As a result of development of contractor means and methods, a modified repair scope was developed and shown on Drawing SN-302 of the IFC drawings. The modified IFC design was based on not conducting any repairs on the south side of the barrier wall (i.e. within the Open Space Area). The IFC design called for repair of the Stratum D North of the barrier wall. The repair consisted of three major steps:

- Excavation of the area to elevation 4 based on the NGVD29 datum.
- Installation of sealed vinyl sheetpile from elevation 4 based on the NGVD29 datum and keyed into the Stratum D. The alignment was selected based on boring data and the interpreted limits of Stratum D.
- Placement of a GCL cap at elevation 4 based on the NGVD29 datum. The GCL extended from the concrete Trash Pit structure to the vinyl sheetpile. The GCL was connected to the sheetpile by means of a sand bentonite plug.

During installation of the vinyl sheetpile, a significant number of timber piles were encountered on the proposed alignment. To avoid removal of these piles the

sheetpile was realigned to avoid the piles. DC 2015-10-22, was issued to document the location of the piles and the final alignment. These conditions are also documented in the Entact figure titled JCIA Trash Pit As Built Vinyl Sheetpile and Meadow Mat Repair (**Appendix C**).

10.9 CAP CONSTRUCTION

As stated in Section 10.1 above, Langan was retained by Amec Foster Wheeler to provide third party QA on the construction of the cap components. This Section provides a summary of the cap construction and third party QA testing performed. A full detailed explanation, including step-by-step construction sequencing and procedures, photographs of cap elements, and a full description of QA testing procedures and results is contained in the Langan Cap Geosynthetic Quality Assurance (QA) Report for Study Area 6 North ("Langan Report"), (**Appendix Q**).

The Chromium Remedy included a RCRA-equivalent geosynthetic cap system including; a methane GVL to address the potential release of naturally occurring methane, 60 mil Linear Low Density Polyethylene (LLDPE) geomembrane, GDL and cover soils to protect the geosynthetic components and support plant growth. Cap construction proceeded from west to east at SA-6 North, starting on June 22, 2016. The construction of the geosynthetic cap system was completed on August 19, 2016.

The licensed surveyor (Maser) provided survey of the construction control grid and verification that the subgrade was graded in accordance with the SA-6 North 100% Design. Amec Foster Wheeler conducted QA review of the geosynthetics manufacturer submittals, prepared the receiving records for geosynthetics delivered to the site, and provided QA approval of spark testing for all cap penetrations.

Langan provided third party QA on the construction of the geosynthetic cap components. Langan provided a final report of their QA inspection and evaluation of the cap construction which is contained in **Appendix Q**.

The following process was utilized for construction of the cap within the Open Space Area:

- Verification survey by Maser of the cap subgrade;

- Certification by the installation contractor (ESI) and Langan that the subgrade surface was suitable for geosynthetic deployment;
- Install cap geosynthetics (gas venting layer, geomembrane liner, geocomposite drainage layer) in the Open Space Area;
- QA/QC of placed geosynthetics;
- Spark testing of cap penetrations. Spark testing was conducted in accordance with DC 2015-12-14;
- Install Warning Layer;
- Placement of protective cover soil;
- Placement of root barrier and additional warning tape installed above the root barrier in accordance with DC 2015-10-02;
- Placement of imported clean soil of the type required to the design thicknesses and grades; and
- Seeding and or gravel placement to serve as final cover pending redevelopment.

Figures 13 and 14 graphically portray the chromium remedy components including the cap details.

The final design of the Bayfront Redevelopment includes roadways that traverse the Open Space Area in a North-South alignment. The geosynthetic cap system was designed to accommodate future utilities in the roadways traversing the SA-6 North Open Space Area. The locations and design of the utility corridors were coordinated with the future Bayfront Redevelopment design and were in accordance with the SA-6 North Consent Decree. The locations of utility corridors are shown on **Figure 15**. The liner grades provide a minimum of 3 feet between the Bayfront Redevelopment road surface and the liner. The 3-feet criterion was established by Amec Foster Wheeler based on a conservative approach utilizing Bayfront Redevelopment planned traffic flows and a typical Municipal pavement design that was consistent with the road designation/traffic loadings. In areas designated as future roadways either imported NJ I-5 or NJ I-8 was placed as "Structural Fill under Roadways" above the cap components per Specification 02315.2.05 (see **Table 9)**.

Following surcharge, approximately 2 feet of less than 20 mg/kg hexavalent chromium overburden soils were stripped from Area 1N in accordance with SA-6 North Consent Decree paragraph 56(d) and DC 2015-9-02, to create additional capacity for the consolidation of 20-240 mg/kg hexavalent chromium-impacted soils within the SA-6 North Open Space Area. The excavated overburden soils were reused as backfill in the SA-6 North Additional Excavation Areas, as documented in Declaration #3. Following removal of the Area 1N overburden soils, the cap area was graded and compacted in accordance with the lines, grades and compaction requirements indicated in the Final SA-6 North 100% Design and Design Change DC 2016-7-14. Subgrade preparation was performed between April 20, 2016 and August 13, 2016. To document compliance with the grading requirements, a Construction Control Grid was established consistent with Specification 01460.1.04 (see **Table 9)**. The Construction Control Grid is included in **Appendix C**. Also included are summary tables prepared by Maser Consulting PA (NJ licensed surveyor) comparing the design grades and actual grades at the Construction Control Grid nodes are included in Appendix C confirming that all nodes were within tolerance. A topographic survey of the SA-6 North subgrade to show as-built geomembrane grading elevations within the SA-6 North Cap Area was prepared by Maser (C-123 and 124, **Appendix C**).

Installation of the cap geosynthetics followed Maser certification that the subgrade surface conformed to the specified Construction Control Grid. Amec Foster Wheeler provided quality assurance ("QA") approval of Maser's documented subgrade elevations prior to issuing to Langan for approval for geosynthetics deployment. In addition, as part of the subgrade approvals, Amec Foster Wheeler provided QA approval of the sand bentonite Geosynthetic Clay Liner ("GCL") to barrier wall connections (signed GCL to barrier wall logs are included in Appendix F of the Langan Report. Amec Foster Wheeler also provided QA approval of spark testing for all cap penetrations. Signed spark test logs are included as Appendix O in the Langan Report. Spark testing in the SA-6 North cap area was conducted in accordance with DC 2015-12-14. The Langan Report is included as **Appendix Q**.

The cap geosynthetics were placed between June 22, 2016 and August 19, 2016. The cap geosynthetics included components that were designed to meet the technical requirements of Section 56(a) of the SA-6 North Consent Decree. The gap geosynthetics scope included the following key tasks:

- Subgrade inspection for acceptability prior to geosynthetics deployment,
- Gas Vent/Geotextile and GCL installation over the subgrade and under the geomembrane,
- Geomembrane Installation-60 mil LLDPE,
- Spark testing of cap penetrations,
- Geocomposite drainage/warning layer installation, and
- Warning tape installation.

The top component of the GDL is comprised of a high visibility orange non-woven geotextile liner that met the visibility requirements of the SA-6 North Consent Decree. Yellow polyethylene, direct burial tape, with black lettered warning language, was installed every 5 feet on center on top of the GDL and also on top of the root barrier perpendicular to the lower elevation installed tape.

Honeywell contracted with Langan to provide Independent QA for the SA-6 cap geosynthetics installation. As the Independent QA Engineer, Langan performed the QA activities specified in the Langan Report, including monitoring, field oversight, and documentation. The Langan Report documents the results of the QA Geosynthetic activities conducted during the construction of the cap at SA-6 North by both Langan and Amec Foster Wheeler field personnel. Refer to the Construction Quality Assurance (CQA) Plan prepared by Langan in June 2015 (attached as Appendix B to the Langan Report) for a description of the scope of work conducted by Langan, as well as the roles and responsibilities of the owner, EOR, earthwork contractor, and liner contractor. DCBs and RFIs which were generated subsequent to the 100% Design, and relevant to the QA scope of work were reviewed and approved by the EOR, and are further summarized in this CCR.

The Langan Report specifically included the following documentation of the cap construction activities:

- Relevant Record Drawings;
- Summary of the various phases of the work observed as part of the QA program;

- Daily QA Reports indicating the work activities completed each day and other pertinent information;
- Daily cap construction forms submitted by the Geosynthetic Installer which included:
    - Repair Reports, Trial Weld Logs, Panel Placement Forms, Seam Control Forms, Destructive & Non-Destructive Test Forms, and Subgrade Approval Forms;
    - Field testing results for fusion welds and extrusion welds;
    - Laboratory testing results for the destructive samples collected (i.e., fusion & extrusion welds); and
    - Photographs depicting daily work activities and the various phases of the capping activities.

The Langan Report certifies that placement of the SA-6 North cap geosynthetics was completed in compliance with the construction design documents (**Appendix Q**).

Acceptance of the geosynthetic materials used for the SA-6 North Cap Construction was completed by Amec Foster Wheeler based on the results of the manufacturer's production quality testing (AGRU America, Inc. and their subcontracted companies). The Amec Foster Wheeler Engineer of Record provided a full-time site Geosynthetics Inspector to inspect materials deployment, installation and documentation for compliance with the Final SA-6 North 100% Design of the capping system. The Geosynthetics Inspector observed the placement of the GDL cover soil to verify that the soil was placed in accordance with the Earthwork and GDL Specifications (02315 and 02374, respectively) and that the GDL was not damaged or unnecessarily stressed. The GDL cover soil is included in Declaration No. 5 which is included as a draft in this CCR (see **Appendix T**). The Geosynthetics Inspector also observed the fabrication, spark testing, installation and extrusion welding and vacuum testing of all boots.

QC for geosynthetics installation was provided by Entact and their specialty installer ESI. Entact also contracted with Geotechnics, Inc. to conduct the specified offsite laboratory testing required as part of the capping project, such as destructive seam testing. All ESI field QC and Geotechnics laboratory tests are incorporated into the Langan Report and are the subject of the Langan QA Certification. Langan

offsite QA laboratory testing was completed by TRI Environmental, Inc. The Langan Report and the Langan engineer certification are included in **Appendix Q**. As-built drawings of the cap geosynthetics (i.e., 60 mil Textured LLDPE Geomembrane, Gas vent Layer/Geosynthetic Clay Liner (GVL/GCL) Layout, Geocomposite Drainage Layer (GDL) Layout) are included as **Appendix C**. In accordance with the SA-6 North Consent Decree, a minimum thickness of 1 foot of clean soil (in areas to be paved) and 2 feet of clean soils (in other unpaved areas) were placed above the geomembrane liner. More clean soils may have actually been placed depending on the final surface grade features. The SA-6 North Consent Decree required an average thickness of clean cover soil above the geomembrane of 3 feet. The actual average thickness is 4.4 feet.

A woven geotextile root barrier was installed within the Open Space Area. At least 6 inches of Horizon C soil was placed immediately above the root barrier and compacted to 90% of the maximum dry density as measured by ASTM D-698 (Standard Proctor). Additional Horizon C, and 6 inches of topsoil (Horizon A) were placed to complete the cover soil build up. Analytical sample results of the Horizon soils are also included in the Backfill Sample Comparison to NJDEP Standards table in **Appendix L**. The approximate volumes of cap cover soils imported and placed above the cap components were as follows:

Material Layer	Vendor/Source	Approximate Volume Imported (CYs)
GDL Cover Soil	Celgene	17,700
Structural Fill under Roadways	Tilcon Mount Hope	16,200
Horizon A - Topsoil	Nature's Choice	800
Horizon A - Topsoil	Excavating Materials & Equipment, Inc. (EME)	9,000
Horizon C	Nature's Choice	15,000

The average and minimum thickness of the cap cover soils meet the requirements of Section 56 (c) of the SA-6 North Consent Decree. The root barrier was installed over the entire cap area. Structural fill under roadways was placed in roadways above the protective cover soil. The placement of the root barrier, warning tape and Structural fill under Roadways meets the provisions of the OSDS, Appendix L of the SA-6 North 100% Design Report. As-built surveys of the top of the root barrier and structural fill as-built drawings are included in **Appendix C**.

Throughout the work, the amount of cover soil varied. As work advanced in some places the LLDPE required repairs. All repairs were completed by the end of August 2016. All repairs are detailed in the Langan Report (**Appendix Q)**, including Section 2.4.4.4.

The cap was designed with consideration of grading, drainage, and groundwater management provisions of the adjacent SA-7 site.

The methane vents extend from the geocomposite drainage, gas collection layer below the geomembrane liner through the cover soils to the atmosphere. See the Gas Vent Detail figure in **Appendix C** for details of construction.

11.0 PERIMETER AIR MONITORING

As part of the Health and Safety monitoring conducted during remediation, air monitoring around the perimeter of SA-6 North was implemented by Emilcott Associates, Inc., on behalf of Honeywell, to assess in an ongoing manner that COCs did not result in potential exposures to the surrounding public. Honeywell maintains a website at the following URL: www.jerseycitychromiumcleanup.com, which provided daily updates with perimeter air data and other information during the implementation of the SA-6 Chromium Remedy. Any changes to the website or url will be addressed as part of Long Term Monitoring activities pursuant to the LTMP. **Tables 1A and 1B** contain the baseline and project data.

The primary COC, potentially found in dust from activities occurring at Sa-6 North, was hexavalent chromium. Action levels determined for the SA-6 North project included 221.0 micrograms per cubic meter (µg/m^3) for air-borne dust. The air monitoring level was based on the potential for encountering lead dust in discrete areas of SA-6 North. Preventative measures taken to control the generation of dust were conducted per the PAMP and HASPs. In order to assess the potential presence of hexavalent chromium in dust, the perimeter air monitoring stations were located throughout the multi-phase excavation activities using a grid system as shown on **Figure 4**. The points were determined by the PAMP and the Honeywell onsite representative based on the location of soil disturbance activities, prevailing wind direction, and field conditions.

PAMP data is included on **Tables 1A and 1B**. Baseline PAMP data was discussed and presented in Section 2.3. In the course of the project, there were no recorded employee exposures above the OSHA Permissible Exposure Limit. The highest total particulate detection at SA-6 North was on July 22, 2016 at 180 µg/m^3 (below operative action level of 221 µg/m^3) where the corresponding hexavalent chromium sample was not detected. The highest hexavalent chromium detection was on August 8, 2016 at 36 nanograms per cubic meter where the corresponding particulate detection was 79 µg/m^3.

12.0 IN-SITU TREATMENT

Although not specifically proposed in the NJDEP-approved RAWP, the RAWP indicated that in-situ treatment of chromium-impacted soils would be further evaluated as an option to address chromium-impacted soil in the Residential Area and the Additional Excavation Areas, where excavation was technically impracticable. This included areas adjacent to active pipelines and utilities. Three such areas, called treatment areas (TA), were subsequently identified upon further evaluation of the data and discussions with the Jersey City Entities about the need to maintain critical infrastructure for their ongoing operations at SA-6 North. These areas were identified as Treatment Areas (TA) TA-7, TA-8, and TA-10-1 and are shown on **Figure 11B**. TA-7 is located immediately adjacent to two in-service above ground storage tanks on the JCMUA property and near the active 72-inch force main. TA-8 is located in the area of JCDPW and within 7 feet of a 96-inch combined sewer overflow line. TA-10-1 is located north of the northern curbline of the future Stegman Boulevard, and is adjacent to the 72-inch force main. The depth of the chromium-impacted soil and the nearby infrastructure made potential damage to the critical infrastructure during excavation a concern. Additionally, each of these areas is suitable for in-situ chemical treatment because they are geographically isolated locations, relatively small size, and exhibit lower hexavalent chromium concentrations (generally <100 mg/kg).

12.1 TA-7 AND TA-8

Honeywell implemented an initial injection program in the TA-7 and TA-8 areas in June 2013. Amec Foster Wheeler retained In-Situ Oxidative Technologies, Inc. (Isotec) of Lawrenceville, New Jersey to implement the in-situ injection of CAPS on behalf of Honeywell. The TA-7 and TA-8 in-situ injection program was implemented in accordance with the following documents:

- NJDEP Permit-by-Rule, Discharge to Groundwater Authorization, dated April 30, 2012;
- Amec's Revised Work Plan for In-Situ Treatment of Chromium Impacted Soil, dated February 2013 (Amec Revised WP); and
- Isotec's Chromium Treatment Program Operations Plan, dated April 8, 2013 (Isotec WP).

A total of 324 gallons of 29% stock CAPS was injected in TA-7 and a total of 168 gallons of 29% stock CAPS was injected in TA-8. TA-7 was approximately 560 square feet in area and 12 temporary injection points (IPs) were used to deliver the CAPs to the targeted shallow subsurface zone (2 to 4 ft bgs) and 9 temporary IPs were used to deliver the CAPs to the targeted deeper subsurface zone (16 to 18 ft bgs). TA-8 was approximately 380 square feet in area and 6 temporary IPs were used to deliver the CAPs to both subsurface zones at TA-8 (10 to 12 and 18 to 20 ft bgs).

In June 2014, Honeywell authorized Amec to collect interim performance assessment soil samples in TA-7 and TA-8. These samples were collected in accordance with the Amec Revised WP. The TA-7 and TA-8 in-situ injection program and interim soil sampling program was summarized in a technical memorandum, dated September 12, 2014, submitted by Honeywell to all Parties (see **Appendix R**). In accordance with the Consent Order requirements Honeywell implemented the 3-year post-treatment performance assessment soil sampling in TA-7 and TA-8 on June 27, 2016. The results are included on **Table 7B**. As indicated in the Amec Revised WP, all soil samples from both TA-7 and TA-8 were analyzed for hexavalent chromium, total chromium, and sulfide. All soil boring logs can be found in **Appendix H.** The TA-7 and TA-8 3-year post-treatment performance assessment soil sample results were summarized in a technical memorandum, dated August 10, 2016, submitted by Honeywell to all Parties (see **Appendix R**).

The 3-year post-treatment final performance assessment soil sampling analytical results indicated that all soil samples collected in TA-8 were <20 mg/kg for hexavalent chromium. The 3-year post-treatment final performance assessment indicated that all soil samples collected in TA-7 were <20 mg/kg for hexavalent chromium, except for one isolated location in TA-7 at a depth of 2 to 3 feet bgs which exhibited a hexavalent chromium concentration of 26.3 mg/kg. Demonstrating <20 mg/kg for hexavalent chromium in post-treatment performance assessment soil sampling conducted 3 years after injections of CAPS substantiates that return of concentrations in soils that are >20 mg/kg for hexavalent chromium, is not occurring in these treated zones.

Thus, the RAO for soils was achieved in the TA-8 area and most of the TA-7 area. Honeywell will establish a temporary deed notice for the TA-7 area until such time that the remaining chromium-impacted soils are excavated.

12.2 TA-10-1

In the *Work Plan for In-Situ Treatment of Chromium-Impacted Soils* (Appendix F of the SA-6 North 100% Design Report), the TA-10 area was originally identified as an area delineated to 20 mg/kg for hexavalent chromium covering an approximately 2,000 square foot area north of the hydraulic barrier. This proposed TA-10 injection area included both sides of the adjacent 72-inch force main which has a concrete outer shell. Due to concerns about impacts to the force main from sulfate, Honeywell reviewed the proposed injection program with NJDEP and PVSC. NJDEP and PVSC requested Honeywell to investigate alternatives to CAPS injection in TA-10. Therefore, Honeywell authorized Amec Foster Wheeler and Mutch Associates to implement a bench scale test to test the efficacy of an organic substrate in treating chromium-impacted soils in TA-10.

The bench scale test concluded that the organic substrate did not offer any significant benefit in reducing hexavalent chromium concentrations in soils. Ultimately, Honeywell and all Parties agreed that CAPS injections would be implemented only in a sub-area (called TA-10-1) located north of the northern curbline for the future Stegman Boulevard to be constructed during implementation of the Bayfront Redevelopment Plan which is approximately 25 feet north of the 72-inch force main (**Figure 11B**). This subarea is approximately 800 square feet. Honeywell and all Parties agreed that the remaining area between the Stegman Boulevard northern curbline and the northern barrier wall where chromium-impacted soils exist >20 mg/kg will be permanently deed noticed and conservation restricted as part of the Open Space Area since the soils in this remaining portion of TA-10 would not be treated, cannot be excavated, and the future Stegman Boulevard footprint will effectively cap this area.

To allay concerns for impact on the 72-inch force main due to CAPS injections in subarea TA-10-1, Honeywell agreed to monitor sulfate conditions in shallow groundwater. Honeywell installed two permanent monitoring wells (087-MW-133 and 087-MW-134) between subarea TA-10-1 and the force main. As a contingency, Honeywell further proposed that if the sulfate concentrations in either one or both of 087-MW-133 and 087-MW-134 reached a threshold level of 150 mg/L, that clean

potable water will be injected into both wells to dilute the sulfate concentrations in the shallow groundwater adjacent to the force main. Both NJDEP and PVSC agreed that these proposed measures address their concerns about the sulfate in shallow groundwater in the vicinity of the force main. As shown in **Table 7D**, these levels were never reached.

Honeywell implemented an initial injection program in subarea TA-10-1 between August and September 2015. Amec Foster Wheeler retained ERFS of Lakewood, New Jersey to implement the in-situ injection of CAPS on behalf of Honeywell. The initial in-situ injection program was implemented in accordance with the following documents:

- NJDEP Permit-by-Rule Discharge to Groundwater Authorization, dated July 14, 2015;
- Amec Foster Wheeler's Updated Work Plan for In-Situ Treatment of Chromium Impacted Soils, dated August 2015 (Updated Work Plan); and
- ERFS' In-Situ Chemical Reduction Implementation Work Plan, dated September 2013.

This initial injection program was summarized in an October 12, 2015 technical memorandum submitted by Honeywell to all Parties (see **Appendix R**). A total of 165 gallons of 29% stock CAPS was injected in TA-10-1 during the initial injection program. TA-10-1 was approximately 800 square feet in area. Five temporary IPs were used to deliver the CAPs to the targeted shallow subsurface zone (12 to 14 ft bgs) in TA-10-1 during the initial injection program.

Following this initial injection program, post-treatment soil samples were collected in March 2016 (approximately six months after the initial injection) to provide an early indication of the efficacy of this treatment. All soil boring logs can be found in **Appendix H.** All soil samples collected from TA-10-1 were analyzed for hexavalent chromium, total chromium, and sulfide as shown on **Table 7C**. As detailed in a May 5, 2016 technical memorandum submitted to all Parties, post in-situ analytical results showed that a portion of treated were now below the 20 milligrams per kilogram (mg/kg) standard for hexavalent chromium in soil (see **Appendix R**). However, 5 out of 20 sample points continued to exceed the 20 mg/kg hexavalent chromium standard. Based on these results, Honeywell proposed a supplemental CAPS injection program to further remediate soils in these areas in the *Additional*

In-Situ Injection of Calcium Polysulfide for Treatment of Hexavalent Chromium Impacted Soils, dated July 11, 2016 (Proposed Implementation Plan) submitted by Honeywell to all Parties (see **Appendix R**). As requested in a May 23, 2016 letter from Plaintiffs, Honeywell agreed to re-inject CAPS within all five original treatment points (IPs), not just the remaining areas of soil exceedances. Modifications were made to the initial approach which included a slower and prolonged injection delivery approach over the course of several weeks through injection wells installed in the area. In contrast, the initial injection program utilized a direct-injection approach where the entire volume of CAPS solution was injected over the course of two days.

On July 28, 2016, Honeywell submitted a new NJDEP Permit-by-Rule Discharge to Groundwater (PBR-DGW) Authorization request to NJDEP to implement the proposed re-injection program based on the July 11, 2016 Proposed Implementation Plan. NJDEP issued the requested PBR-DGW on August 4, 2016.

Amec Foster Wheeler again retained ERFS to implement the additional injections. The Amec Foster Wheeler/ERFS team implemented the prolonged injection delivery program at the Site in five events separated by at least one week between September 7, 2016 and October 26, 2016. The Amec Foster Wheeler/ERFS team implemented the in-situ program in accordance with the following documents:

- Honeywell's July 11, 2016 Proposed Implementation Plan; and
- NJDEP August 4, 2016 PBR-DGW;

In addition, although not revised specifically for the 2016 re-injection program, the 2016 re-injection program followed provisions of documents previously prepared for the initial injection program since the means and methods were essentially similar.

The Proposed Implementation Plan detailed a delivery approach for the re-injection program where CAPS would be injected in specified dosages through 5 IPs in five separate events over a period of time. Thus, the IPs were installed first to facilitate the proposed dosage injections. Following installation of the IPs, the 2016 re-injection program was implemented in five injection events separated by at least a week between September 7, 2016 and October 26, 2016. A total of 825 gallons of

29% stock CAPS was injected in specified dosages during the five-event injection program.

Approximately six weeks after the final injection, Honeywell directed Amec Foster Wheeler to conduct an interim soil sampling program in the TA-10-1 area. The soil sampling program was implemented on December 5, 2016 using the same protocol as the post-treatment soil samples collected in March 2016 following the initial injection program. All soil samples were again analyzed for hexavalent chromium, total chromium, and sulfide. The interim soils data indicates successful reduction of hexavalent chromium concentrations in soils < 20 mg/kg in all but one recalcitrant location which exhibited a hexavalent chromium concentration of 33.3 mg/kg. The 2016 re-injection program, soil sample results, and the specific procedures for a supplemental re-injection program was summarized in a January 12, 2017 technical memorandum submitted by Honeywell to all Parties (see **Appendix R**).

The additional limited re-injection program proposed to address the area of hexavalent chromium exceedance was implemented by injecting a prescribed volume of CAPS into the closest IP to the one recalcitrant location in accordance with the January 12, 2017 correspondence in two events on January 26, 2017 and February 2, 2017. The resampling of the limited area of hexavalent chromium exceedance was conducted on March 13, 2017 in accordance with the January 12, 2017 correspondence. Validated analytical results were submitted to all Parties in the March 2017 monthly progress report included in Appendix T, Part 15, to this CCR. On June 21, 2017, Honeywell submitted to all Parties a proposal to collect final confirmatory soil samples in the TA-10-1 area in Spring 2018.

Honeywell will establish a deed notice for the TA-10-1 area. The TA-10-1 deed notice is identified as Deed Notice #7. Upon confirmation that hexavalent soil concentrations in TA-10-1 have been reduced to <20 mg/ Deed Notice #7 can be withdrawn.

Because of its proximity to the SA-6 North Open Space Area, the portion of TA-10 located south of the northern curbline of the future Stegman Boulevard could be incidentally impacted by Open Space Development. Therefore, this area will be incorporated into the Open Space Area deed notice and conservation restriction and shall be subject to the requirements and restrictions of the Open Space Area, including the Open Space Design Standards and the LTMP.

13.0 GWTP RELOCATION AND CONSTRUCTION

While not necessarily a direct part of the implementation of the Chromium Remedy at SA-6 North, Honeywell constructed a new GWTP on SA-6 North. The GWTP is designed to handle and treat groundwater recovered as part of the SA-7 deep overburden and bedrock groundwater remedy and will handle and treat shallow groundwater from the activation of the contingent groundwater extraction system installed within the Open Space Area. The former GWTP previously located at Site 140 on SA-6 South in the former ABR Trucking warehouse and office building was demolished to implement the SA-6 South Chromium Remedy. The former GWTP was initially built to handle and treat construction water during the SA-7 chromium remedy, but following the completion of the remediation of SA-7, had been treating recovered regional deep and overburden groundwater since December 2008. Once the new GWTP was built and started accepting flows on February 14, 2014, the former GWTP at SA-6 South was decommissioned, dismantled and removed from the Site 140 building.

AMEC Foster Wheeler designed, permitted and managed the construction of the 65 gpm GWTP beginning in March 2013. The GWTP pre-treats hexavalent chromium contaminated groundwater for discharge to the PVSC. The $4.5M GWTP design/build project also involved re-configuration of the existing three well groundwater extraction system, controls, and double wall conveyance system to allow for transition of flow from the old plant to the new plant and as required for GWTP commissioning activities.

The new GWTP incorporates chemical reduction, precipitation, flocculation, clarification and filter press processes which generate significantly less filter cake than the microfiltration system used in the original plant. The GWTP is housed in a 4,800-square foot pre-engineered metal building which also accommodates an office, equipment repair shop and state of the art chemical storage rooms and tanker offloading facilities.

Such facilities incorporate secondary containment, automatic leak and vapor detection systems, and an interface control system with remote monitoring capability, a closed-circuit television monitoring system as well as a card swipe access control and burglar alarm system. An innovative hydraulic pusher system

was also custom designed and installed to allow for more efficient filling of the 30 CY waste filter cake roll-off. Local permitting included development of site plan approval applications and testimony as required for both existing conditions and post redevelopment conditions. Interaction with the Jersey City building department and JCMUA at the preliminary design phase also led to a more streamlined building permitting process and local cooperation during the construction phase.

14.0 SITE RESTORATION

Site restoration activities were performed during the demobilization phase of the project. Site restoration activities included the following:

- Decontamination and demobilization of construction equipment and surplus materials;
- Decontamination, decommissioning and dismantling of the construction wastewater treatment system and piping;
- Relocation or removal of the jersey barriers and chain-link fence to the property line boundary;
- Removal of contractor temporary office trailers and power/phone service;
- Removal of traffic control features;
- Removal of construction debris;
- Disposal of other non-regulated waste; and
- Stabilization of the Open Space Area cover soils, including seeding and other erosion control measures.

15.0 CONSTRUCTION PERMITS

The following construction permits were obtained to complete the onsite work. Applications for renewals were submitted as needed. Permits that were no longer required were allowed to expire.

Permit	Site	Status	Expiration Date
NJDEP Waterfront Development	SA-6 North Only	Obtained 6/23/2010	6/23/2015*
NJDEP CAFRA/WFD/FHA GWTP Force Mains	GWTP	Obtained 4/22/2008	4/22/2013 (no extension necessary)
HEPSCD Soil Erosion and Sedimentation Control Plan (SESCP)	GWTP	Obtained 8/27/2012	2/27/2016 (no extension necessary)
NJDEP CAFRA/WFD/FHA	GWTP	Obtained 11/16/2012	6/23/2015 (no extension necessary)
NJDEP Treatment Works Approval	GWTP	Obtained 4/11/2013	4/23/2013 (no extension necessary)
NJDEP Air Pollution Control Preconstruction Permit	Existing GWTP	Obtained 9/24/2013 Automatically Renewed for 5 years	6/23/2019
PVSC SUP No. 20630025	Existing GWTP	Obtained 10/1/2013 Final Revision 12/02/15	6/30/2018

Permit	Site	Status	Expiration Date
PVSC SUP No. 31630019	SA-6 Chromium Remedy	Obtained 3/26/2014 Final Revision 5/23/14	8/31/2018
SESCP	SA-6 Chromium Remedy	Obtained 5/16/2013	11/16/2016
Request for Authorization (RFA)	SA-6 Chromium Remedy	Obtained 5/29/2013	Not Specified
NJDEP - Water Allocation	SA-6 Chromium Remedy	Obtained 6/19/2013	5/31/2018
NJDEP – Treatment Works Approval (TWA)	SA-6 Chromium Remedy	Obtained 7/8/2013	6/30/2016 (no extension necessary)
NJDOT - Highway Occupancy Permit	SA-6 Chromium Remedy	Obtained 9/11/2013 Extension Obtained 10/14/2015	6/30/2016
NJDEP Discharge to Groundwater (DGW) for In-Situ Treatment of Chromium Impacted Soils	SA-6 North	Obtained 4/30/2012 Revised 7/14/2015	Not Specified
NJDEP DGW for In-Situ Treatment of Chromium Impacted Soils	SA-6 North	Obtained 8/4/2016	Not Specified

Permit	Site	Status	Expiration Date
NJDOT – Application for Drainage Connection, Post Remediation Grading and Drainage	SA-6 Chromium Remedy	Application Submitted 8/19/14 Permit Application Rescinded 12/1/14 & Approved by DOT on 12/18/14	N/A
NJDOT – Highway Occupancy Permit – Installation of Sheet Piling and Excavation Adjacent to Rte. 440 ROW	SA-6 Chromium Remedy	Final Executed Permit Issued 12/2/14 Extension Obtained 12/24/2015	12/3/2016

*Note: Because the work was initiated before the expiration date of the NJDEP Waterfront Development permit, NJDEP did not require extension of this permit.

16.0 SUSTAINABILITY EFFORTS DURING CONSTRUCTION

Under Honeywell's stewardship the construction process was integrated into the overall vision for the Jersey City west side redevelopment by incorporating a sustainable design approach which focused on conservation of natural resources through beneficial reuse, recycling, minimization of ongoing energy consumption and reduction in carbon footprint. Specifically, Honeywell's sustainable construction efforts integrated:

- Use of renewable B-20 Biodiesel in lieu of conventional fossil fuel based petro-diesel in construction equipment;
- Consolidation of soils in the Open Space Area eliminating the fuel and traffic associated with off-site disposal; and,
- Crushing and recycling of demolition generated clean concrete to be reused as clean fill material on site.

17.0 POST-REMEDY OPERATION & MAINTENANCE

Following completion of the remedial actions, including installation of the groundwater extraction system which is to be operated on a contingent basis, a post-remediation long-term monitoring program will be implemented in accordance with the pending LTMP. The LTMP was developed and submitted to NJDEP and all Parties in October 2015 to address the monitoring requirements specified in the SA-6 North Consent Decree Paragraph 64. As of the writing of this CCR, Honeywell and the Parties are in final negotiations regarding the terms of the LTMP. Honeywell will be implementing the uncontested LTMP activities until the LTMP is finalized. The LTMP satisfies the Consent Decree requirements for long-term monitoring, maintenance, and protection of engineering and institutional controls by establishing procedures and schedules for the following activities required by the Consent Decree:

- Quarterly visual inspections to ensure only permitted land usage is occurring and verify no usage compromises the integrity of the Chromium Remedy;
- Quarterly visual inspection monitoring of the grade and slope to identify whether erosion has occurred or is occurring;
- Quarterly visual inspection monitoring to determine if noticeable differential settlement or subsidence has occurred that could impair the integrity of the Chromium Remedy;
- Baseline topographic survey at completion of the Chromium Remedy and additional surveys annually for the first 5 years, then every 5 years for an additional 10 years;
- Quarterly visual inspection monitoring to determine if disturbance of the Chromium Remedy in the Open Space Area has occurred;
- Quarterly visual inspection monitoring to ensure that burrowing animals are not materially impairing the integrity of the Chromium Remedy;
- Quarterly visual inspection monitoring of the vegetative cover to ensure that vegetative cover in the Open Space Area is in conformance with the landscaping provisions of the SA-6 North 100% Design, including the OSDS, and the Redevelopment Plan and will not materially impair the integrity of the Chromium Remedy;

- Maintenance of the vegetative cover to include mowing to ensure tree species cannot become established except in designated areas and removal of any vegetation not permitted by the OSDS that would impair the integrity of the Chromium Remedy;
- Quarterly groundwater elevation monitoring to ensure specified hydraulic gradients across the hydraulic barriers;
- Monthly monitoring of vented gases and the gas venting system for 1 year. Frequency will be reduced to quarterly after 1 year if data are stable; and
- Any additional monitoring required by the specific design details.

The draft LTMP was submitted to all Parties, including NJDEP, in October 2015. Revised drafts of the LTMP were submitted to all Parties, including NJDEP, in September 2016, February of 2017, and June 2017. The LTMP, once finalized after review by the NJDEP, Plaintiffs and the Special Master, will be the governing document for the operation, maintenance, and inspection of the Chromium Remedy components, including the contingent operation of the groundwater extraction system.

The relationship between long-term monitoring and institutional controls that are required by the SA-6 North Chromium Remedy is discussed in Section 17.

18.0 INSTITUTIONAL CONTROLS

Institutional controls are integral to the Chromium Remedy at SA-6 North and were made a part of the RAOs. The institutional controls are applied in accordance with Subchapter 7 of NJDEP's ARRCS (N.J.A.C. 7:26C).

Institutional controls include deed notices and remedial action permits at specific areas where chromium-impacted soils or groundwater remain and a CEA for residual chromium-impacted groundwater. Additional institutional controls for the Open Space Area pursuant to the SA-6 North consent decree includes transferring ownership to Jersey City after construction of roads and utility corridors and the granting of a conservation restriction.

18.1 DEED NOTICES

To meet Honeywell's and Bayfront's objectives for SA-6 North and coordinate with the objectives of the Development, five deed notices are required for the chromium impacts at SA-6 North. The areas to which each of the five deed notices apply are shown on **Figure 16**. Draft deed notices are contained in **Appendix S**. After the deed notices have been reviewed and approved by the NJDEP and finalized, they will be recorded at the office of the Hudson County Register.

The deed notices have been prepared in general accordance with NJDEP's ARRCS; however, model deed notice language from the SA-6 North Consent Decree was used as the model text. Each deed notice specifies conditions for alteration, improvement, and/or disturbance of the engineering controls, and provide monitoring, maintenance, notification and reporting requirements. These requirements include documentation that applicable worker health and safety laws and regulations are followed during the disturbance and restoration of those controls. The deed notices contain figures and cross-sections showing the engineering controls and details regarding notification and reporting requirements.

18.2 SOIL REMEDIAL ACTION PERMITS

Honeywell has prepared draft Remedial Action Permit (RAP) Applications for Soil for the SA-6 North Open Space Area, three Deferred Areas, and one Treatment Area for NJDEP review. The draft RAP applications are attached to this CCR document. Once the deed notices are filed, the RAP applications will be finalized and submitted

to the NJDEP. The permit applications contain requirements for monitoring, maintenance and reporting to document the protectiveness of the remedial actions and engineering controls for each of the areas on which the deed notices have been established until such time the deed notice is no longer required. The permit also includes a schedule for submittal of Biennial Certification Reports to the NJDEP, and requirements pertaining to financial assurance (see Section 20) and permit transfer, modification and termination.

As remediation at each Deferred Area is completed, the remedial action permit and deed notice will be terminated by submitting documentation to NJDEP and All Parties.

18.3 GROUNDWATER REMEDIAL ACTION PERMITS

Honeywell has prepared a draft RAP Application for Groundwater for the SA-6 North Open Space Area. The draft RAP application was attached to the RAR approved by NJDEP on June 1, 2017 and now that the RAR is approved by NJDEP, the RAP application will be finalized and submitted to the NJDEP.

The permit applications contain requirements for monitoring, maintenance and reporting to document the protectiveness of the remedial actions and engineering controls for each of the areas on which the deed notices have been established until such time the deed notice is no longer required. The permits also include a schedule for submittal of Biennial Certification Reports to the NJDEP, and requirements pertaining to financial assurance (see Section 20) and permit transfer, modification and termination.

18.4 CLASSIFICATION EXCEPTION AREA (EXISTING SHALLOW GW RA PERMIT)

A regional CEA for groundwater has been established by NJDEP on February 16, 2012 for the SA-5/6/7 sites as an institutional control to identify chromium-impacted groundwater above the NJDEP GWQS and prevent the use of groundwater within the designated CEA areas (see **Appendix F**). The CEAs address the shallow fill, deep overburden, and bedrock zones. The shallow zone refers to groundwater within fill material (above the Stratum D and underlying native soils), generally to a depth of 20 feet bgs. The deep overburden zone refers to groundwater below the fill and Stratum D down to bedrock, generally from approximately 20 feet to 90 feet bgs.

The bedrock zone refers to groundwater within the upper 20 to 40 feet of fractured bedrock. The shallow groundwater CEA may be modified in the future following one year of post-remedial action groundwater elevation monitoring.

A RAP application for shallow groundwater that matches the existing shallow groundwater CEA boundary will be submitted to the NJDEP. Separate RAPs for the Regional Groundwater are being prepared for the deep overburden and bedrock zones and will be submitted to NJDEP separately.

18.5 CONSERVATION RESTRICTIONS

Conservation Restrictions were prepared for both Open Space Areas at SA-6 North and SA-6 South at the time of property transfer from Jersey City Redevelopment Agency to Bayfront Redevelopment LLC per Paragraph 60(b) of the SA-6 North Consent Decree and at the time of the granting of the option to buy per Paragraph 74(b) of the SA-6 South Consent Decree. These conservation restrictions were recorded on March 25, 2010. The existing conservation restriction placed on the SA-6 North Open Space Area will be amended to include the as-built hydraulic barrier walls. Additionally, the amended conservation restriction will be modified to include the portion of TA-10 that lies south of the northern curbline of the future Stegman Boulevard which will be capped by Stegman Boulevard. Hackensack River Watershed Land Trust shall be the primary holder of the conservation restrictions once amended.

19.0 RECORD DRAWINGS

In accordance with Section 60(j)(viii) of the SA-6 North Consent Decree and the TRSR, Record Drawings were prepared and are included in **Appendix C**. Maser completed surveys by a NJ licensed surveyor and Mr. Thomas Hugg sealed drawings prepared by Maser. Amec Foster Wheeler engineer of record for SA-6 North, Mr. Samuel G. Shallard, PE, sealed Record Drawings prepared by Amec Foster Wheeler.

The Record Drawings and the SA-6 North 100% Design Report set the standard for future repair or replacement of the Chromium Remedy under the SA-6 North Consent Decree.

20.0 REMEDIAL ACTION COSTS

Remediation costs are summarized in the table below:

Activity	Cost ($1MM)
Construction Costs	$26
Soil Disposal	$2
Oversight/Construction Management	$2.4
Total	**$30.4**

20.1 FINANCIAL ASSURANCES

Long term monitoring for SA 6 North and South is part of the overall financial assurance letter of credit for chromium remediation at SA-5, SA-6 North, SA-6 South and SA-7 that are subject to the oversight of the Special Master. This letter of credit is issued by the MUFG Union Bank, N.A. in the amount of $46,915,000 to cover all remediation and long term monitoring activities at these sites.

21.0 REMEDIATION CLOSE OUT SUMMARY

The Chromium Remedy at SA-6 North commenced on March 2013 and was substantially complete by November 2016. The Chromium Remedy was implemented in accordance with the TRSR, the ACO, the SA-6 North Consent Decree, the SA-6 North 100% Design Report and subsequent DCs, and other clarifying correspondence between Honeywell and NJDEP and/or Honeywell, the Special Master, and Plaintiffs. Therefore, other than remediation of the Deferred Areas, no further remedial actions are required for either the Residential Development or Open Space Areas at SA-6 North. Remediation of Deferred Areas will be coordinated with the implementation of the Bayfront Redevelopment Plan, the widening of Route 440, JCMUA relocation of the fuel island, and the completion of the in-situ treatment activities.

The RAOs for SA-6 North soils and groundwater, except in the Deferred Areas, will be met by the Chromium Remedy implemented in all AOCs and the establishment of institutional controls. The hydraulic barrier is designed to restrict potential offsite migration of chromium-impacted groundwater. Further, the LTMP establishes procedures and schedules for long-term monitoring of groundwater levels in the Open Space Area to determine the potential operation of the contingent groundwater extraction system based on trigger criteria. The LTMP also establishes the inspection, maintenance, and operation of critical features of the Chromium Remedy.

Honeywell will establish appropriate institutional controls at SA-6 North that supplement the physical remedial actions including deed notices for five distinct areas, conservation restrictions for the Open Space Area and the other chromium deed notice areas of SA-6 North, and remedial action permits for soils and a remedial action permit for groundwater in the Open Space Area. A classification exception area has already been established with NJDEP for the regional shallow groundwater and adequately covers SA-6 North. Final soil and groundwater Remedial Action Permit applications will be submitted to NJDEP.

It is Honeywell's intention that this CCR will close out remediation of chromium-impacted soil, except for the Deferred Areas, and chromium-impacted groundwater for SA-6 North. Honeywell will document additional soil remediation in the

Deferred Areas by filing supplements to this CCR. NJDEP has reviewed and approved the RAR submitted separately from this CCR.

In accordance with paragraph 5 of the Consent Order Entering Consolidated 100% Design for Study Area 6 North and Study Area 6 South, *Jersey City Municipal Utilities Auth. v. Honeywell,* No. 2:05-cv-05955-DMC-JAD (D. N.J. July 9, 2013), ECF No. 448, Honeywell will submit a Consent Order which has appended to it (i) the 100% Design except the drawings and (ii) this Final CCR for entry with the Federal Court. The Consent Order will explain that the CCR supersedes the 100% Design. The supplements to this CCR for the deferred areas will be subject to the Special Master review and approval requirements of the SA-6 North Consent Decree, and will be filed with the Court as a supplement to the Consent Order filed in accordance with paragraph 5 of the Consent Order Entering Consolidated 100% Design for Study Area 6 North and Study Area 6 South.

As remediation at each Deferred Area is completed, the remedial action permit and deed notice will be terminated by submitting documentation to NJDEP and All Parties.

22.0 REFERENCES

AMEC Environment and Infrastructure, Inc., 2013. Revised Work Plan for In-Situ Treatment of Chromium Impacted Soil Study Area 6 North, Jersey City, New Jersey. February 2013.

AMEC Environment and Infrastructure, Inc., 2013. Chromium Remedy 100% Design Report – Issued for Construction, Study Area 6 North, Sites 087 and 088, Jersey City, New Jersey. June 2013.

AMEC Environment and Infrastructure, Inc., 2013. Chromium Remedy 100% Design Report – Issued for Construction, Study Area 6 South (Sites 073, 124, 125, 134, 140, and 163), Jersey City, New Jersey. June 2013.

AMEC Environment and Infrastructure, Inc., 2015. Long Term Monitoring Plan, Study Area 6 North (Sites 087 and 088) and Study Area 6 South (Sites 073, 124, 125, 134, 140, and 163), Jersey City, New Jersey. June 2013. Last Revision February 2017.

AMEC Environment and Infrastructure, Inc., 2015. *Updated Work Plan for In-Situ Treatment of Chromium-Impacted Soils at the Northern Area Section of Treatment Area 10*. August 2015.

Administrative Consent Order (ACO) between Honeywell, formerly Allied Signal, Inc., and the New Jersey Department of Environmental Protection, 1993.

Consent Decree Regarding Remediation and Redevelopment of Study Area 6 North, entered August 2, 2012.

Consent Judgment between Honeywell and the NJDEP dated September 7, 2011.

HydroQual, Inc., 2005. HydroQual, Inc., 2005. Preliminary Deep Overburden Groundwater Report, Honeywell Study Area 7. March 31, 2005, HWEL.002.001.11.

HydroQual, Inc., 2006. Deep Overburden Groundwater Remedial Alternatives (DORAA) Report Honeywell Study Area 7. June 2006. HWEL.002.001.11.

HydroQual, Inc., 2007. Final Groundwater Investigation Report, Honeywell Study Area 7. February 2, 2007. HWEL 002.001.11

MACTEC Engineering and Consulting, Inc., 2008. Remedial Action Selection Report/Remedial Action Work Plan for Chromium, Study Area 6 North, Jersey City, New Jersey. January 2008. Amended February 2008.

NJDEP, 2004; Historic Fill of the Jersey City Quadrangle (HFM-53)

NJDEP, 2005; Field Sampling Procedures Manual dated August 2005; last updated April 11, 2011. Available at http://www.nj.gov/dep/srp/guidance/fspm/

NJDEP, 2007; Chromium Policy Memorandum dated February 8, 2007

NJDEP, 2012. New Jersey Administrative Code, Chapter 26C Administrative Requirements for the Remediation of Contaminated Sites; last revised May 7, 2012, Trenton, New Jersey.

NJDEP, 2013. New Jersey Administrative Code, Chapter 26E Technical Requirements for Site Remediation May 7, 2012; last revised July 1, 2013, Trenton, New Jersey.

Settlement Consent Order by and between the Jersey City Entities and Honeywell International Inc., entered April 21, 2008.

TetraTech, Inc., July 2000. Draft Remedial Investigation Report Addendum, Study Area 6 NJDEP Site No. 073, 087, 088, 124, 125, 134, 140, and 163, Jersey City, New Jersey. July 2000.

23.0 LIST OF ACRONYMS AND ABBREVIATIONS

ACO	Administrative Consent Order
AOC	Area of Concern
ARRCS	Administrative Requirements for Remediation of Contaminated Sites
ASTM	American Society of Testing Materials
bgs	Below ground surface
BMUA	Bayonne Municipal Utility Authority
CAFRA	Coastal Area Facilities Act
CAPS	Calcium Polysulfide
CASP	Concrete and Asphalt Sampling Plan
CCR	Construction Completion Report
CEA	Classification Exception Area
COC	Contaminants of Concern
COPR	Chromite Ore Processing Residue
CWTP	Construction Water Treatment Plant
CY	Cubic Yards
DC	Design Change Bulletins
DGW-PBR	Discharge to Groundwater Permit By Rule
DMP	Data Management Plan
EA	Excavation Area
EDD	Electronic Data Deliverables
EOR	Engineer of Record
EPH	Extractable Petroleum Hydrocarbons
FHA	Flood Hazard Area
GCL	Geosynthetic Composite Layer
GDL	Geosynthetic Drainage Layer
gpm	gallons per minute
GPS	Global Positioning System
GWLMP	Groundwater Level Monitoring Plan
GWTP	Groundwater Treatment Plant
GWQS	Groundwater Quality Standards
GVL	Geosynthetic Venting Layer
HASP	Health and Safety Plan
HDPE	High-density polyethylene
IP	Injection Point
IFC	Issued for Construction
IGW	Impact to Groundwater

JCDPW	Jersey City Department of Public Works
JCIA	Jersey City Incinerator Authority
JCMUA	Jersey City Municipal Utilities Authority
JCRA	Jersey City Redevelopment Authority
LF	Linear Feet
LLDPE	Liner Low Density Polyethylene
LSRP	Licensed Site Remediation Professional
LTMP	Long Term Monitoring Plan
µg/L	micrograms per liter
µg/m^3	micrograms per cubic meter
mg/kg	milligrams per kilogram
MOU	Memorandum of Understanding
MRCE	Mueser Rutledge Consulting Engineers
NGVD29	National Geodetic Vertical Datum 1929
N.J.A.C.	New Jersey Administrative Code
NJCU	New Jersey City University
NJDEP	New Jersey Department of Environmental Protection
NJDOT	New Jersey Department of Transportation
OSHA	Occupational Safety and Health Administration
PAMP	Perimeter Air Monitoring Plan
PDI	Pre-Design Investigation
PID	Photo-ionization Detector
PPE	Personal Protective Equipment
PSE&G	Public Service Electric & Gas
PVC	Polyvinyl Chloride
PVSC	Passaic Valley Sewerage Commission
QA/QC	Quality Assurance/Quality Control
RAOs	Remedial Action Objectives
RAR	Remedial Action Report
RAP	Remedial Action Permit
RAWP	Remedial Action Work Plan
RCP	Reinforced Concrete Pipe
RCRA	Resource Conservation and Recovery Act
RFI	Request for Information
RI	Remedial Investigation
RIR	Remedial Investigation Report
ROW	Right of Way

SA	Study Area
SCB	Soil-Cement Bentonite
SESCP	Soil Erosion Sediment Control Plan
SF	Square Feet
SMP	Soil Management Plan
SPLP	Synthetic Precipitation Leaching Procedure
SRIR	Supplemental Remedial Investigation Report
TAL	Target Analyte List
TCL	Target Compound List
TI	Technically Impracticable
TRSR	Technical Regulations for Site Remediation
TWP	Temporary Well Point
USEPA	United States Environmental Protection Agency
UST	Underground Storage Tank
VMP	Vibration Monitoring Plan
VOC	Volatile Organic Compound

TABLES

TABLE 1A

Baseline PAMP Data

Study Area 6 North
Honeywell International Inc.
Jersey City, New Jersey

Entry	Date	Sample #	Location	Start	Stop	Minutes	Volume	Analytical Results for Particulate (ug/m^3)		Analytical Results for CrVI (ng/m^3)	
2	Monday, July 15, 2013	**N1CrD071513***	N1	7:31	15:55	504	1110.0	<	90.0	<	18.0
4	Tuesday, July 16, 2013	N1CrD071613	N1	7:25	15:41	496	1093.0	<	91.0	<	18.0
6	Wednesday, July 17, 2013	N1CrD071713	N1	7:20	15:32	492	1041.0	<	96.0	<	19.0
8	Monday, July 22, 2013	N1CrD072213	N1	7:22	15:40	498	1024.0	<	98.0	<	20.0
10	Wednesday, July 24, 2013	N1CrD072413	N1	7:12	15:39	507	1033.0	<	97.0	<	20.0
12	Thursday, July 25, 2013	N1CrD072513	N1	6:05	14:11	486	985.0	<	100.0	<	20.0
14	Tuesday, July 30, 2013	**N1CrD073013***	N1	7:27	15:45	498	999.6	<	100.0	<	20.0
16	Wednesday, July 31, 2013	N1CrD073113	N1	7:15	15:41	506	997.1	<	100.0	<	20.0
18	Monday, August 05, 2013	N1CrD080513	N1	7:15	15:35	500	999.0	<	100.0	<	20.0
20	Tuesday, August 06, 2013	N1CrD080613	N1	6:55	15:25	510	1037.1	<	96.0	<	19.0

Notes:	**Action Levels**	
Detectable Results Below Action Level	Hexavalent Chromium	221 ng/m^3
ng/m^3: nanograms per cubic meter	***Validated by 3rd Party**	
ug/m^3: microgram per cubic meter		

Prepared by: NW 12/13/2016
Reviewed by: JLD 12/15/2016

TABLE 1A

Baseline PAMP Data

Study Area 6 North
Honeywell International Inc.
Jersey City, New Jersey

Entry	Date	Sample #	Location	Start	Stop	Minutes	Volume	Analytical Results for As (ng/m^3)		Analytical Results for Pb(ng/m^3)		Analytical Results for V (ng/m^3)		Analytical Results for Zn (ng/m^3)	
2	Monday, July 15, 2013	**N1Met071513***	N1	7:31	15:55	504	1090.0	<	47	<	47	<	2800	<	920
4	Tuesday, July 16, 2013	N1Met071613	N1	7:25	15:41	496	1073.0	<	47		76	<	2800	<	930
6	Wednesday, July 17, 2013	N1Met071713	N1	7:20	15:32	492	1039.0	<	49	<	50	<	2900	<	960
8	Monday, July 22, 2013	N1Met072213	N1	7:22	15:40	498	1027.0	<	49	<	50	<	2900	<	970
10	Wednesday, July 24, 2013	N1Met072413	N1	7:12	15:39	507	1037.0	<	49	<	50	<	2900	<	960
12	Thursday, July 25, 2013	N1Met072513	N1	6:05	14:11	486	997.0	<	51	<	52	<	3000	<	1000
14	Tuesday, July 30, 2013	**N1Met073013***	N1	7:27	15:45	498	1012.7	<	50	<	3000	<	3000	<	990
16	Wednesday, July 31, 2013	N1Met073113	N1	7:15	15:41	506	1031.1	<	49	<	2900	<	2900		2400
18	Monday, August 05, 2013	N1Met080513	N1	7:15	15:35	500	1029.3	<	49	<	250	<	2900	<	970
20	Tuesday, August 06, 2013	N1Met080613	N1	6:55	15:25	510	1034.5	<	49	<	250	<	2900	<	970

Notes:	Action Levels	
Detectable Results Below Action Level	Arsenic (As)	200 ng/m^3
***Validated by 3rd Party**	Lead (Pb)	300 ng/m^3
ng/m^3: nanograms per cubic meter	Vanadium (V)	300 ng/m^3
	Zinc (Zn)	Not Applicable

Prepared by: NW 12/13/2016
Reviewed by: JLD 12/15/2016

TABLE 1B
Tracking Log
Hexavalent Chromium Air Samples

Study Area 6 North
Honeywell International Inc.
Jersey City, New Jersey

Entry	Date	Sample #	Location	Start	Stop	Minutes	Volume	Analytical Results for Particulate (ug/m^3)		Analytical Results for CrVI (ng/m^3)	
1	Friday, October 09, 2015	**MN1100915***	MN1	7:10	15:50	520	1,773	<	56.0	<	5.8
2	Tuesday, October 13, 2015	N1101315	N1	6:50	15:11	501	1,623	<	62.0	<	6.3
3	Wednesday, October 14, 2015	N1101415	N1	7:06	15:30	504	1,641	<	61.0	<	6.2
4	Thursday, October 15, 2015	MN1101515	MN1	7:03	15:18	495	1,690	<	59.0	<	6.1
5	Friday, October 16, 2015	MN1101615	MN1	6:48	15:23	515	1,697	<	59.0	<	6.0
6	Monday, October 19, 2015	MN1101915	MN1	7:02	15:30	508	1,633	<	61.0	<	6.2
7	Tuesday, October 20, 2015	N1102015	N1	7:38	15:22	464	1,482	<	67.0	<	6.9
8	Wednesday, October 21, 2015	MN1102115	MN1	7:08	15:30	502	1,689		78.0	<	6.0
9	Thursday, October 22, 2015	MN1102215	MN1	6:45	15:00	495	1,661		120.0	<	6.1
10	Friday, October 23, 2015	N3102315	N3	6:50	15:18	508	1,717	<	58.0	<	5.9
11	Monday, October 26, 2015	N3102615	N3	6:55	15:40	525	1,777	<	56.0	<	5.7
12	Tuesday, October 27, 2015	MN1102715	MN1	7:25	15:05	460	1,564	<	64.0	<	6.5
13	Wednesday, October 28, 2015	**MN1102815***	MN1	6:57	15:10	493	1,664	<	60.0	<	6.1
14	Thursday, October 29, 2015	MN1102915	MN1	6:59	15:00	481	1,628	<	61.0	<	6.2
15	Friday, October 30, 2015	N3103015	N3	6:57	15:08	491	1,677	<	60.0	<	6.1
16	Monday, November 02, 2015	N3110215	N3	6:50	15:38	528	1,782	<	56.0	<	5.7
17	Tuesday, November 03, 2015	**N1110315***	N1	6:55	15:10	495	1,685	<	59.0	<	6.0
18	Wednesday, November 04, 2015	MN1110415	MN1	7:10	15:25	495	1,661		62.0	<	6.1
19	Thursday, November 05, 2015	MN1110515	MN1	6:50	15:05	495	1,676	<	60.0	<	6.0
20	Friday, November 06, 2015	MN1110615	MN1	7:05	15:13	488	1,637		79.0	<	6.2
21	Monday, November 09, 2015	MN1110615	MN1	6:55	14:55	480	1,618	<	62.0	<	6.2
22	Tuesday, November 10, 2015	N3111015	N3	6:55	15:15	500	1,695	<	59.0	<	6.0
23	Wednesday, November 11, 2015	N3111115	N3	6:55	15:00	485	1,634	<	61.0	<	6.2
24	Thursday, November 12, 2015	MN1111215	MN1	6:55	15:00	485	1,647	<	61.0	<	6.1
25	Friday, November 13, 2015	N3111315	N3	7:02	15:08	486	1,648	<	61.0	<	6.1
26	Monday, November 16, 2015	N3111615	N3	7:00	15:35	515	1,741	<	57.0	<	5.8
27	Tuesday, November 17, 2015	N3111715	N3	7:05	15:25	500	1,702	<	59.0	<	5.9
28	Wednesday, November 18, 2015	MN1111815	MN1	7:00	15:21	501	1,701	<	59.0	<	5.9
29	Thursday, November 19, 2015	MN1111915	MN1	7:05	15:15	490	1,651	<	61.0	<	6.1
30	Friday, November 20, 2015	N3112015	N3	7:17	15:22	485	1,649	<	61.0	<	6.1
31	Monday, November 23, 2015	**N3112315***	N3	7:00	15:40	520	1,760	<	57.0	<	5.7
32	Tuesday, November 24, 2015	MN2112415	MN2	7:03	15:19	496	1,676		65.0	<	6.0
33	Wednesday, November 25, 2015	N3112515	N3	6:53	14:03	430	1,456	<	69.0	<	6.9
34	Monday, November 30, 2015	N3113015	N3	6:55	15:29	514	1,732	<	58.0	<	5.8
35	Tuesday, December 01, 2015	MN1120115	MN1	7:03	15:28	505	1,712	<	58.0	<	5.9
36	Wednesday, December 02, 2015	MN2120215	MN2	6:54	15:21	507	1,714	<	58.0	<	5.9
37	Thursday, December 03, 2015	MN2120315	MN2	6:50	15:19	509	1,731	<	58.0	<	5.8
38	Friday, December 04, 2015	N3120415	N3	6:55	15:23	508	1,712	<	58.0	<	5.9
39	Monday, December 07, 2015	MN2120715	MN2	6:57	15:42	525	1,775	<	56.0	<	5.6

Prepared by: NW 12/13/2016
Reviewed by: JLD 12/15/2016

TABLE 1B
Tracking Log
Hexavalent Chromium Air Samples
Study Area 6 North
Honeywell International Inc.
Jersey City, New Jersey

Entry	Date	Sample #	Location	Start	Stop	Minutes	Volume	Analytical Results for Particulate (ug/m^3)		Analytical Results for CrVI (ng/m^3)	
40	Tuesday, December 08, 2015	N3120815	N3	6:53	15:17	504	1,698	<	59.0	<	5.9
41	Wednesday, December 09, 2015	MN1120915	MN1	7:03	15:28	505	1,720		67.0	<	5.8
42	Thursday, December 10, 2015	**MN1121015***	MN1	6:43	15:30	527	1,784	<	56.0	<	5.6
43	Friday, December 11, 2015	N1121115	N1	6:51	15:15	504	1,701		64.0	<	5.9
44	Monday, December 14, 2015	MN1121415	MN1	6:57	15:18	501	1,691		120.0	<	5.9
45	Tuesday, December 15, 2015	MN2121515	MN2	7:00	15:25	505	1,717	<	58.0	<	5.8
46	Wednesday, December 16, 2015	MN1121615	MN1	6:58	15:15	497	1,690	<	59.0	<	5.9
47	Thursday, December 17, 2015	MN1121715	MN1	6:58	15:42	524	1,776	<	56.0	<	5.6
48	Friday, December 18, 2015	N3121815	N3	6:53	15:23	510	1,729	<	58.0	<	5.8
49	Monday, December 21, 2015	N1122115	N1	6:57	15:43	526	1,775	<	56.0	<	5.6
50	Tuesday, December 22, 2015	MN1122215	MN1	6:43	15:30	527	1,792	<	56.0	<	5.6
51	Wednesday, December 23, 2015	N3122315	N3	6:53	14:07	434	1,476	<	68.0	<	6.8
52	Monday, December 28, 2015	**MN1122815***	MN1	6:45	15:28	523	1,765	<	57.0	<	5.7
53	Tuesday, December 29, 2015	MN1122915	MN1	7:08	15:28	500	1,702		350.0	<	5.9
54	Wednesday, December 30, 2015	MN1123015	MN1	6:56	15:15	499	1,669	<	60.0	<	6.0
55	Thursday, December 31, 2015	N3123115	N3	8:50	14:10	320	1,082	<	92.0	<	9.2
56	Monday, January 04, 2016	N3010416	N3	6:55	15:38	523	1,770		130.0	<	5.6
57	Tuesday, January 05, 2016	N3010516	N3	7:03	15:23	500	1,690	<	59.0	<	5.9
58	Wednesday, January 06, 2016	N1010616	N1	7:00	15:25	505	1,712	<	58.0	<	5.8
59	Thursday, January 07, 2016	MN2010716	MN2	7:07	15:30	503	1,698		100.0	<	5.9
60	Friday, January 08, 2016	N1010816	N1	7:03	15:13	490	1,666	<	60.0	<	6.0
61	Monday, January 11, 2016	N3011116	N3	6:47	15:37	530	1,844		74.0	<	5.4
62	Tuesday, January 12, 2016	MN1011216	MN1	7:12	15:28	496	1,724	<	58.0	<	5.8
63	Wednesday, January 13, 2016	N3011316	N3	6:45	15:25	520	1,781		100.0	<	5.6
64	Thursday, January 14, 2016	MN2011416	MN2	7:16	15:37	501	1,811	<	55.0	<	5.5
65	Friday, January 15, 2016	N3011516	N3	6:33	15:38	545	1,883	<	53.0	<	5.3
66	Monday, January 18, 2016	**N3011816***	N3	6:39	15:32	533	1,945	<	51.0	<	5.1
67	Tuesday, January 19, 2016	**N3011916***	N3	6:37	15:20	523	1,838		140.0	<	5.4
68	Wednesday, January 20, 2016	N3012016	N3	6:41	15:11	510	1,780	<	56.0	<	5.6
69	Thursday, January 21, 2016	N3012116	N3	6:34	15:23	529	1,828		77.0	<	5.5
70	Friday, January 22, 2016	N3012216	N3	6:49	15:21	512	1,856	<	54.0	<	5.4
71	Tuesday, January 26, 2016	MN1012616	MN1	6:51	15:16	505	1,783	<	56.0	<	5.6
72	Wednesday, January 27, 2016	N3012716	N3	6:41	15:13	512	1,782	<	56.0	<	5.6
73	Thursday, January 28, 2016	N3012816	N3	7:29	15:19	470	1,610	<	62.0	<	6.2
74	Friday, January 29, 2016	MN1012916	MN1	6:41	15:19	518	1,800	<	56.0	<	5.6
75	Monday, February 01, 2016	MN1020116	MN1	7:18	15:29	491	1,733	<	58.0	<	5.8
76	Tuesday, February 02, 2016	N3020216	N3	7:12	15:24	492	1,724	<	58.0	<	5.8
77	Wednesday, February 03, 2016	MN1020316	MN1	7:26	15:19	473	1,611	<	62.0	<	6.2
78	Thursday, February 04, 2016	N3020416	N3	7:30	15:43	493	1,696	<	59.0	<	5.9

Prepared by: NW 12/13/2016
Reviewed by: JLD 12/15/2016

TABLE 1B
Tracking Log
Hexavalent Chromium Air Samples

Study Area 6 North
Honeywell International Inc.
Jersey City, New Jersey

Entry	Date	Sample #	Location	Start	Stop	Minutes	Volume	Analytical Results for Particulate (ug/m^3)		Analytical Results for CrVI (ng/m^3)	
79	Friday, February 05, 2016	N3020516	N3	7:07	15:42	515	1,733	<	58.0	<	5.8
80	Monday, February 08, 2016	N3020816	N3	6:50	15:44	534	1,837	<	54.0	<	5.5
81	Tuesday, February 09, 2016	MN1020916	MN1	7:23	15:17	474	1,619	<	62.0	<	6.2
82	Wednesday, February 10, 2016	MN2021016	MN2	7:20	15:10	470	1,622	<	62.0	<	6.2
83	Thursday, February 11, 2016	N3021116	N3	7:19	15:19	480	1,661		65.0	<	6.0
84	Friday, February 12, 2016	N3021216	N3	7:23	15:12	469	1,623	<	62.0	<	6.2
85	Tuesday, February 16, 2016	MN1021616	MN1	9:21	15:24	363	1,218	<	82.0	<	8.3
86	Wednesday, February 17, 2016	MN2021716	MN2	6:47	15:14	507	1,734	<	58.0	<	5.8
87	Thursday, February 18, 2016	N3021816	N3	7:22	15:28	486	1,645	<	61.0	<	6.1
88	Friday, February 19, 2016	N3021916	N3	7:13	15:19	486	1,643	<	61.0	<	6.1
89	Monday, February 22, 2016	**N3022216***	N3	7:22	16:19	537	1,837	<	54.0	<	5.5
90	Tuesday, February 23, 2016	**MN1022316***	MN1	7:35	12:13	278	954	<	100.0	<	11.0
91	Wednesday, February 24, 2016	**N3022416***	N3	7:13	15:19	486	1,660	<	60.0	<	6.1
92	Thursday, February 25, 2016	MN1022516	MN1	6:42	15:14	512	1,733	<	58.0	<	5.8
93	Friday, February 26, 2016	N3022616	N3	7:24	15:15	471	1,590	<	63.0	<	6.4
94	Monday, February 29, 2016	MN1022916	MN1	7:13	15:36	503	1,708	<	59.0	<	5.9
95	Tuesday, March 01, 2016	N3030116	N3	6:51	15:04	493	1,693	<	59.0	<	6.0
96	Wednesday, March 02, 2016	MN2030216	MN2	7:23	15:27	484	1,665	<	60.0	<	6.1
97	Thursday, March 03, 2016	N3030316	N3	6:49	15:16	507	1,714	<	58.0	<	5.9
98	Friday, March 04, 2016	MN1030416	MN1	8:19	15:21	422	1,458	<	69.0	<	6.9
99	Monday, March 07, 2016	MN1030716	MN1	6:41	15:16	515	1,769	<	57.0	<	5.7
100	Tuesday, March 08, 2016	N3030816	N3	8:07	15:23	436	1,491	<	67.0	<	6.8
101	Wednesday, March 09, 2016	N3030916	N3	7:22	15:12	470	1,622		110.0	<	6.2
102	Thursday, March 10, 2016	MN1031016	MN1	6:41	15:35	534	1,842		68.0	<	5.5
103	Friday, March 11, 2016	N3031116	N3	7:10	15:12	482	1,648	<	61.0	<	6.1
104	Monday, March 14, 2016	**N3031416***	N3	6:48	15:37	529	1,833	<	55.0	<	5.5
105	Tuesday, March 15, 2016	**N3031516***	N3	7:15	15:30	495	1,683	<	59.0	<	6.0
106	Wednesday, March 16, 2016	**MN1031616***	MN1	6:45	15:35	530	1,810	<	55.0	<	5.6
107	Thursday, March 17, 2016	N1031716	N1	6:49	15:31	522	1,814	<	55.0	<	5.6
108	Friday, March 18, 2016	N3031816	N3	6:46	15:32	526	1,815		83.0	<	5.6
109	Monday, March 21, 2016	N3032116	N3	7:09	15:32	503	1,720	<	58.0	<	5.9
110	Tuesday, March 22, 2016	MN2032216	MN2	6:42	15:35	533	1,826	<	55.0	<	5.5
111	Wednesday, March 23, 2016	N1032316	N1	7:10	15:28	498	1,711	<	58.0	<	5.9
112	Thursday, March 24, 2016	N3032416	N3	6:45	15:32	527	1,813		63.0	<	5.6
113	Friday, March 25, 2016	N3032516	N3	6:50	15:37	527	1,789		86.0	<	5.7
114	Monday, March 28, 2016	N3032816	N3	6:30	15:45	555	1,912	<	52.0	<	5.3
115	Tuesday, March 29, 2016	N3032916	N3	6:40	16:09	569	1,974		87.0	<	5.1
116	Wednesday, March 30, 2016	MN2033016	MN2	6:40	15:40	540	1,863	<	54.0	<	5.4
117	Thursday, March 31, 2016	MN2033116	MN2	6:37	15:33	536	1,833	<	55.0	<	5.5

Prepared by: NW 12/13/2016
Reviewed by: JLD 12/15/2016

TABLE 1B
Tracking Log
Hexavalent Chromium Air Samples

Study Area 6 North
Honeywell International Inc.
Jersey City, New Jersey

Entry	Date	Sample #	Location	Start	Stop	Minutes	Volume	Analytical Results for Particulate (ug/m^3)		Analytical Results for CrVI (ng/m^3)	
118	Friday, April 01, 2016	N1040116	N1	6:40	15:17	517	1,768	<	57.0	<	5.7
119	Monday, April 04, 2016	N3040416	N3	6:30	15:40	550	1,884	<	53.0	<	5.4
120	Tuesday, April 05, 2016	N3040516	N3	6:41	15:23	522	1,764	<	57.0	<	5.8
121	Wednesday, April 06, 2016	MN1040616	MN1	6:40	15:21	521	1,792	<	56.0	<	5.7
122	Thursday, April 07, 2016	MN1040716	MN1	6:38	15:30	532	1,830	<	55.0	<	5.6
123	Friday, April 08, 2016	MN2040816	MN2	6:35	15:20	525	1,801	<	56.0	<	5.6
124	Monday, April 11, 2016	MN1041116	MN1	6:35	15:13	518	1,772	<	56.0	<	5.7
125	Tuesday, April 12, 2016	**N3041216***	N3	6:45	15:26	521	1,779	<	56.0	<	5.7
126	Wednesday, April 13, 2016	**N3041316***	N3	6:35	15:13	518	1,795	<	56.0	<	5.7
127	Thursday, April 14, 2016	N3041416	N3	6:41	15:13	512	1,759	<	57.0	<	5.8
128	Friday, April 15, 2016	N3041516	N3	6:45	15:14	509	1,741	<	57.0	<	5.9
129	Monday, April 18, 2016	N3041816	N3	6:35	15:15	520	1,797	<	56.0	<	5.7
130	Tuesday, April 19, 2016	N3041916	N3	6:27	15:20	533	1,820	<	55.0	<	5.6
131	Wednesday, April 20, 2016	N3042016	N3	6:30	15:15	525	1,806	<	55.0	<	5.6
132	Thursday, April 21, 2016	MN1042116	MN1	7:10	15:45	515	1,764	<	57.0	<	5.8
133	Friday, April 22, 2016	MN1042216	MN1	6:30	15:15	525	1,809	<	55.0	<	5.6
134	Monday, April 25, 2016	MN1042516	MN1	6:30	15:35	545	1,869	<	54.0	<	5.5
135	Tuesday, April 26, 2016	N3042616	N3	6:30	15:10	520	1,797	<	56.0	<	5.7
136	Wednesday, April 27, 2016	N3042716	N3	6:42	15:17	515	1,769	<	57.0	<	5.8
137	Thursday, April 28, 2016	N3042816	N3	6:42	15:20	518	1,785	<	56.0	<	5.7
138	Friday, April 29, 2016	MN1042916	MN1	6:30	15:20	530	1,823	<	55.0	<	5.6
139	Monday, May 02, 2016	N1050216	N1	6:30	15:37	547	1,887	<	53.0	<	5.4
140	Tuesday, May 03, 2016	MN1050316	MN1	7:20	15:27	487	1,687	<	59.0	<	6.1
141	Wednesday, May 04, 2016	N3050416	N3	7:30	15:10	460	1,585	<	63.0	<	6.4
142	Thursday, May 05, 2016	N3050516	N3	6:37	15:35	538	1,848	<	54.0	<	5.5
143	Friday, May 06, 2016	N3050616	N3	6:40	15:20	520	1,784		130.0	<	5.7
144	Monday, May 09, 2016	N3050916	N3	6:35	15:34	539	1,843	<	54.0	<	5.5
145	Tuesday, May 10, 2016	N3051016	N3	6:40	15:22	522	1,793	<	56.0	<	5.7
146	Wednesday, May 11, 2016	N3051116	N3	6:38	15:35	537	1,853	<	54.0	<	5.5
147	Thursday, May 12, 2016	MN1051216	MN1	6:20	15:37	557	1,919	<	52.0	<	5.3
148	Friday, May 13, 2016	MN1051316	MN1	6:25	15:20	535	1,835	<	54.0	<	5.6
149	Monday, May 16, 2016	N3051616	N3	6:35	15:33	538	1,848	<	54.0	<	5.5
150	Tuesday, May 17, 2016	N1051716	N1	6:30	15:12	522	1,790	<	56.0	<	5.7
151	Wednesday, May 18, 2016	N3051816	N3	6:30	15:10	520	1,781	<	56.0	<	5.7
152	Thursday, May 19, 2016	N1051916	N1	6:25	15:40	555	1,901	<	53.0	<	5.4
153	Friday, May 20, 2016	N3052016	N3	6:35	15:22	527	1,810	<	55.0	<	5.7
154	Monday, May 23, 2016	MN1052316	MN1	6:30	15:35	545	1,869		75.0	<	5.5
155	Tuesday, May 24, 2016	**N3052416***	N3	6:45	15:15	510	1,752	<	57.0	<	5.8
156	Wednesday, May 25, 2016	**MN1052516***	MN1	6:55	15:30	515	1,779		58.0	<	5.8

Prepared by: NW 12/13/2016
Reviewed by: JLD 12/15/2016

TABLE 1B
Tracking Log
Hexavalent Chromium Air Samples

Study Area 6 North
Honeywell International Inc.
Jersey City, New Jersey

Entry	Date	Sample #	Location	Start	Stop	Minutes	Volume	Analytical Results for Particulate (ug/m^3)		Analytical Results for CrVI (ng/m^3)	
157	Thursday, May 26, 2016	MN1052616	MN1	6:55	15:29	514	1,773		69.0	<	5.8
158	Friday, May 27, 2016	MN1052716	MN1	6:34	14:31	477	1,646	<	61.0	<	6.2
159	Tuesday, May 31, 2016	N3053116	N3	5:30	14:20	530	1,813	<	55.0	<	5.7
160	Wednesday, June 01, 2016	N3060116	N3	5:40	14:25	525	1,806	<	55.0	<	5.7
161	Thursday, June 02, 2016	MN1060216	MN1	5:45	14:28	523	1,797	<	56.0	<	5.7
162	Friday, June 03, 2016	MN1060316	MN1	5:30	14:15	525	1,803	<	55.0	<	5.7
163	Monday, June 06, 2016	N3060616	N3	5:40	16:02	622	2,130	<	47.0	<	4.8
164	Tuesday, June 07, 2016	N3060716	N3	5:30	16:12	642	2,199		53.0	<	4.7
165	Wednesday, June 08, 2016	N3060816	N3	7:20	13:00	340	1,173	<	85.0	<	8.8
166	Thursday, June 09, 2016	N3 060916	N3	5:33	16:15	642	2,196		57.0		8.5
167	Friday, June 10, 2016	N3 061016	N3	5:40	16:03	623	2,118		76.0		7.3
168	Monday, June 13, 2016	N3 061316	N3	5:45	16:15	630	2,161		55.0	<	4.7
169	Tuesday, June 14, 2016	N3 061416	N3	5:40	16:05	625	2,128	<	47.0	<	4.8
170	Wednesday, June 15, 2016	N3 061516	N3	6:15	15:55	580	1,981	<	50.0	<	5.2
171	Thursday, June 16, 2016	MN1 061616	MN1	5:35	16:10	635	2,184	<	46.0	<	4.7
172	Friday, June 17, 2016	N2 061716	N2	5:48	16:15	627	2,154	<	46.0	<	4.8
173	Monday, June 20, 2016	MN2 062016	MN2	5:12	16:15	663	2,267		47.0	<	4.5
174	Tuesday, June 21, 2016	**N3 062116***	N3	5:40	16:00	620	2,127	<	47.0	<	4.8
175	Wednesday, June 22, 2016	**N3 062216&**	N3	5:45	16:13	628	2,151		120.0		8.4
176	Thursday, June 23, 2016	N3 062316	N3	5:47	16:13	626	2,197		66.0	<	4.7
177	Friday, June 24, 2016	N3 062416	N3	5:40	16:20	640	2,227	<	45.0	<	4.6
178	Saturday, June 25, 2016	MN3 062516	MN3	5:40	14:11	511	1,778	<	56.0	<	5.8
179	Monday, June 27, 2016	MN1 062716	MN1	6:15	19:02	767	2,665		43.0	<	3.9
180	Tuesday, June 28, 2016	MN1 062816	MN1	5:48	16:13	625	2,166	<	46.0	<	4.8
181	Wednesday, June 29, 2016	N3 062916	N3	5:50	15:40	590	2,044	<	49.0	<	5.0
182	Thursday, June 30, 2016	N3 063016	N3	5:48	16:24	636	2,207	<	45.0	<	4.7
183	Friday, July 01, 2016	MN1 070116	MN1	5:48	14:13	505	1,755	<	57.0	<	5.9
184	Tuesday, July 05, 2016	N3 070516	N3	6:15	15:30	555	1,923	<	52.0	<	5.4
185	Wednesday, July 06, 2016	N3 070616	N3	5:50	16:05	615	2,131	<	47.0	<	4.8
186	Thursday, July 07, 2016	MN2 070716	MN2	5:48	16:15	627	2,176	<	46.0		5.2
187	Friday, July 08, 2016	N1 070816	N1	5:48	15:25	577	2,005	<	50.0	<	5.1
188	Monday, July 11, 2016	N3 071116	N3	5:50	16:05	615	2,137	<	47.0	<	4.8
189	Tuesday, July 12, 2016	N1 071216	N1	5:48	16:10	622	2,155	<	46.0	<	4.8
190	Wednesday, July 13, 2016	MN1 071316	MN1	5:50	16:15	625	2,169	<	46.0	<	4.8
191	Thursday, July 14, 2016	MN2 071416	MN2	5:51	16:15	624	2,172	<	46.0	<	4.7
192	Friday, July 15, 2016	N3 071516	N3	5:47	16:11	624	2,168	<	46.0	<	4.8
193	Saturday, July 16, 2016	N3 071616	N3	5:20	13:20	480	1,668	<	60.0	<	6.2
194	Monday, July 18, 2016	N1 071816	N1	5:43	16:05	622	2,155		49.0	<	4.8
195	Tuesday, July 19, 2016	N3 071916	N3	5:40	16:10	630	2,196		130.0	<	4.7

Prepared by: NW 12/13/2016
Reviewed by: JLD 12/15/2016

TABLE 1B
Tracking Log
Hexavalent Chromium Air Samples

Study Area 6 North
Honeywell International Inc.
Jersey City, New Jersey

Entry	Date	Sample #	Location	Start	Stop	Minutes	Volume	Analytical Results for Particulate (ug/m^3)		Analytical Results for CrVI (ng/m^3)	
196	Wednesday, July 20, 2016	N3 072016	N3	5:30	16:05	635	2,223		55.0	<	4.6
197	Thursday, July 21, 2016	N3 072116	N3	5:35	16:05	630	2,196		110.0	<	4.7
198	Friday, July 22, 2016	N3 072216	N3	5:40	16:07	627	2,179		180.0	<	4.7
199	Monday, July 25, 2016	N1 072516	N1	5:32	16:05	633	2,219	<	45.0	<	4.7
200	Tuesday, July 26, 2016	N3 072616	N3	5:35	16:10	635	2,219	<	45.0	<	4.7
201	Wednesday, July 27, 2016	N3 072716	N3	5:45	16:12	627	2,195	<	50.0	<	4.7
202	Thursday, July 28, 2016	**N1 072816***	N1	5:40	16:05	625	2,178		46.0	<	4.8
203	Friday, July 29, 2016	N3 072916	N3	5:45	14:20	515	1,795	<	56.0	<	5.8
204	Monday, August 01, 2016	N1 080116	N1	5:25	16:10	645	2,238	<	45.0	<	4.6
205	Tuesday, August 02, 2016	N3 080216	N3	5:30	16:10	640	2,237	<	45.0	<	4.6
206	Wednesday, August 03, 2016	N3 080316	N3	5:42	16:05	623	2,187	<	46.0	<	4.7
207	Thursday, August 04, 2016	N3 080416	N3	6:13	16:05	592	2,057	<	49.0	<	5.0
208	Friday, August 05, 2016	N3 080516	N3	6:15	16:10	595	2,074	<	48.0	<	5.0
209	Monday, August 08, 2016	N3 080816	N3	6:10	16:10	600	2,079		79.0		36.0
210	Tuesday, August 09, 2016	N3 080916	N3	5:35	16:15	640	2,234		78.0		9.8
211	Wednesday, August 10, 2016	N1 081016	N1	5:45	17:05	680	2,383	<	42.0	<	4.3
212	Thursday, August 11, 2016	N1 081116	N1	6:13	17:05	652	2,282	<	44.0	<	4.5
213	Friday, August 12, 2016	N1 081216	N1	6:15	17:05	650	2,265	<	44.0	<	4.6
214	Saturday, August 13, 2016	N1 081316	N1	6:15	16:05	590	2,068	<	48.0	<	5.0
215	Monday, August 15, 2016	N3 081516	N3	6:10	14:10	480	1,682		73.0	<	6.1
216	Tuesday, August 16, 2016	N3 081616	N3	6:15	14:00	465	1,623	<	62.0	<	6.4

Notes:	**Action Levels**	
Detectable Results Below Action Level	Hexavalent Chromium	221 ng/m^3
ng/m^3: nanograms per cubic meter	***Validated by 3rd Party**	
ug/m^3: microgram per cubic meter		

Prepared by: NW 12/13/2016
Reviewed by: JLD 12/15/2016

TABLE 1B
Tracking Log
Metals

Study Area 6 North
Honeywell International Inc.
Jersey City, New Jersey

Entry	Date	Sample #	Location	Start	Stop	Minutes	Volume	Analytical Results for As (ng/m^3)		Analytical Results for Pb (ng/m^3)		Analytical Results for V (ng/m^3)		Analytical Results for Zn (ng/m^3)	
1	Friday, October 16, 2015	MN1MET101615	MN1	6:53	15:30	517	1,678	<	30	<	30	<	30	<	300
2	Friday, October 23, 2015	N3MET102315	N3	6:50	15:18	508	1,722	<	29	<	29	<	30	<	290
3	Thursday, October 29, 2015	MN1MET102915	MN1	6:59	15:00	481	1,631	<	31	<	31	<	31	<	310
4	Wednesday, November 04, 2015	MN1MET110415	MN1	7:10	15:25	495	1,681	<	30		40	<	30	<	300
5	Wednesday, November 11, 2015	**N3MET111115***	N3	7:05	15:03	478	1,620	<	31	<	31	<	32	<	310
6	Wednesday, November 18, 2015	MN1MET111815	MN1	7:00	15:21	501	1,698	<	30	<	30	<	30	<	290
7	Tuesday, November 24, 2015	MN2MET112415	MN2	7:03	15:19	496	1,689	<	30	<	30	<	30	<	300
8	Thursday, December 03, 2015	MN2MET120315	MN2	6:50	15:19	509	1,664	<	30	<	30	<	31	<	300
9	Thursday, December 10, 2015	**MN1MET121015***	MN1	6:43	15:30	527	1,747	<	29	<	29	<	29	<	290
10	Wednesday, December 16, 2015	MN1MET121615	MN1	6:58	15:15	497	1,675	<	30	<	30	<	31	<	300
11	Tuesday, December 22, 2015	MN1MET122215	MN1	6:43	15:30	527	1,779	<	29	<	28	<	29	<	280
12	Wednesday, January 06, 2016	N1MET010616	N1	7:00	15:25	505	1,720	<	29	<	29	<	30	<	290
13	Wednesday, January 13, 2016	**N3MET011316***	N3	6:45	15:25	520	1,750	<	29	<	29	<	29	<	290
14	Wednesday, January 20, 2016	N3MET012016	N3	6:41	15:11	510	1,703	<	30	<	29	<	30	<	290
15	Wednesday, January 27, 2016	N3MET012716	N3	6:41	15:13	512	1,738	<	29	<	29	<	30	<	290
16	Wednesday, February 03, 2016	**MN1MET020316***	MN1	7:26	15:19	473	1,632	<	31	<	31	<	31	<	310
17	Wednesday, February 10, 2016	MN2MET021016	MN2	7:20	15:10	470	1,622	<	31	<	31	<	32	<	310
18	Wednesday, February 17, 2016	MN2MET021716	MN2	6:47	15:14	507	1,739	<	29	<	29	<	29	<	290
19	Thursday, February 25, 2016	**MN1MET022516***	MN1	6:42	15:24	522	1,798	<	28	<	28	<	28	<	280
20	Wednesday, March 02, 2016	MN2MET030216	MN2	7:23	15:27	484	1,626	<	31	<	31	<	31	<	310
21	Wednesday, March 09, 2016	MN1MET030916	MN1	7:20	15:12	472	1,612	<	31	<	31	<	32	<	310
22	Thursday, March 17, 2016	N1031716MET	N1	6:49	15:31	522	1,790	<	28		32	<	28	<	280
23	Tuesday, March 22, 2016	MN2MET032216	MN2	6:42	15:35	533	1,826	<	28	<	27	<	28	<	270
24	Wednesday, March 30, 2016	MN2MET033016	MN2	6:40	15:40	540	1,836	<	27	<	27	<	28	<	270
25	Wednesday, April 06, 2016	MN1MET040616	MN1	6:40	15:21	521	1,766	<	28	<	28	<	29	<	280
26	Wednesday, April 13, 2016	N3MET041316	N3	6:35	15:13	518	1,774	<	28	<	28	<	29	<	280
27	Wednesday, April 20, 2016	N3MET042016	N3	6:30	15:15	525	1,798	<	28		44	<	28	<	280
28	Wednesday, April 27, 2016	N3MET042716	N3	6:42	15:17	515	1,766	<	28	<	28	<	29	<	280
29	Wednesday, May 04, 2016	N3MET050416	N3	7:30	15:10	460	1,587	<	32	<	32	<	32	<	320
30	Wednesday, May 11, 2016	N3MET051116	N3	6:38	15:35	537	1,834	<	27	<	27	<	28	<	270
31	Wednesday, May 18, 2016	N3MET051816	N3	6:30	15:10	520	1,794	<	28	<	28	<	28	<	280
32	Wednesday, May 25, 2016	MN1MET052516	MN1	6:55	15:30	515	1,769	<	28	<	28	<	29	<	280
33	Wednesday, June 01, 2016	N3MET060116	N3	5:40	14:25	525	1,801	<	28	<	28	<	28	<	280
34	Wednesday, June 08, 2016	N3MET060816	N3	7:20	13:00	340	1,170	<	43	<	43	<	43	<	430
35	Wednesday, June 15, 2016	N3MET061516	N3	6:15	15:55	580	1,981	<	25	<	25	<	25	<	250
36	Wednesday, June 22, 2016	N3MET062216	N3	5:45	16:13	628	2,151	<	23		140		33		260
37	Wednesday, June 29, 2016	N3MET062916	N3	5:50	15:40	590	2,044	<	24	<	24	<	25	<	240
38	Thursday, June 30, 2016	N3MET 063016	N3	5:47	15:24	577	2,207	<	25	<	25	<	25	<	250
39	Wednesday, July 06, 2016	N3MET 070616	N3	5:50	16:05	615	2,131	<	23		33	<	24	<	230

Prepared by: NW 12/13/2016
Reviewed by: JLD 12/15/2016

TABLE 1B
Tracking Log
Metals

Study Area 6 North
Honeywell International Inc.
Jersey City, New Jersey

Entry	Date	Sample #	Location	Start	Stop	Minutes	Volume	Analytical Results for As (ng/m^3)		Analytical Results for Pb (ng/m^3)		Analytical Results for V (ng/m^3)		Analytical Results for Zn (ng/m^3)	
40	Tuesday, July 12, 2016	N1 MET 071216	N1	5:48	16:10	622	2,155	<	23	<	23	<	23	<	230
41	Thursday, July 21, 2016	N3 MET 072116	N3	5:35	16:05	630	2,196	<	23	<	23	<	23	<	230
42	Thursday, July 28, 2016	N1 MET 072816	N1	5:40	16:05	625	2,178	<	23	<	23	<	23	<	230
43	Tuesday, August 02, 2016	N3 MET 080216	N3	5:30	16:10	640	2,237	<	22	<	22	<	23	<	220
44	Thursday, August 11, 2016	N1 MET 081116	N1	6:13	17:05	652	2,282	<	22	<	22	<	22	<	220
45	Tuesday, August 16, 2016	N3 MET081616	N3	6:15	14:00	465	1,623	<	30	<	30	<	30	<	300

Notes:	Action Levels	
Detectable Results Below Action Level	Arsenic (As)	200 ng/m³
***Validated by 3rd Party**	Lead (Pb)	300 ng/m³
ng/m³: nanograms per cubic meter	Vanadium (V)	300 ng/m³
	Zinc (Zn)	Not Applicable

Prepared by: NW 12/13/2016
Reviewed by: JLD 12/15/2016

TABLE 2A

EA2 Soil Boring and EA-5 Sidewall Soil Samples

Study Area 6 North

Honeywell International Inc.

Jersey City, New Jersey

Client Sample ID				087-EA5-SW-092915		088-SB-190-0201	
Lab Sample ID				JC4911-1R		JC14037-1	
Date Sampled				09/29/2015		02/10/2016	
Sample Purpose		NJ 2012 MOST		REG		REG	
Parameter Name	Units	STRINGENT SRS	NJ 2013 IGW SOIL	CONC	Q	CONC	Q
HEXAVALENT CHROMIUM	mg/kg	20	NC	0.65		0.94	U

Notes:

NJ 2012 MOST STRINGENT SRS- NJDEP Most Stringent Soil Remediation Standards [N.J.A.C. 7:26D; last amended 5/7/2012].

NJ 2013 IGW SOIL – NJDEP Impact to Groundwater Soil Screening Levels [N.J.A.C. 7:26D; last amended November 2013]

NC: No criterion established

Depths reported in feet below ground surface

CONC: Concentration reported in milligrams per kilogram (mg/kg)

Q: Data qualifier assigned by laboratory or data validator

U: Not detected above method detection limit

Prepared by: DP 05/25/2016

Reviewed by: JLD 12/15/2016

TABLE 2B

Site 087 Misc 087-EA5-Asphalt Solid Samples

Study Area 6 North
Honeywell International Inc.
Jersey City, New Jersey

		Location ID			087-EA5-Asphalt	
		Client Sample ID			087-EA5-Asphalt-092815	
		Lab Sample ID			JC4878-1	
		Date Sampled			09/28/2015	
		Sample Purpose			REG	
Parameter Group Name	**Parameter Name**	**Units**	**NJ 2012 MOST STRINGENT SRS**	**NJ 2013 IGW SOIL**	**CONC**	**Q**
SA-6 TAL Metals	ALUMINUM	mg/kg	78000	6000	4110	J
SA-6 TAL Metals	ANTIMONY	mg/kg	31	6	2	UJ
SA-6 TAL Metals	ARSENIC	mg/kg	19	19	**22.8**	
SA-6 TAL Metals	BARIUM	mg/kg	16000	2100	36	
SA-6 TAL Metals	BERYLLIUM	mg/kg	16	0.7	0.24	
SA-6 TAL Metals	CADMIUM	mg/kg	78	2	0.51	U
SA-6 TAL Metals	CALCIUM	mg/kg	NC	NC	5810	
SA-6 TAL Metals	CHROMIUM	mg/kg	NC	NC	5	
SA-6 TAL Metals	COBALT	mg/kg	590	90	7.5	
SA-6 TAL Metals	COPPER	mg/kg	3100	11000	9.6	
SA-6 TAL Metals	IRON	mg/kg	NC	NC	13800	
SA-6 TAL Metals	LEAD	mg/kg	400	90	4.2	
SA-6 TAL Metals	MAGNESIUM	mg/kg	NC	NC	2590	
SA-6 TAL Metals	MANGANESE	mg/kg	11000	65	**198**	
SA-6 TAL Metals	MERCURY	mg/kg	23	0.1	0.034	U
SA-6 TAL Metals	NICKEL	mg/kg	1600	48	10.3	
SA-6 TAL Metals	POTASSIUM	mg/kg	NC	NC	1450	
SA-6 TAL Metals	SELENIUM	mg/kg	390	11	2	U
SA-6 TAL Metals	SILVER	mg/kg	390	1	0.51	U
SA-6 TAL Metals	SODIUM	mg/kg	NC	NC	1000	U
SA-6 TAL Metals	THALLIUM	mg/kg	5	3	1	U
SA-6 TAL Metals	VANADIUM	mg/kg	78	NC	41.1	
SA-6 TAL Metals	ZINC	mg/kg	23000	930	26.4	
SA-6 PCB/Pesticide/Herbicide	AROCLOR-1016	mg/kg	NC	NC	0.073	U
SA-6 PCB/Pesticide/Herbicide	AROCLOR-1221	mg/kg	NC	NC	0.073	U
SA-6 PCB/Pesticide/Herbicide	AROCLOR-1232	mg/kg	NC	NC	0.073	U
SA-6 PCB/Pesticide/Herbicide	AROCLOR-1242	mg/kg	NC	NC	0.073	U
SA-6 PCB/Pesticide/Herbicide	AROCLOR-1248	mg/kg	NC	NC	0.073	U
SA-6 PCB/Pesticide/Herbicide	AROCLOR-1254	mg/kg	NC	NC	0.073	U
SA-6 PCB/Pesticide/Herbicide	AROCLOR-1260	mg/kg	NC	NC	0.073	U
SA-6 PCB/Pesticide/Herbicide	AROCLOR-1262	mg/kg	NC	NC	0.073	U
SA-6 PCB/Pesticide/Herbicide	AROCLOR-1268	mg/kg	NC	NC	0.073	U
	Total PCBs	mg/kg	0.2	0.2	0.073	U
SA-6 General Chemistry	HEXAVALENT CHROMIUM	mg/kg	20	NC	0.41	U
SA-6 General Chemistry	OXIDATION-REDUCTION POTENTIAL	mV	NC	NC	279	
SA-6 General Chemistry	pH	S.U.	NC	NC	8.64	

Notes:
TAL: Target Analyte List; hexavalent chromium results included for comparison (see Table 1 for full results)
NJ 2013 IGW SOIL
NJ 2012 MOST STRINGENT SRS
NC: No criterion established
Bold and underlined concentrations exceed the NJ 2012 MOST STRINGENT SRS
Bold and shaded concentrations exceed the NJ 2013 IGW SOIL or both the NJ 2013 IGW SOIL and the NJ 2012 MOST STRINGENT SRS
Depths reported in feet below ground surface
CONC: Concentration reported in milligrams per kilogram (mg/kg)
J: Estimated concentration
Q: Data qualifier assigned by laboratory or data validator
U: Not detected above method detection limit

Prepared by: DP 05/25/2016
Reviewed by: JLD 12/15/2016

TABLE 2B

Site 087 Misc 087-EA5-Asphalt Solid Samples - TCLP

Study Area 6 North

Honeywell International Inc.

Jersey City, New Jersey

		Client Sample ID		087-EA5-Asphalt-092815	
		Lab Sample ID		JC4878-1A	
		Date Sampled		09/28/2015	
		Sample Purpose		REG	
Parameter Group Name	Parameter Name	Units	RCRA Toxicity Characteristics (40 CFR261.24)	CONC	Q
SA-6 TAL Metals	ARSENIC	mg/L	5	0.5	U
SA-6 TAL Metals	BARIUM	mg/L	100	1	U
SA-6 TAL Metals	CADMIUM	mg/L	1	0.025	U
SA-6 TAL Metals	CHROMIUM	mg/L	5	0.05	U
SA-6 TAL Metals	LEAD	mg/L	5	0.5	U
SA-6 TAL Metals	MERCURY	mg/L	0.2	0.0002	U
SA-6 TAL Metals	SELENIUM	mg/L	1	0.5	U
SA-6 TAL Metals	SILVER	mg/L	5	0.05	U

Notes:

TAL: Target Analyte List; hexavalent chromium results included for comparison (see Table 1 for full results)

RCRA Toxicity Characteristics (40 CFR261.24)

Bold and underlined concentrations exceed the NJ 2012 MOST STRINGENT SRS

Bold and shaded concentrations exceed the NJ 2013 IGW SOIL or both the NJ 2013 IGW SOIL and the NJ 2012 MOST STRINGENT SRS

Depths reported in feet below ground surface

CONC: Concentration reported in milligrams per liter (mg/L)

Q: Data qualifier assigned by laboratory or data validator

U: Not detected above method detection limit

Prepared by: DP 05/25/2016

Reviewed by: JLD 12/15/2016

TABLE 3A
CWTP Effluent Results - VOCs
Study Area 6 North
Honeywell International Inc.
Jersey City, New Jersey

	SAMPLE LOCATION		087-TW-01		087-TW-01		087-TW-01		087-TW-01		087-TW-01		087-TW-01		087-TW-01		087-TW-01	
	FIELD SAMPLE ID		087-TW-01-031016		087-TW-01-040816		087-TW-01-050616		087-TW-01-060816		087-TW-01-070716		087-TW-01-080116		087-TW-01-090816		087-TW-01-100516	
	SAMPLING DATE		03/10/2016		04/08/2016		05/06/2016		06/08/2016		07/07/2016		08/01/2016		09/08/2016		10/05/2016	
	LAB SAMPLE ID		JC15961-1		JC17922-1		JC19783-1		JC21786-1		JC23594-1		JC24999-1		JC27228-1		JC29071-1	
	Sample Purpose		REG		REG		REG		REG		REG		REG		REG		REG	
	Filtered	SA-6 CWTP Effluent	N		N		N		N		N		N		N		N	
PARAMETER	Report Units	Criteria	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q
1,1,1-TRICHLOROETHANE	ug/l	NC	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,1,2,2-TETRACHLOROETHANE	ug/l	NC	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,1,2-TRICHLOROETHANE	ug/l	NC	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,1-DICHLOROETHANE	ug/l	NC	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,1-DICHLOROETHENE	ug/l	NC	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,2-DICHLOROBENZENE	ug/l	NC	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,2-DICHLOROETHANE	ug/l	NC	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,2-DICHLOROPROPANE	ug/l	NC	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,3-DICHLOROBENZENE	ug/l	NC	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,4-DICHLOROBENZENE	ug/l	NC	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
2-CHLOROETHYL VINYL ETHER	ug/l	NC	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
ACROLEIN	ug/l	NC	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
ACRYLONITRILE	ug/l	NC	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
BENZENE	ug/l	NC	0.48	J	0.24	J	0.31	J	0.18	J	0.16	J	1.0	U	1.0	U	1.0	U
BROMODICHLOROMETHANE	ug/l	NC	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
BROMOFORM	ug/l	NC	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
BROMOMETHANE	ug/l	NC	1.0	U	1.0	U	1.0	U	1.0	UJ	1.0	U	1.0	U	1.0	U	1.0	U
CARBON TETRACHLORIDE	ug/l	NC	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
CHLOROBENZENE	ug/l	NC	0.22	J	0.14	J	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
CHLOROETHANE	ug/l	NC	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
CHLOROFORM	ug/l	NC	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
CHLOROMETHANE	ug/l	NC	1.0	U	1.0	U	1.0	U	1.0	UJ	1.0	U	1.0	U	1.0	U	1.0	U
CIS-1,2-DICHLOROETHENE	ug/l	NC	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
CIS-1,3-DICHLOROPROPENE	ug/l	NC	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Dibromochloromethane	ug/l	NC	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
DICHLORODIFLUOROMETHANE	ug/l	NC	2.0	U	2.0	U	2.0	U	2.0	UJ	2.0	U	2.0	U	2.0	U	2.0	U
ETHYLBENZENE	ug/l	NC	1.0	U	0.39	J	0.22	J	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
METHYLENE CHLORIDE	ug/l	NC	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
TETRACHLOROETHENE	ug/l	NC	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
TOLUENE	ug/l	NC	0.32	J	0.50	J	0.36	J	0.22	J	0.23	J	1.0	U	1.0	U	1.0	U
TRANS-1,2-DICHLOROETHENE	ug/l	NC	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
TRANS-1,3-DICHLOROPROPENE	ug/l	NC	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
TRICHLOROETHENE	ug/l	NC	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
TRICHLOROFLUOROMETHANE	ug/l	NC	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
VINYL CHLORIDE	ug/l	NC	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
XYLENES, TOTAL	ug/l	NC	0.42	J	2.8		1.4		1.0	U	0.4	J	1.0	U	1.0	U	1.0	U
Total VOCs	ug/l	2130	1.44		4.07		2.3		0.4		0.8		0.0		0.0		0.0	

Notes:

SA-6 CWTP Effluent Criteria is the discharge limitation criteria from Sewer Use Permit #31630019

NC: No criterion established

CONC: Concentration reported in micrograms per liter (ug/l)

J: Estimated concentration

Q: Data qualifier assigned by laboratory or data validator

U: Not detected above method detection limit

Prepared by: DMP 12/14/2016
Checked by: JLD 12/21/2016

TABLE 3B
CWTP Effluent Results - Metals
Study Area 6 North
Honeywell International Inc.
Jersey City, New Jersey

PARAMETER	Report Units	SA-6 CWTP Effluent Criteria	SAMPLE LOCATION / FIELD SAMPLE ID / SAMPLING DATE / LAB SAMPLE ID / Sample Purpose / Filtered	087-TW-01 087-TW-01-031016C 03/10/2016 JC15961-2 REG N		087-TW-01 087-TW-01-040816C 04/08/2016 JC17922-2 REG N		087-TW-01 087-TW-01-050616C 05/06/2016 JC19783-2 REG N		087-TW-01 087-TW-01-060816C 06/08/2016 JC21786-2 REG N		087-TW-01 087-TW-01-070716C 07/07/2016 JC23594-2 REG N		087-TW-01 087-TW-01-080116C 08/01/2016 JC24999-2 REG N		087-TW-01 087-TW-01-090816C 09/08/2016 JC27228-2 REG N		087-TW-01 087-TW-01-100516C 10/05/2016 JC29071-2 REG N	
				CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q
CHROMIUM	mg/L	NC		7.83		6.19		8.7		5.27		6.14		3.68		1.68		3.07	
COPPER	mg/L	3.6		0.0105		0.0202		0.0128		0.0106		0.01	U	0.0155		0.01	U	0.01	U
LEAD	mg/L	1		0.0064		0.0087		0.0110		0.0045		0.0030	U	0.0231		0.0052		0.0030	U
MERCURY	mg/L	0.08		0.00020	U	0.00020	U	0.00020	U	0.00020	U	0.00020	U	0.00020	U	0.00020	U	0.00020	U
NICKEL	mg/L	3.9		0.0178		0.0167		0.0187		0.0130		0.0181		0.01	U	0.0172		0.0153	J
ZINC	mg/L	4.2		0.771		0.196		0.02	U	0.0568		0.0288		0.151		0.0214		0.0307	

Notes:

SA-6 CWTP Effluent Criteria is the discharge limitation criteria from Sewer Use Permit #31630019

NC: No criterion established

CONC: Concentration reported in milligrams per liter (mg/L)

J: Estimated concentration

Q: Data qualifier assigned by laboratory or data validator

U: Not detected above method detection limit

Prepared by: DMP 12/14/2016
Checked by: NAW 05/08/2017

TABLE 3C
CWTP Effluent Results - General Chemistry
Study Area 6 North
Honeywell International Inc.
Jersey City, New Jersey

SAMPLE LOCATION			087-TW-01		087-TW-01		087-TW-01		087-TW-01		087-TW-01		087-TW-01		087-TW-01		087-TW-01		087-TW-01		087-TW-01		087-TW-01		087-TW-01		087-TW-01	
FIELD SAMPLE ID			087-TW-01-031016		087-TW-01-031016C		087-TW-01-040816		087-TW-01-040816C		087-TW-01-050616		087-TW-01-050616C		087-TW-01-060816		087-TW-01-060816C		087-TW-01-070716		087-TW-01-070716C		087-TW-01-080116		087-TW-01-080116C		087-TW-01-090816		087-TW-01-090816C		087-TW-01-100516		087-TW-01-100516C	
SAMPLING DATE			03/10/2016		03/10/2016		04/08/2016		04/08/2016		05/06/2016		05/06/2016		06/08/2016		06/08/2016		07/07/2016		07/07/2016		08/01/2016		08/01/2016		09/08/2016		09/08/2016		**10/05/2016**		**10/05/2016**	
LAB SAMPLE ID			JC15961-1		JC15961-2		JC17922-1		JC17922-2		JC19783-1		JC19783-2		JC21786-1		JC21786-2		JC23594-1		JC23594-2		JC24999-1		JC24999-2		JC27228-1		JC27228-2		**JC29071-1**		**JC29071-2**	
Sample Purpose			REG		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG		**REG**		**REG**	
Filtered			N		N		N		N		N		N		N		N		N		N		N		N		N		N		**N**		N	
PARAMETER	Report Units	SA-6 CWTP Effluent Criteria	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q
BIOCHEMICAL OXYGEN DEMAND, FIVE DAY	mg/L	NC			13.7				6.9				3.7				3.4	U			5.0	U			5.0	U			4.1				15.0	
HEXANE EXT MATERIAL SILICA GEL TREATED	mg/L	100	5.1	U			5.1	UJ			5.1	U			5.0	U			5.0	U			5.0	UJ			5.0	U			5.1	U		
pH	S.U.	5-10.5	6.15				8.84				9.12				8.86				8.16				7.43				8.66				9.05			

Notes:

SA-6 CWTP Effluent Criteria is the discharge limitation criteria from Sewer Use Permit #31630019

NC: No criterion established

CONC: Concentration reported in milligrams per liter (mg/L)

J: Estimated concentration

Q: Data qualifier assigned by laboratory or data validator

U: Not detected above method detection limit

Prepared by: DMP 12/14/2016
Checked by: JLD 12/21/2016

TABLE 4

Groundwater Elevation Monitoring

Study Area 6 North

Honeywell International Inc.

Jersey City, New Jersey

	SA-6 North Cap Contingent Groundwater System Water Elevations			
	Access MH#1 STA 1+50	Extraction Pump Station #1	Extraction Pump Station #2	Access MH#2 STA 18+00
10/1/2015	Temp. Unavailable	4.60	2.74	2.81
10/28/2015	Temp. Unavailable	4.65	2.97	3.06
12/1/2015	Temp. Unavailable	4.58	2.05	2.22
12/30/2015	Temp. Unavailable	5.40	1.54	4.34
2/1/2016	Temp. Unavailable	7.73	2.45	6.24
3/1/2016	0.80	0.90	0.60	3.34
4/1/2016	1.00	1.70	0.72	2.19
5/2/2016	0.79	1.30	1.09	2.00
6/1/2016	1.10	1.21	1.43	2.14
6/28/2016	1.25	1.45	1.80	2.27
7/27/2016	1.25	1.45	1.80	2.27
8/29/2016	2.63	2.77	2.89	3.02
9/29/2016	1.54	1.53	3.25	3.32
11/4/2016	2.25	2.47	3.32	3.19
12/1/2016	2.64	2.86	3.46	3.36
1/17/2017	Temp. Unavailable	3.16	3.51	3.36

	SA-6 North Monitoring Wells								
	087-MW-132	087-MW-133	087-MW-134	115-W6-SO	115-W1-SO	115-E4-SO	115-E5-SO	088-MW-112	088-MW-111
10/1/2015	5.16	5.08	5.07	5.76	NR	3.24	3.65	NR	NR
10/28/2015	5.48	5.52	5.56	6.06	6.92	3.94	4.05	NR	NR
12/1/2015	5.26	5.23	5.37	5.56	6.22	3.64	3.85	2.18	2.25
12/30/2015	5.75	5.80	5.83	6.85	7.55	4.93	4.75	Temp. Unavailable	Temp. Unavailable
2/1/2016	5.94	Temp. Unavailable	6.06	7.52	7.72	6.18	Temp. Unavailable	2.73	3.02
3/1/2016	6.23	3.60	6.28	3.96	5.12	4.94	5.37	3.63	3.72
4/1/2016	5.89	5.89	5.88	2.51	3.52	2.69	4.27	3.12	3.17
5/2/2016	5.71	5.74	5.70	2.10	Temp. Unavailable	2.63	4.10	2.89	3.02
6/1/2016	5.60	5.70	5.68	1.66	2.48	2.55	3.02	2.79	2.89
6/28/2016	5.72	5.74	5.70	1.73	2.35	2.42	3.23	2.60	2.69
7/27/2016	5.98	6.22	6.05	2.00	2.34	2.62	3.25	2.93	3.00
8/29/2016	5.40	5.43	5.46	2.65	2.77	3.16	2.56	3.05	3.10
9/29/2016	5.16	5.18	5.22	1.71	2.99	3.27	3.32	2.80	2.90
11/4/2016	5.63	5.71	5.71	2.43	2.39	3.37	3.29	2.74	Abandoned
12/1/2016	6.44	6.71	6.57	2.84	2.47	3.54	4.13	2.96	Abandoned
1/17/2017	6.71	6.78	6.80	3.16	2.75	3.60	4.18	3.42	Abandoned

Prepared by: JLD 02/09/2017
Reviewed by: DEN 02/09/2017

TABLE 4

Groundwater Elevation Monitoring

Study Area 6 North

Honeywell International Inc.

Jersey City, New Jersey

	SA-6 North Piezometers									
	087-PZ-1	087-PZ-2	087-PZ-3	087-PZ-4	087-PZ-5	087-PZ-6	087-PZ-7	087-PZ-8	087-PZ-9	087-PZ-10
10/1/2015	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
10/28/2015	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
12/1/2015	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
12/30/2015	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
2/1/2016	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
3/1/2016	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
4/1/2016	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
5/2/2016	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
6/1/2016	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
6/28/2016	3.47	2.66	2.73	3.05	Temp. Unavailable	Temp. Unavailable	5.48	1.44	2.12	1.72
7/27/2016	3.54	2.68	2.85	3.22	Temp. Unavailable	Temp. Unavailable	5.63	1.52	2.11	1.86
8/29/2016	3.35	3.21	3.11	3.18	Temp. Unavailable	Temp. Unavailable	5.22	2.50	2.50	2.58
9/29/2016	3.21	3.21	2.80	3.27	Temp. Unavailable	Temp. Unavailable	4.96	1.50	3.03	1.48
11/4/2016	3.53	3.31	2.76	3.38	3.70	3.25	5.36	2.32	2.51	2.37
12/1/2016	4.96	3.27	3.00	3.46	5.82	3.39	6.39	2.64	2.77	2.99
1/17/2017	4.59	3.60	3.45	3.51	5.30	3.50	6.41	2.97	2.07	3.18

Notes:

NI : Not Installed at time of measurement

Temp. Unavailable: Could not be accessed

NR: Not Recorded

Elev.: Groundwater Elevation, feet

Prepared by: JLD 02/09/2017

Reviewed by: DEN 02/09/2017

TABLE 5

SHALLOW MONITORING WELL LIST

Study Area 6 North
Honeywell International Inc.
Jersey City, New Jersey

Study Area	Site	Well	Easting	Northing	Permit Number	Well Depth (feet below TOC)	Well Diam (in)	Well Construction
SA-7	115	115-E4-SO	603480.0	685090.0	2600076844	13.45	2.0	PVC
SA-7	115	115-E5-SO	603099.3	685381.4	2600078862	19.80	2.0	PVC
SA-7	115	115-W1-SO	602463.9	685748.8	-	24.66	2.0	PVC
SA-7	115	115-W6-SO	602121.0	685951.0	-	18.15	2.0	PVC
SA-6 North	87	087-PZ-1	603719.0	685108.0	E201606638	10.81	4.0	SS
SA-6 North	87	087-PZ-2	603710.2	685111.3	E201606639	15.21	4.0	SS
SA-6 North	87	087-PZ-3	603365.3	685484.2	E201606641	16.87	4.0	SS
SA-6 North	87	087-PZ-4	603361.6	685478.8	E201606642	20.26	4.0	SS
SA-6 North	87	087-PZ-5	602959.3	685779.8	E201606645	23.07	4.0	SS
SA-6 North	87	087-PZ-6	602956.0	685773.1	E201606646	25.25	4.0	SS
SA-6 North	87	087-PZ-7	602442.3	685973.9	E201606650	25.19	4.0	SS
SA-6 North	87	087-PZ-8	602430.4	685947.7	E201606651	20.27	4.0	SS
SA-6 North	87	087-PZ-9	602087.3	686064.8	E201606647	20.04	4.0	SS
SA-6 North	87	087-PZ-10	602101.8	686066.4	E201606648	20.03	4.0	SS

Notes:
1. New Jersey State Plane Coordinates relative to North American Datum (NAD) of 1983.
2. Diam (in) = Well diameter in inches
3. PVC = Polyvinyl Chloride
4. SS = Stainless Steel
5. SA-7 wells included are within the SA-6 North Open Space AOC.
6. Well depth is feet below top of casing (April 2016).
7. NM = not measured.

Prepared by JLD 01/19/2017
Reviewed by NW 01/19/2017

TABLE 6A

Stockpile Tracking Table

Study Area 6 North

Honeywell International Inc.

Jersey City, New Jersey

Excavated Material Location (Grid No.)	Material Designation (<20 or >1,000)	Stockpile ID	Estimated Stockpile Volume (CY)	Sample ID	Sample Date	Hexavalent Chromium Result (mg/kg)	FINAL PLACEMENT OF MATERIAL*		
							<20 Backfill in Excavation (Excavation Cell)	>20 - <240 Placed Under Cap	>240 Shipped Off Site as Haz or Non Haz
EA8	<20	087-EA8-20-a,b	1500	087-EA8-20-a1	6/24/2015	<2.3	Yes (Placed in EA7)		
				087-EA8-20-a2	6/24/2015	<2.3	Yes (Placed in EA7)		
				087-EA8-20-a3	6/24/2015	<1.9	Yes (Placed in EA7)		
				087-EA8-20-a4	6/24/2015	<1.9	Yes (Placed in EA7)		
				087-EA8-20-b1	6/24/2015	<2.1	Yes (Placed in EA7)		
				087-EA8-20-b2	6/24/2015	0.78	Yes (Placed in EA7)		
				087-EA8-20-b3	6/24/2015	2.10	Yes (Placed in EA7)		
				087-EA8-20-b4	6/24/2015	<2.0	Yes (Placed in EA7)		
EA8	<20	087-EA8-20-c (bermed/trench material)	250	087-EA8-20-c1	6/24/2015	<1.9	Yes (Placed in EA8)		
				087-EA8-20-c2	6/24/2015	<2.1	Yes (Placed in EA8)		
				087-EA8-20-c3	6/24/2015	<2.1	Yes (Placed in EA8)		
				087-EA8-20-c4	6/24/2015	<1.9	Yes (Placed in EA8)		
EA7	<20	087-EA7-20-a (bermed/trench material)	900	087-EA7-20-a1	6/26/2015	<1.8	Yes (Placed in EA7)		
				087-EA7-20-a2	6/26/2015	<1.4	Yes (Placed in EA7)		
				087-EA7-20-a3	6/26/2015	<1.4	Yes (Placed in EA7)		
				087-EA7-20-a4	6/26/2015	5.5	Yes (Placed in EA7)		
EA7	<20	087-EA7-20-b West Pile	600	087-EA7-20-b1	7/14/2015	5.2	Yes (Placed in EA7)		
				087-EA7-20-b2	7/14/2015	2.6	Yes (Placed in EA7)		
				087-EA7-20-b3	7/14/2015	4.3	Yes (Placed in EA7)		
				087-EA7-20-b4	7/14/2015	2.8	Yes (Placed in EA7)		
EA7	<20	087-EA7-20-c East Pile	200	087-EA7-20-c1	7/14/2015	<.47	Yes (Placed in EA7)		
				087-EA7-20-c2	7/14/2015	<1.6	Yes (Placed in EA7)		
3S cap material	<240	124-3S-EX-a,b,c,d (Excess 3S material)	3500	124-3S-EX-a1	8/10/2015	51.6		Yes	
				124-3S-EX-a2	8/10/2015	18.6	Yes (Placed in EA2/EA3)		
				124-3S-EX-a3	8/10/2015	37.1		Yes	
				124-3S-EX-a4	8/10/2015	18.9	Yes (Placed in EA2/EA3)		
				124-3S-EX-b1	8/10/2015	24.8		Yes	
				124-3S-EX-b2	8/10/2015	49.3		Yes	
				124-3S-EX-b3	8/10/2015	37.9		Yes	
				124-3S-EX-b4	8/10/2015	40.4		Yes	
				124-3S-EX-c1	8/10/2015	24.7		Yes	
				124-3S-EX-c2	8/10/2015	36.3		Yes	
				124-3S-EX-c3	8/10/2015	46.7		Yes	
				124-3S-EX-c4	8/10/2015	8.1	Yes (Placed in EA2/EA3)		
				124-3S-EX-d1	8/10/2015	25.6		Yes	
				124-3S-EX-d2	8/10/2015	32.1		Yes	
				124-3S-EX-d3	8/10/2015	74.6		Yes	
				124-3S-EX-d4	8/10/2015	34.7		Yes	
EA4	<20	087-EA4-20-a (bermed/trench material)	225	087-EA4-20-a1	9/11/2015	2	Yes (Placed in EA-4)		
				087-EA4-20-a2	9/11/2015	<1.4	Yes (Placed in EA-4)		
				087-EA4-20-a3	9/11/2015	<1.8	Yes (Placed in EA-4)		
				087-EA4-20-a4	9/11/2015	5.0	Yes (Placed in EA-4)		
EA-5	<20	087-EA5-20-a1:b4 (benched of A material)	1300	087-EA5-20-a1	9/11/2015	0.7	Yes (Placed in EA-5)		
				087-EA5-20-a2	9/11/2015	<1.7	Yes (Placed in EA-5)		
				087-EA5-20-a3	9/11/2015	<.46	Yes (Placed in EA-5)		
				087-EA5-20-a4	9/11/2015	<1.1	Yes (Placed in EA-5)		
				087-EA5-20-b1	9/11/2015	<2.0	Yes (Placed in EA-5)		
				087-EA5-20-b2	9/11/2015	6.8	Yes (Placed in EA-5)		
				087-EA5-20-b3	9/11/2015	8.3	Yes (Placed in EA-5)		
				087-EA5-20-b4	9/11/2015	<.55	Yes (Placed in EA-5)		

Prepared by JD 05/01/2016
Reviewed by NW 05/15/2016

TABLE 6A

Stockpile Tracking Table

Study Area 6 North

Honeywell International Inc.

Jersey City, New Jersey

Excavated Material Location (Grid No.)	Material Designation (<20 or >1,000)	Stockpile ID	Estimated Stockpile Volume (CY)	Sample ID	Sample Date	Hexavalent Chromium Result (mg/kg)	FINAL PLACEMENT OF MATERIAL*		
							<20 Backfill in Excavation (Excavation Cell)	>20 - <240 Placed Under Cap	>240 Shipped Off Site as Haz or Non Haz
EA-5	<20	087-EA5-20-c1:d4 (stockpile of A material)	2000	087-EA5-20-c1	9/11/2015	<1.8	Yes (Placed in EA2/EA3)		
				087-EA5-20-c2	9/11/2015	<1.9	Yes (Placed in EA2/EA3)		
				087-EA5-20-c3	9/11/2015	<.56	Yes (Placed in EA2/EA3)		
				087-EA5-20-c4	9/11/2015	<.60	Yes (Placed in EA2/EA3)		
				087-EA5-20-d1	9/11/2015	<.56	Yes (Placed in EA2/EA3)		
				087-EA5-20-d2	9/11/2015	<.44	Yes (Placed in EA2/EA3)		
				087-EA5-20-d3	9/11/2015	<.5	Yes (Placed in EA2/EA3)		
				087-EA5-20-d4	9/11/2015	9.6	Yes (Placed in EA2/EA3)		
EA-5 UST	WC	087-EA5-UST-WC	50	087-EA5-UST-WC	9/25/2015	<1.9			Yes
3S cap material	<240	124-3S-EX2-a	780	124-3S-EX2-a1	9/28/2015	50		Yes	
				124-3S-EX2-a2	9/28/2015	48.5		Yes	
				124-3S-EX2-a3	9/28/2015	82.3		Yes	
				124-3S-EX2-a4	9/28/2015	785			Yes
Material from under 3S asphalt roadway	<240	124-3S-Roadway-a	525	124-3S-Roadway-a1	9/28/2015	327			Yes
				124-3S-Roadway-a2	9/28/2015	2100			Yes
				124-3S-Roadway-a3	9/28/2015	1970			Yes
				124-3S-Roadway-a4	9/28/2015	5900			Yes
EA-5 Asphalt	<240	087-EA5-Asphalt	100	087-EA5-Asphalt-092815	9/28/2015	<.41		Yes	
Utility material (waterline break; excavated material)	<20	087-EA2-waterline	50	087-EA2-waterline-092815	9/28/2015	13.5	Yes (Placed in EA2/EA3)		
3S cap material	<240	124-3S-EX3-a	1000	124-3S-EX3-a1	10/21/2015	3120			Yes
				124-3S-EX3-a2	10/21/2015	6820			Yes
				124-3S-EX3-a3	10/21/2015	5690			Yes
				124-3S-EX3-a4	10/21/2015	4300			Yes
1N (2 foot cut material)	<20	087-1N-20-a, b, c	3000	087-1N-20-a1	10/28/2015	<.5	Yes (Placed in SA-6 South)		
				087-1N-20-a2	10/28/2015	2.1	Yes (Placed in SA-6 South)		
				087-1N-20-a3	10/28/2015	<.48	Yes (Placed in SA-6 South)		
				087-1N-20-a4	10/28/2015	5.4	Yes (Placed in SA-6 South)		
				087-1N-20-b1	10/28/2015	1.0	Yes (Placed in SA-6 South)		
				087-1N-20-b2	10/28/2015	<2.0	Yes (Placed in SA-6 South)		
				087-1N-20-b3	10/28/2015	0.65	Yes (Placed in SA-6 South)		
				087-1N-20-b4	10/28/2015	<1.9	Yes (Placed in SA-6 South)		
				087-1N-20-c1	10/28/2015	<2.0	Yes (Placed in SA-6 South)		
				087-1N-20-c2	10/28/2015	<1.8	Yes (Placed in SA-6 South)		
				087-1N-20-c3	10/28/2015	<1.8	Yes (Placed in SA-6 South)		
				087-1N-20-c4	10/28/2015	<.51	Yes (Placed in SA-6 South)		

Prepared by JD 05/01/2016
Reviewed by NW 05/15/2016

TABLE 6A

Stockpile Tracking Table

Study Area 6 North

Honeywell International Inc.

Jersey City, New Jersey

Excavated Material Location (Grid No.)	Material Designation (<20 or >1,000)	Stockpile ID	Estimated Stockpile Volume (CY)	Sample ID	Sample Date	Hexavalent Chromium Result (mg/kg)	FINAL PLACEMENT OF MATERIAL*		
							<20 Backfill in Excavation (Excavation Cell)	>20 - <240 Placed Under Cap	>240 Shipped Off Site as Haz or Non Haz
1 N (2 foot cut material)	<20	087-1N-20-d1:n4	11,160	087-1N-20-d1	11/17/2015	<1.4	Yes (Placed in SA-6 South)		
				087-1N-20-d2	11/17/2015	9.5	Yes (Placed in SA-6 South)		
				087-1N-20-d3	11/17/2015	19.9	Yes (Placed in SA-6 South)		
				087-1N-20-d4	11/17/2015	<1.5	Yes (Placed in SA-6 South)		
				087-1N-20-e1	11/17/2015	<1.3	Yes (Placed in SA-6 South)		
				087-1N-20-e2	11/17/2015	<1.4	Yes (Placed in SA-6 South)		
				087-1N-20-e3	11/17/2015	<1.4	Yes (Placed in SA-6 South)		
				087-1N-20-e4	11/17/2015	<1.4	Yes (Placed in SA-6 South)		
				087-1N-20-f1	11/17/2015	<1.5	Yes (Placed in SA-6 South)		
				087-1N-20-f2	11/17/2015	<.93	Yes (Placed in SA-6 South)		
				087-1N-20-f3	11/17/2015	<.90	Yes (Placed in SA-6 South)		
				087-1N-20-f4	11/17/2015	<1.5	Yes (Placed in SA-6 South)		
				087-1N-20-g1	11/17/2015	<.95	Yes (Placed in SA-6 South)		
				087-1N-20-g2	11/17/2015	<.86	Yes (Placed in SA-6 South)		
				087-1N-20-g3	11/17/2015	<.96	Yes (Placed in SA-6 South)		
				087-1N-20-g4	11/17/2015	<1.3	Yes (Placed in SA-6 South)		
				087-1N-20-h1	11/17/2015	1.9	Yes (Placed in EA2/EA3)		
				087-1N-20-h2	11/17/2015	<.92	Yes (Placed in EA2/EA3)		
				087-1N-20-h3	11/17/2015	<1.4	Yes (Placed in EA2/EA3)		
				087-1N-20-h4	11/17/2015	<.92	Yes (Placed in EA2/EA3)		
				087-1N-20-i1	11/17/2015	<1.3	Yes (Placed in EA2/EA3)		
				087-1N-20-i2	11/17/2015	<2.0	Yes (Placed in EA2/EA3)		
				087-1N-20-i3	11/17/2015	<1.9	Yes (Placed in EA2/EA3)		
				087-1N-20-i4	11/17/2015	<2.1	Yes (Placed in EA2/EA3)		
				087-1N-20-j1	11/17/2015	<1.8	Yes (Placed in EA2/EA3)		
				087-1N-20-j2	11/17/2015	<1.4	Yes (Placed in EA2/EA3)		
				087-1N-20-j3	11/17/2015	<1.9	Yes (Placed in EA2/EA3)		
				087-1N-20-j4	11/17/2015	<1.8	Yes (Placed in EA2/EA3)		
				087-1N-20-k1	11/17/2015	<1.6	Yes (Placed in EA2/EA3)		
				087-1N-20-k2	11/17/2015	<2.0	Yes (Placed in EA2/EA3)		
				087-1N-20-k3	11/17/2015	<2.1	Yes (Placed in EA2/EA3)		
				087-1N-20-k4	11/17/2015	<1.4	Yes (Placed in EA2/EA3)		
				087-1N-20-l1	11/17/2015	<1.4	Yes (Placed in EA2/EA3)		
				087-1N-20-l2	11/17/2015	<1.9	Yes (Placed in EA2/EA3)		
				087-1N-20-l3	11/17/2015	<2.0	Yes (Placed in EA2/EA3)		
				087-1N-20-l4	11/17/2015	<2.1	Yes (Placed in EA2/EA3)		
				087-1N-20-m1	11/17/2015	<1.9	Yes (Placed in EA2/EA3)		
				087-1N-20-m2	11/17/2015	<1.9	Yes (Placed in EA2/EA3)		
				087-1N-20-m3	11/17/2015	<1.4	Yes (Placed in EA2/EA3)		
				087-1N-20-m4	11/17/2015	<1.4	Yes (Placed in EA2/EA3)		
				087-1N-20-n1	11/17/2015	<1.4	Yes (Placed in EA2/EA3)		
				087-1N-20-n2	11/17/2015	<1.4	Yes (Placed in EA2/EA3)		
				087-1N-20-n3	11/17/2015	<1.3	Yes (Placed in EA2/EA3)		
				087-1N-20-n4	11/17/2015	<1.5	Yes (Placed in EA2/EA3)		
EA2/EA3	<20	087-EA2-20-a (bermed/trench material)	400	087-EA2-20-a1	12/11/2015	<1.8	Yes (Placed in EA2/EA3)		
				087-EA2-20-a2	12/11/2015	6.7	Yes (Placed in EA2/EA3)		
				087-EA2-20-a3	12/11/2015	<1.9	Yes (Placed in EA2/EA3)		
				087-EA2-20-a4	12/11/2015	3.8	Yes (Placed in EA2/EA3)		

Prepared by JD 05/01/2016
Reviewed by NW 05/15/2016

TABLE 6A

Stockpile Tracking Table

Study Area 6 North
Honeywell International Inc.
Jersey City, New Jersey

Excavated Material Location (Grid No.)	Material Designation (<20 or >1,000)	Stockpile ID	Estimated Stockpile Volume (CY)	Sample ID	Sample Date	Hexavalent Chromium Result (mg/kg)	FINAL PLACEMENT OF MATERIAL*		
							<20 Backfill in Excavation (Excavation Cell)	>20 - <240 Placed Under Cap	>240 Shipped Off Site as Haz or Non Haz
EA2/EA3	<20	087-EA2-20-b1:g1 (A material)	5200 cy	087-EA2-20-b1	12/30/2015	3.0	Yes (Placed in EA2/EA3)		
				087-EA2-20-b2	12/30/2015	3.0	Yes (Placed in EA2/EA3)		
				087-EA2-20-b3	12/30/2015	0.55	Yes (Placed in EA2/EA3)		
				087-EA2-20-b4	12/30/2015	0.97	Yes (Placed in EA2/EA3)		
				087-EA2-20-c1	12/30/2015	4.3	Yes (Placed in EA2/EA3)		
				087-EA2-20-c2	12/30/2015	1.5	Yes (Placed in EA2/EA3)		
				087-EA2-20-c3	12/30/2015	1.6	Yes (Placed in EA2/EA3)		
				087-EA2-20-c4	12/30/2015	0.53	Yes (Placed in EA2/EA3)		
				087-EA2-20-d1	12/30/2015	0.60	Yes (Placed in EA2/EA3)		
				087-EA2-20-d2	12/30/2015	15.9	Yes (Placed in EA2/EA3)		
				087-EA2-20-d3	12/30/2015	5.4	Yes (Placed in EA2/EA3)		
				087-EA2-20-d4	12/30/2015	1.7	Yes (Placed in EA2/EA3)		
				087-EA2-20-e1	12/30/2015	0.53	Yes (Placed in EA2/EA3)		
				087-EA2-20-e2	12/30/2015	12.3	Yes (Placed in EA2/EA3)		
				087-EA2-20-e3	12/30/2015	3.1	Yes (Placed in EA2/EA3)		
				087-EA2-20-e4	12/30/2015	0.57	Yes (Placed in EA2/EA3)		
				087-EA2-20-f1	12/30/2015	0.52	Yes (Placed in EA2/EA3)		
				087-EA2-20-f2	12/30/2015	0.53	Yes (Placed in EA2/EA3)		
				087-EA2-20-f3	12/30/2015	0.57	Yes (Placed in EA2/EA3)		
				087-EA2-20-f4	12/30/2015	0.54	Yes (Placed in EA2/EA3)		
				087-EA2-20-g1	12/30/2015	0.53	Yes (Placed in EA2/EA3)		
EA2/EA3	<20	087-EA2-20-h1 (overburden)	150 cy	087-EA2-20-h1	12/30/2015	0.7	Yes (Placed in EA2/EA3)		
EA2/EA3	<20	087-EA2-20-i1 (overburden)	200 cy	087-EA2-20-i1	12/30/2015	0.54	Yes (Placed in EA2/EA3)		
EA2/EA3	<20	087-EA2-20-h2:j3 (overburden)	2200 cy	087-EA2-20-h2	1/8/2016	24.1		Yes	
				087-EA2-20-h3	1/8/2016	<1.4	Yes (Placed in EA2/EA3)		
				087-EA2-20-h4	1/8/2016	19	Yes (Placed in EA2/EA3)		
				087-EA2-20-i2	1/8/2016	0.66	Yes (Placed in EA2/EA3)		
				087-EA2-20-i3	1/8/2016	<1.9	Yes (Placed in EA2/EA3)		
				087-EA2-20-i4	1/8/2016	<1.4	Yes (Placed in EA2/EA3)		
				087-EA2-20-j1	1/8/2016	<2.0	Yes (Placed in EA2/EA3)		
				087-EA2-20-j2	1/8/2016	8.9	Yes (Placed in EA2/EA3)		
				087-EA2-20-j3	1/8/2016	<1.9	Yes (Placed in EA2/EA3)		
EA2/EA3	<20	087-EA2-20-k1:k4	1000 cy	087-EA2-20-k1	1/8/2016	7	Yes (Placed in EA2/EA3)		
				087-EA2-20-k2	1/8/2016	10	Yes (Placed in EA2/EA3)		
				087-EA2-20-k3	1/8/2016	8	Yes (Placed in EA2/EA3)		
				087-EA2-20-k4	1/8/2016	<1.9	Yes (Placed in EA2/EA3)		
EA1	<20	087-EA1-20-a1:a4	210 cy	087-EA1-20-a1	2/29/2016	0.89	Yes (Placed in EA2/EA3)		
				087-EA1-20-a2	2/29/2016	3.2	Yes (Placed in EA2/EA3)		
				087-EA1-20-a3	2/29/2016	29		Yes	
				087-EA1-20-a4	2/29/2016	2.3	Yes (Placed in EA2/EA3)		

mg/kg = milligrams per kilogram
*Material placement locations are approximate and based on concentrations in mg/kg.

Prepared by JD 05/01/2016
Reviewed by NW 05/15/2016

TABLE 6B

Stockpile Soil Results <20 mg/kg

Study Area 6 North

Honeywell International Inc.

Jersey City, New Jersey

				087-EA8-20-a								087-EA8-20-b							
Client Sample ID				087-EA8-20-a1		087-EA8-20-a2		087-EA8-20-a3		087-EA8-20-a4		087-EA8-20-b1		087-EA8-20-b2		087-EA8-20-b3		087-EA8-20-b4	
Lab Sample ID				JB97778-1		JB97778-2		JB97778-3		JB97778-4		JB97778-5		JB97778-6R		JB97778-7R		JB97778-8	
Date Sampled				06/24/2015		06/24/2015		06/24/2015		06/24/2015		06/24/2015		06/24/2015		06/24/2015		06/24/2015	
Sample Purpose		NJ 2012 MOST		REG		REG		REG		REG		REG		REG		REG		REG	
Parameter Name	Units	STRINGENT SRS	NJ 2013 IGW SOIL	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q
HEXAVALENT CHROMIUM	mg/kg	20	NC	2.3	U	2.3	U	1.9	U	1.9	U	2.1	U	0.78		2.1		2	U

Notes:

NJ 2012 MOST STRINGENT SRS- NJDEP Most Stringent Soil Remediation Standards [N.J.A.C. 7:26D; last amended 5/7/2012]

NJ 2013 IGW SOIL – NJDEP Impact to Groundwater Soil Screening Levels [N.J.A.C. 7:26D; last amended November 2013]

NC: No criterion established

Bold and shaded concentrations exceed the NJ 2013 IGW SOIL or both the NJ 2013 IGW SOIL and the NJ 2012 MOST STRINGENT SRS

Depths reported in feet below ground surface

CONC: Concentration reported in milligrams per kilogram (mg/kg)

J: Estimated concentration

Q: Data qualifier assigned by laboratory or data validator

U: Not detected above method detection limit

Prepared by: DP 05/25/2016
Reviewed by: NAW 05/08/17

TABLE 6B

Stockpile Soil Results <20 mg/kg

Study Area 6 North

Honeywell International Inc.

Jersey City, New Jersey

				087-EA8-20-c								087-EA7-20-a							
Client Sample ID				087-EA8-20-c1		087-EA8-20-c2		087-EA8-20-c3		087-EA8-20-c4		087-EA7-20-a1		087-EA7-20-a2		087-EA7-20-a3		087-EA7-20-a4	
Lab Sample ID				JB97778-9		JB97778-10		JB97778-11R		JB97778-12		JB97995-1RT		JB97995-2R		JB97995-3R		JB97995-4R	
Date Sampled				06/24/2015		06/24/2015		06/24/2015		06/24/2015		06/26/2015		06/26/2015		06/26/2015		06/26/2015	
Sample Purpose		NJ 2012 MOST		REG		REG		REG		REG		REG		REG		REG		REG	
Parameter Name	Units	STRINGENT SRS	NJ 2013 IGW SOIL	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q
HEXAVALENT CHROMIUM	mg/kg	20	NC	1.9	U	2.1	U	0.54		1.9	U	1.8		1.4	U	1.4	U	5.5	

Notes:

NJ 2012 MOST STRINGENT SRS- NJDEP Most Stringent Soil Remediation Standards [N.J.A.C. 7:26D; last amended 5/7/2012]

NJ 2013 IGW SOIL – NJDEP Impact to Groundwater Soil Screening Levels [N.J.A.C. 7:26D; last amended November 2013]

NC: No criterion established

Bold and shaded concentrations exceed the NJ 2013 IGW SOIL or both the NJ 2013 IGW SOIL and the NJ 2012 MOST STRINGENT SRS

Depths reported in feet below ground surface

CONC: Concentration reported in milligrams per kilogram (mg/kg)

J: Estimated concentration

Q: Data qualifier assigned by laboratory or data validator

U: Not detected above method detection limit

Prepared by: DP 05/25/2016
Reviewed by: NAW 05/08/17

TABLE 6B

Stockpile Soil Results <20 mg/kg

Study Area 6 North

Honeywell International Inc.

Jersey City, New Jersey

				087-EA7-20-c				087-EA7-20-b						087-EA4-20-a							
Client Sample ID				087-EA7-20-c1		087-EA7-20-c2		087-EA7-20-b1		087-EA7-20-b2		087-EA7-20-b3		087-EA7-20-b4		087-EA4-20-a1		087-EA4-20-a2		087-EA4-20-a3		087-EA4-20-a4	
Lab Sample ID				JB99075-1		JB99075-2		JB99075-3R		JB99075-4R		JB99075-5		JB99075-6		JC3673-1T		JC3673-2		JC3673-3T		JC3673-4	
Date Sampled				07/14/2015		07/14/2015		07/14/2015		07/14/2015		07/14/2015		07/14/2015		09/11/2015		09/11/2015		09/11/2015		09/11/2015	
Sample Purpose		NJ 2012 MOST		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG	
Parameter Name	Units	STRINGENT SRS	NJ 2013 IGW SOIL	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q
HEXAVALENT CHROMIUM	mg/kg	20	NC	0.47	UJ	1.6	UJ	5.2		2.6		4.3		2.8	J	0.47	UJ	1.4	UJ	0.46	UJ	5	J

Notes:

NJ 2012 MOST STRINGENT SRS- NJDEP Most Stringent Soil Remediation Standards [N.J.A.C. 7:26D; last amended 5/7/2012]

NJ 2013 IGW SOIL – NJDEP Impact to Groundwater Soil Screening Levels [N.J.A.C. 7:26D; last amended November 2013]

NC: No criterion established

Bold and shaded concentrations exceed the NJ 2013 IGW SOIL or both the NJ 2013 IGW SOIL and the NJ 2012 MOST STRINGENT SRS

Depths reported in feet below ground surface

CONC: Concentration reported in milligrams per kilogram (mg/kg)

J: Estimated concentration

Q: Data qualifier assigned by laboratory or data validator

U: Not detected above method detection limit

Prepared by: DP 05/25/2016
Reviewed by: NAW 05/08/17

TABLE 6B

Stockpile Soil Results <20 mg/kg

Study Area 6 North

Honeywell International Inc.

Jersey City, New Jersey

				087-EA5-20-a								087-EA5-20-b							
Client Sample ID				087-EA5-20-a1		087-EA5-20-a2		087-EA5-20-a3		087-EA5-20-a4		087-EA5-20-b1		087-EA5-20-b2		087-EA5-20-b3		087-EA5-20-b4	
Lab Sample ID				JC3673-5		JC3673-6T		JC3673-7T		JC3673-8		JC3673-9T		JC3673-10T		JC3673-11T		JC3673-12T	
Date Sampled				09/11/2015		09/11/2015		09/11/2015		09/11/2015		09/11/2015		09/11/2015		09/11/2015		09/11/2015	
Sample Purpose		NJ 2012 MOST		REG		REG		REG		REG		REG		REG		REG		REG	
Parameter Name	Units	STRINGENT SRS	NJ 2013 IGW SOIL	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q
HEXAVALENT CHROMIUM	mg/kg	20	NC	0.7	J	0.57	UJ	0.45	UJ	1.1	UJ	0.49	UJ	6.8	J	0.57	UJ	0.55	UJ

Notes:

NJ 2012 MOST STRINGENT SRS- NJDEP Most Stringent Soil Remediation Standards [N.J.A.C. 7:26D; last amended 5/7/2012]

NJ 2013 IGW SOIL – NJDEP Impact to Groundwater Soil Screening Levels [N.J.A.C. 7:26D; last amended November 2013]

NC: No criterion established

Bold and shaded concentrations exceed the NJ 2013 IGW SOIL or both the NJ 2013 IGW SOIL and the NJ 2012 MOST STRINGENT SRS

Depths reported in feet below ground surface

CONC: Concentration reported in milligrams per kilogram (mg/kg)

J: Estimated concentration

Q: Data qualifier assigned by laboratory or data validator

U: Not detected above method detection limit

Prepared by: DP 05/25/2016
Reviewed by: NAW 05/08/17

TABLE 6B

Stockpile Soil Results <20 mg/kg

Study Area 6 North

Honeywell International Inc.

Jersey City, New Jersey

				087-EA5-20-c								087-EA5-20-d								087-EA2-WATERLINE-092815	
Client Sample ID				087-EA5-20-c1		087-EA5-20-c2		087-EA5-20-c3		087-EA5-20-c4		087-EA5-20-d1		087-EA5-20-d2		087-EA5-20-d3		087-EA5-20-d4		087-EA2-WATERLINE-092815	
Lab Sample ID				JC3673-13		JC3673-14		JC3673-15		JC3673-16R		JC3673-17T		JC3673-18		JC3673-19		JC3673-20T		JC4875-1R	
Date Sampled				09/11/2015		09/11/2015		09/11/2015		09/11/2015		09/11/2015		09/11/2015		09/11/2015		09/11/2015		09/28/2015	
Sample Purpose		NJ 2012 MOST		REG		REG		REG		REG		REG		REG		REG		REG		REG	
Parameter Name	Units	STRINGENT SRS	NJ 2013 IGW SOIL	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q
HEXAVALENT CHROMIUM	mg/kg	20	NC	1.8	UJ	1.9	UJ	0.56	UJ	0.6	UJ	0.53	UJ	0.44	UJ	0.5	UJ	0.51	UJ	13.5	J

Notes:

NJ 2012 MOST STRINGENT SRS- NJDEP Most Stringent Soil Remediation Standards [N.J.A.C. 7:26D; last amended 5/7/2012]

NJ 2013 IGW SOIL – NJDEP Impact to Groundwater Soil Screening Levels [N.J.A.C. 7:26D; last amended November 2013]

NC: No criterion established

Bold and shaded concentrations exceed the NJ 2013 IGW SOIL or both the NJ 2013 IGW SOIL and the NJ 2012 MOST STRINGENT SRS

Depths reported in feet below ground surface

CONC: Concentration reported in milligrams per kilogram (mg/kg)

J: Estimated concentration

Q: Data qualifier assigned by laboratory or data validator

U: Not detected above method detection limit

Prepared by: DP 05/25/2016
Reviewed by: NAW 05/08/17

TABLE 6B

Stockpile Soil Results <20 mg/kg

Study Area 6 North

Honeywell International Inc.

Jersey City, New Jersey

				087-1N-20-a								087-1N-20-b							
Client Sample ID				087-1N-20-a1		087-1N-20-a2		087-1N-20-a3		087-1N-20-a4		087-1N-20-b1		087-1N-20-b2		087-1N-20-b3		087-1N-20-b4	
Lab Sample ID				JC7275-1		JC7275-2R		JC7275-3R		JC7275-4R		JC7275-5R		JC7275-6R		JC7275-7		JC7275-8R	
Date Sampled				10/28/2015		10/28/2015		10/28/2015		10/28/2015		10/28/2015		10/28/2015		10/28/2015		10/28/2015	
Sample Purpose		NJ 2012 MOST		REG		REG		REG		REG		REG		REG		REG		REG	
Parameter Name	Units	STRINGENT SRS	NJ 2013 IGW SOIL	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q
HEXAVALENT CHROMIUM	mg/kg	20	NC	0.5	UJ	2.1		0.48	U	5.4		0.98		2	U	0.65	J	1.9	U

Notes:

NJ 2012 MOST STRINGENT SRS- NJDEP Most Stringent Soil Remediation Standards [N.J.A.C. 7:26D; last amended 5/7/2012]

NJ 2013 IGW SOIL – NJDEP Impact to Groundwater Soil Screening Levels [N.J.A.C. 7:26D; last amended November 2013]

NC: No criterion established

Bold and shaded concentrations exceed the NJ 2013 IGW SOIL or both the NJ 2013 IGW SOIL and the NJ 2012 MOST STRINGENT SRS

Depths reported in feet below ground surface

CONC: Concentration reported in milligrams per kilogram (mg/kg)

J: Estimated concentration

Q: Data qualifier assigned by laboratory or data validator

U: Not detected above method detection limit

Prepared by: DP 05/25/2016
Reviewed by: NAW 05/08/17

TABLE 6B

Stockpile Soil Results <20 mg/kg

Study Area 6 North

Honeywell International Inc.

Jersey City, New Jersey

				087-1N-20-c								087-1N-20-d							
Client Sample ID				087-1N-20-c1		087-1N-20-c2		087-1N-20-c3		087-1N-20-c4		087-1N-20-d1		087-1N-20-d2		087-1N-20-d3		087-1N-20-d4	
Lab Sample ID				JC7275-9R		JC7275-10		JC7275-11R		JC7275-12R		JC8711-1		JC8711-2		JC8711-3R		JC8711-4	
Date Sampled				10/28/2015		10/28/2015		10/28/2015		10/28/2015		11/17/2015		11/17/2015		11/17/2015		11/17/2015	
Sample Purpose		NJ 2012 MOST		REG		REG		REG		REG		REG		REG		REG		REG	
Parameter Name	Units	STRINGENT SRS	NJ 2013 IGW SOIL	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q
HEXAVALENT CHROMIUM	mg/kg	20	NC	2	U	0.76	J	1.8	U	0.51	U	1.4	U	9.5		19.9		1.5	U

Notes:

NJ 2012 MOST STRINGENT SRS- NJDEP Most Stringent Soil Remediation Standards [N.J.A.C. 7:26D; last amended 5/7/2012]

NJ 2013 IGW SOIL – NJDEP Impact to Groundwater Soil Screening Levels [N.J.A.C. 7:26D; last amended November 2013]

NC: No criterion established

Bold and shaded concentrations exceed the NJ 2013 IGW SOIL or both the NJ 2013 IGW SOIL and the NJ 2012 MOST STRINGENT SRS

Depths reported in feet below ground surface

CONC: Concentration reported in milligrams per kilogram (mg/kg)

J: Estimated concentration

Q: Data qualifier assigned by laboratory or data validator

U: Not detected above method detection limit

Prepared by: DP 05/25/2016
Reviewed by: NAW 05/08/17

TABLE 6B

Stockpile Soil Results <20 mg/kg

Study Area 6 North

Honeywell International Inc.

Jersey City, New Jersey

				087-1N-20-e								087-1N-20-f							
Client Sample ID				087-1N-20-e1		087-1N-20-e2		087-1N-20-e3		087-1N-20-e4		087-1N-20-f1		087-1N-20-f2		087-1N-20-f3		087-1N-20-f4	
Lab Sample ID				JC8711-5		JC8711-6R		JC8711-7		JC8711-8		JC8711-9R		JC8711-10		JC8711-11		JC8711-12	
Date Sampled				11/17/2015		11/17/2015		11/17/2015		11/17/2015		11/17/2015		11/17/2015		11/17/2015		11/17/2015	
Sample Purpose		NJ 2012 MOST		REG		REG		REG		REG		REG		REG		REG		REG	
Parameter Name	Units	STRINGENT SRS	NJ 2013 IGW SOIL	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q
HEXAVALENT CHROMIUM	mg/kg	20	NC	1.5	U	1.3	U	1.4	U	1.4	U	1.5	U	0.93	U	0.9	U	1.5	U

Notes:

NJ 2012 MOST STRINGENT SRS- NJDEP Most Stringent Soil Remediation Standards [N.J.A.C. 7:26D; last amended 5/7/2012]

NJ 2013 IGW SOIL – NJDEP Impact to Groundwater Soil Screening Levels [N.J.A.C. 7:26D; last amended November 2013]

NC: No criterion established

Bold and shaded concentrations exceed the NJ 2013 IGW SOIL or both the NJ 2013 IGW SOIL and the NJ 2012 MOST STRINGENT SRS

Depths reported in feet below ground surface

CONC: Concentration reported in milligrams per kilogram (mg/kg)

J: Estimated concentration

Q: Data qualifier assigned by laboratory or data validator

U: Not detected above method detection limit

Prepared by: DP 05/25/2016
Reviewed by: NAW 05/08/17

TABLE 6B

Stockpile Soil Results <20 mg/kg

Study Area 6 North

Honeywell International Inc.

Jersey City, New Jersey

				087-1N-20-g								087-1N-20-h							
Client Sample ID				087-1N-20-g1		087-1N-20-g2		087-1N-20-g3		087-1N-20-g4		087-1N-20-h1		087-1N-20-h2		087-1N-20-h3		087-1N-20-h4	
Lab Sample ID				JC8711-13		JC8711-14		JC8711-15		JC8711-16R		JC8711-17		JC8711-18R		JC8711-19R		JC8711-20	
Date Sampled				11/17/2015		11/17/2015		11/17/2015		11/17/2015		11/17/2015		11/17/2015		11/17/2015		11/17/2015	
Sample Purpose		NJ 2012 MOST		REG		REG		REG		REG		REG		REG		REG		REG	
Parameter Name	Units	STRINGENT SRS	NJ 2013 IGW SOIL	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q
HEXAVALENT CHROMIUM	mg/kg	20	NC	0.95	U	0.86	U	0.96	U	1.3	U	1.9		0.92	U	1.4	U	0.92	U

Notes:

NJ 2012 MOST STRINGENT SRS- NJDEP Most Stringent Soil Remediation Standards [N.J.A.C. 7:26D; last amended 5/7/2012]

NJ 2013 IGW SOIL – NJDEP Impact to Groundwater Soil Screening Levels [N.J.A.C. 7:26D; last amended November 2013]

NC: No criterion established

Bold and shaded concentrations exceed the NJ 2013 IGW SOIL or both the NJ 2013 IGW SOIL and the NJ 2012 MOST STRINGENT SRS

Depths reported in feet below ground surface

CONC: Concentration reported in milligrams per kilogram (mg/kg)

J: Estimated concentration

Q: Data qualifier assigned by laboratory or data validator

U: Not detected above method detection limit

Prepared by: DP 05/25/2016
Reviewed by: NAW 05/08/17

TABLE 6B

Stockpile Soil Results <20 mg/kg

Study Area 6 North

Honeywell International Inc.

Jersey City, New Jersey

				087-1N-20-i								087-1N-20-j							
Client Sample ID				087-1N-20-i1		087-1N-20-i2		087-1N-20-i3		087-1N-20-i4		087-1N-20-j1		087-1N-20-j2		087-1N-20-j3		087-1N-20-j4	
Lab Sample ID				JC8711-21		JC8711-22		JC8711-23		JC8711-24		JC8711-25		JC8711-26		JC8711-27		JC8711-28	
Date Sampled				11/17/2015		11/17/2015		11/17/2015		11/17/2015		11/17/2015		11/17/2015		11/17/2015		11/17/2015	
Sample Purpose		NJ 2012 MOST		REG		REG		REG		REG		REG		REG		REG		REG	
Parameter Name	Units	STRINGENT SRS	NJ 2013 IGW SOIL	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q
HEXAVALENT CHROMIUM	mg/kg	20	NC	1.3	U	2	U	1.9	U	2.1	U	1.8	U	1.4	U	1.9	U	1.8	U

Notes:

NJ 2012 MOST STRINGENT SRS- NJDEP Most Stringent Soil Remediation Standards [N.J.A.C. 7:26D; last amended 5/7/2012]

NJ 2013 IGW SOIL – NJDEP Impact to Groundwater Soil Screening Levels [N.J.A.C. 7:26D; last amended November 2013]

NC: No criterion established

Bold and shaded concentrations exceed the NJ 2013 IGW SOIL or both the NJ 2013 IGW SOIL and the NJ 2012 MOST STRINGENT SRS

Depths reported in feet below ground surface

CONC: Concentration reported in milligrams per kilogram (mg/kg)

J: Estimated concentration

Q: Data qualifier assigned by laboratory or data validator

U: Not detected above method detection limit

Prepared by: DP 05/25/2016
Reviewed by: NAW 05/08/17

TABLE 6B

Stockpile Soil Results <20 mg/kg

Study Area 6 North

Honeywell International Inc.

Jersey City, New Jersey

				087-1N-20-k								087-1N-20-L							
Client Sample ID				087-1N-20-k1		087-1N-20-k2		087-1N-20-k3		087-1N-20-k4		087-1N-20-L1		087-1N-20-L2		087-1N-20-L3		087-1N-20-L4	
Lab Sample ID				JC8711-29		JC8711-30		JC8711-31		JC8711-32		JC8711-33		JC8711-34		JC8711-35		JC8711-36	
Date Sampled				11/17/2015		11/17/2015		11/17/2015		11/17/2015		11/17/2015		11/17/2015		11/17/2015		11/17/2015	
Sample Purpose		NJ 2012 MOST		REG		REG		REG		REG		REG		REG		REG		REG	
Parameter Name	Units	STRINGENT SRS	NJ 2013 IGW SOIL	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q
HEXAVALENT CHROMIUM	mg/kg	20	NC	1.6	U	2	U	2.1	U	1.4	U	1.4	U	1.9	U	2	U	2.1	U

Notes:

NJ 2012 MOST STRINGENT SRS- NJDEP Most Stringent Soil Remediation Standards [N.J.A.C. 7:26D; last amended 5/7/2012]

NJ 2013 IGW SOIL – NJDEP Impact to Groundwater Soil Screening Levels [N.J.A.C. 7:26D; last amended November 2013]

NC: No criterion established

Bold and shaded concentrations exceed the NJ 2013 IGW SOIL or both the NJ 2013 IGW SOIL and the NJ 2012 MOST STRINGENT SRS

Depths reported in feet below ground surface

CONC: Concentration reported in milligrams per kilogram (mg/kg)

J: Estimated concentration

Q: Data qualifier assigned by laboratory or data validator

U: Not detected above method detection limit

Prepared by: DP 05/25/2016
Reviewed by: NAW 05/08/17

TABLE 6B

Stockpile Soil Results <20 mg/kg

Study Area 6 North

Honeywell International Inc.

Jersey City, New Jersey

				087-1N-20-m								087-1N-20-n							
Client Sample ID				087-1N-20-m1		087-1N-20-m2		087-1N-20-m3		087-1N-20-m4		087-1N-20-n1		087-1N-20-n2		087-1N-20-n3		087-1N-20-n4	
Lab Sample ID				JC8711-37		JC8711-38		JC8711-39		JC8711-40		JC8711-41		JC8711-42		JC8711-43		JC8711-44R	
Date Sampled				11/17/2015		11/17/2015		11/17/2015		11/17/2015		11/17/2015		11/17/2015		11/17/2015		11/17/2015	
Sample Purpose		NJ 2012 MOST		REG		REG		REG		REG		REG		REG		REG		REG	
Parameter Name	Units	STRINGENT SRS	NJ 2013 IGW SOIL	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q
HEXAVALENT CHROMIUM	mg/kg	20	NC	1.9	U	1.9	U	1.4	U	1.4	U	1.4	U	1.4	U	1.3	U	1.5	U

Notes:

NJ 2012 MOST STRINGENT SRS- NJDEP Most Stringent Soil Remediation Standards [N.J.A.C. 7:26D; last amended 5/7/2012]

NJ 2013 IGW SOIL – NJDEP Impact to Groundwater Soil Screening Levels [N.J.A.C. 7:26D; last amended November 2013]

NC: No criterion established

Bold and shaded concentrations exceed the NJ 2013 IGW SOIL or both the NJ 2013 IGW SOIL and the NJ 2012 MOST STRINGENT SRS

Depths reported in feet below ground surface

CONC: Concentration reported in milligrams per kilogram (mg/kg)

J: Estimated concentration

Q: Data qualifier assigned by laboratory or data validator

U: Not detected above method detection limit

Prepared by: DP 05/25/2016
Reviewed by: NAW 05/08/17

TABLE 6B

Stockpile Soil Results <20 mg/kg

Study Area 6 North

Honeywell International Inc.

Jersey City, New Jersey

				087-EA2-20-a								087-EA2-20-B							
Client Sample ID				087-EA2-20-a1		087-EA2-20-a2		087-EA2-20-a3		087-EA2-20-a4		087-EA2-20-B1		087-EA2-20-B2		087-EA2-20-B3		087-EA2-20-B4	
Lab Sample ID				JC10492-1R		JC10492-2R		JC10492-3R		JC10492-4R		JC11783-1R		JC11783-2R		JC11783-3		JC11783-4	
Date Sampled				12/11/2015		12/11/2015		12/11/2015		12/11/2015		12/30/2015		12/30/2015		12/30/2015		12/30/2015	
Sample Purpose		NJ 2012 MOST		REG		REG		REG		REG		REG		REG		REG		REG	
Parameter Name	Units	STRINGENT SRS	NJ 2013 IGW SOIL	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q
HEXAVALENT CHROMIUM	mg/kg	20	NC	1.8	U	6.7		1.9	U	3.8		3	J	3	J	0.55		0.97	

Notes:

NJ 2012 MOST STRINGENT SRS- NJDEP Most Stringent Soil Remediation Standards [N.J.A.C. 7:26D; last amended 5/7/2012]

NJ 2013 IGW SOIL – NJDEP Impact to Groundwater Soil Screening Levels [N.J.A.C. 7:26D; last amended November 2013]

NC: No criterion established

Bold and shaded concentrations exceed the NJ 2013 IGW SOIL or both the NJ 2013 IGW SOIL and the NJ 2012 MOST STRINGENT SRS

Depths reported in feet below ground surface

CONC: Concentration reported in milligrams per kilogram (mg/kg)

J: Estimated concentration

Q: Data qualifier assigned by laboratory or data validator

U: Not detected above method detection limit

Prepared by: DP 05/25/2016
Reviewed by: NAW 05/08/17

TABLE 6B

Stockpile Soil Results <20 mg/kg

Study Area 6 North

Honeywell International Inc.

Jersey City, New Jersey

				087-EA2-20-C								087-EA2-20-D							
Client Sample ID				087-EA2-20-C1		087-EA2-20-C2		087-EA2-20-C3		087-EA2-20-C4		087-EA2-20-D1		087-EA2-20-D2		087-EA2-20-D3		087-EA2-20-D4	
Lab Sample ID				JC11783-5R		JC11783-6R		JC11783-7R		JC11783-8R		JC11783-9		JC11783-10		JC11783-11R		JC11783-12	
Date Sampled				12/30/2015		12/30/2015		12/30/2015		12/30/2015		12/30/2015		12/30/2015		12/30/2015		12/30/2015	
Sample Purpose		NJ 2012 MOST		REG		REG		REG		REG		REG		REG		REG		REG	
Parameter Name	Units	STRINGENT SRS	NJ 2013 IGW SOIL	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q
HEXAVALENT CHROMIUM	mg/kg	20	NC	4.3	J	1.5	J	1.6	J	0.53	UJ	0.6		15.9		5.4	J	1.7	

Notes:

NJ 2012 MOST STRINGENT SRS- NJDEP Most Stringent Soil Remediation Standards [N.J.A.C. 7:26D; last amended 5/7/2012]

NJ 2013 IGW SOIL – NJDEP Impact to Groundwater Soil Screening Levels [N.J.A.C. 7:26D; last amended November 2013]

NC: No criterion established

Bold and shaded concentrations exceed the NJ 2013 IGW SOIL or both the NJ 2013 IGW SOIL and the NJ 2012 MOST STRINGENT SRS

Depths reported in feet below ground surface

CONC: Concentration reported in milligrams per kilogram (mg/kg)

J: Estimated concentration

Q: Data qualifier assigned by laboratory or data validator

U: Not detected above method detection limit

Prepared by: DP 05/25/2016
Reviewed by: NAW 05/08/17

TABLE 6B

Stockpile Soil Results <20 mg/kg

Study Area 6 North

Honeywell International Inc.

Jersey City, New Jersey

				087-EA2-20-E								087-EA2-20-F								087-EA2-20-G		087-EA2-20-H	
Client Sample ID				087-EA2-20-E1		087-EA2-20-E2		087-EA2-20-E3		087-EA2-20-E4		087-EA2-20-F1		087-EA2-20-F2		087-EA2-20-F3		087-EA2-20-F4		087-EA2-20-G1		087-EA2-20-H1	
Lab Sample ID				JC11783-13		JC11783-14R		JC11783-15R		JC11783-16		JC11783-17		JC11783-18R		JC11783-19R		JC11783-20		JC11783-21		JC11783-22	
Date Sampled				12/30/2015		12/30/2015		12/30/2015		12/30/2015		12/30/2015		12/30/2015		12/30/2015		12/30/2015		12/30/2015		12/30/2015	
Sample Purpose		NJ 2012 MOST		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG	
Parameter Name	Units	STRINGENT SRS	NJ 2013 IGW SOIL	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q
HEXAVALENT CHROMIUM	mg/kg	20	NC	0.53	U	12.3		3.1		0.57		0.52	U	0.53	U	0.57		0.54	U	0.53	U	0.7	

Notes:

NJ 2012 MOST STRINGENT SRS- NJDEP Most Stringent Soil Remediation Standards [N.J.A.C. 7:26D; last amended 5/7/2012]

NJ 2013 IGW SOIL – NJDEP Impact to Groundwater Soil Screening Levels [N.J.A.C. 7:26D; last amended November 2013]

NC: No criterion established

Bold and shaded concentrations exceed the NJ 2013 IGW SOIL or both the NJ 2013 IGW SOIL and the NJ 2012 MOST STRINGENT SRS

Depths reported in feet below ground surface

CONC: Concentration reported in milligrams per kilogram (mg/kg)

J: Estimated concentration

Q: Data qualifier assigned by laboratory or data validator

U: Not detected above method detection limit

Prepared by: DP 05/25/2016
Reviewed by: NAW 05/08/17

TABLE 6B

Stockpile Soil Results <20 mg/kg

Study Area 6 North

Honeywell International Inc.

Jersey City, New Jersey

				087-EA2-20-I	087-EA2-20-H			087-EA2-20-I			087-EA2-20-J		
Client Sample ID				087-EA2-20-I1	087-EA2-20-H2	087-EA2-20-H3	087-EA2-20-H4	087-EA2-20-I2	087-EA2-20-I3	087-EA2-20-I4	087-EA2-20-J1	087-EA2-20-J2	087-EA2-20-J3
Lab Sample ID				JC11783-23R	JC12267-1	JC12267-2	JC12267-3R	JC12267-4R	JC12267-5R	JC12267-6	JC12267-7	JC12267-8R	JC12267-9
Date Sampled				12/30/2015	01/08/2016	01/08/2016	01/08/2016	01/08/2016	01/08/2016	01/08/2016	01/08/2016	01/08/2016	01/08/2016
Sample Purpose		NJ 2012 MOST		REG	REG	REG	REG	REG	REG	REG	REG	REG	REG
Parameter Name	Units	STRINGENT SRS	NJ 2013 IGW SOIL	CONC Q	CONC Q	CONC Q	CONC Q	CONC Q	CONC Q	CONC Q	CONC Q	CONC Q	CONC Q
HEXAVALENT CHROMIUM	mg/kg	20	NC	0.54 U	**24.1**	1.4 U	19 J	0.66 J	0.55 J	1.4 U	2 U	8.9	1.9 U

Notes:

NJ 2012 MOST STRINGENT SRS- NJDEP Most Stringent Soil Remediation Standards [N.J.A.C. 7:26D; last amended 5/7/2012]

NJ 2013 IGW SOIL – NJDEP Impact to Groundwater Soil Screening Levels [N.J.A.C. 7:26D; last amended November 2013]

NC: No criterion established

Bold and shaded concentrations exceed the NJ 2013 IGW SOIL or both the NJ 2013 IGW SOIL and the NJ 2012 MOST STRINGENT SRS

Depths reported in feet below ground surface

CONC: Concentration reported in milligrams per kilogram (mg/kg)

J: Estimated concentration

Q: Data qualifier assigned by laboratory or data validator

U: Not detected above method detection limit

Prepared by: DP 05/25/2016
Reviewed by: NAW 05/08/17

TABLE 6B

Stockpile Soil Results <20 mg/kg

Study Area 6 North

Honeywell International Inc.

Jersey City, New Jersey

				087-EA2-20-K								087-EA1-20-a							
Client Sample ID				087-EA2-20-K1		087-EA2-20-K2		087-EA2-20-K3		087-EA2-20-K4		087-EA1-20-a1		087-EA1-20-a2		087-EA1-20-a3		087-EA1-20-a4	
Lab Sample ID				JC12267-10R		JC12267-11		JC12267-12		JC12267-13R		JC15059-1		JC15059-2R		JC15059-3R		JC15059-4R	
Date Sampled				01/08/2016		01/08/2016		01/08/2016		01/08/2016		02/29/2016		02/29/2016		02/29/2016		02/29/2016	
Sample Purpose		NJ 2012 MOST		REG		REG		REG		REG		REG		REG		REG		REG	
Parameter Name	Units	STRINGENT SRS	NJ 2013 IGW SOIL	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q
HEXAVALENT CHROMIUM	mg/kg	20	NC	7	J	9.5		7.5		0.55		0.89	J	3.2	J	**29**	**J**	2.3	J

Notes:

NJ 2012 MOST STRINGENT SRS- NJDEP Most Stringent Soil Remediation Standards [N.J.A.C. 7:26D; last amended 5/7/2012]

NJ 2013 IGW SOIL – NJDEP Impact to Groundwater Soil Screening Levels [N.J.A.C. 7:26D; last amended November 2013]

NC: No criterion established

Bold and shaded concentrations exceed the NJ 2013 IGW SOIL or both the NJ 2013 IGW SOIL and the NJ 2012 MOST STRINGENT SRS

Depths reported in feet below ground surface

CONC: Concentration reported in milligrams per kilogram (mg/kg)

J: Estimated concentration

Q: Data qualifier assigned by laboratory or data validator

U: Not detected above method detection limit

Prepared by: DP 05/25/2016
Reviewed by: NAW 05/08/17

TABLE 6C
Stockpile Soil Results <240 mg/kg
Study Area 6 North
Honeywell International Inc.
Jersey City, New Jersey

				124-3S-EX-A								124-3S-EX-B								124-3S-EX-C								124-3S-EX-D							
Client Sample ID				124-3S-EX-A1		124-3S-EX-A2		124-3S-EX-A3		124-3S-EX-A4		124-3S-EX-B1		124-3S-EX-B2		124-3S-EX-B3		124-3S-EX-B4		124-3S-EX-C1		124-3S-EX-C2		124-3S-EX-C3		124-3S-EX-C4		124-3S-EX-D1		124-3S-EX-D2		124-3S-EX-D3		124-3S-EX-D4	
Lab Sample ID				JC1124-1R		JC1124-2/2R		JC1124-3/3R		JC1124-4/4R		JC1124-5		JC1124-6/6R		JC1124-7		JC1124-8		JC1124-9/9R		JC1124-10/10R		JC1124-11/11R		JC1124-12		JC1124-13		JC1124-14		JC1124-15/15R		JC1124-16	
Date Sampled				08/10/2015		08/10/2015		08/10/2015		08/10/2015		08/10/2015		08/10/2015		08/10/2015		08/10/2015		08/10/2015		08/10/2015		08/10/2015		08/10/2015		08/10/2015		08/10/2015		08/10/2015		08/10/2015	
Sample Purpose		NJ 2012 MOST		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG	
Parameter Name	Units	STRINGENT SRS	NJ 2013 IGW SOIL	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q
HEXAVALENT CHROMIUM	mg/kg	20	NC	**51.6**	J	18.6	J	**37.1**	J	18.9	J	**24.8**	J	**49.3**	J	**37.9**	J	**40.4**	J	**24.7**	J	**36.3**	J	**46.7**	J	8.1	J	**25.6**	J	**32.1**	J	**74.6**	J	**34.7**	J

Notes:
NJ 2012 MOST STRINGENT SRS- NJDEP Most Stringent Soil Remediation Standards [N.J.A.C. 7:26D; last amended 5/7/2012].
NJ 2013 IGW SOIL – NJDEP Impact to Groundwater Soil Screening Levels [N.J.A.C. 7:26D; last amended November 2013]
Bold and underlined concentrations exceed the NJ 2012 MOST STRINGENT SRS
Bold, shaded and underlined concentrations exceed the NJ 2012 MOST STRINGENT SRS
CONC: Concentration reported in milligrams per kilogram (mg/kg)
J: Estimated concentration
Q: Data qualifier assigned by laboratory or data validator

Prepared by: DMP 12/14/2016
Checked by: NAW 05/08/2017

TABLE 6C
Stockpile Soil Results <240 mg/kg
Study Area 6 North
Honeywell International Inc.
Jersey City, New Jersey

				124-3S-EX2-a								124-3S-EX-Roadway-a								124-3S-EX3-a							
Client Sample ID				124-3S-EX2-a1		124-3S-EX2-a2		124-3S-EX2-a3		124-3S-EX2-a4		124-3S-Roadway-a1		124-3S-Roadway-a2		124-3S-Roadway-a3		124-3S-Roadway-a4		124-3S-EX3-a1		124-3S-EX3-a2		124-3S-EX3-a3		124-3S-EX3-a4	
Lab Sample ID				JC4876-1/1U		JC4876-2/2U		JC4876-3/3U		JC4876-4		JC4877-1		JC4877-2		JC4877-3		JC4877-4		JC6745-1		JC6745-2		JC6745-3		JC6745-4	
Date Sampled				09/28/2015		09/28/2015		09/28/2015		09/28/2015		09/28/2015		09/28/2015		09/28/2015		09/28/2015		10/21/2015		10/21/2015		10/21/2015		10/21/2015	
Sample Purpose		NJ 2012 MOST		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG	
Parameter Name	Units	STRINGENT SRS	NJ 2013 IGW SOIL	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q
HEXAVALENT CHROMIUM	mg/kg	20	NC	**50.0**		**48.5**		**82.3**		785	J	**327**		**2100**		**1970**		**5900**		**3120**		**6820**		**5690**		**4300**	

Notes:
NJ 2012 MOST STRINGENT SRS- NJDEP Most Stringent Soil Remediation Standards [N.J.A.C. 7:26D; last amended 5/7/2012].
NJ 2013 IGW SOIL – NJDEP Impact to Groundwater Soil Screening Levels [N.J.A.C. 7:26D; last amended November 2013]
Bold and underlined concentrations exceed the NJ 2012 MOST STRINGENT SRS
Bold, shaded and underlined concentrations exceed the NJ 2012 MOST STRINGENT SRS
CONC: Concentration reported in milligrams per kilogram (mg/kg)
J: Estimated concentration
Q: Data qualifier assigned by laboratory or data validator

Prepared by: DMP 12/14/2016
Checked by: NAW 05/08/2017

TABLE 7A

Excavation EA-8 Soil Sample Results

Study Area 6 North
Honeywell International Inc.
Jersey City, New Jersey

					087-SB-630		087-SB-631		087-SB-632		087-SB-632		087-SB-633		087-SB-634		087-SB-635		087-SB-636		087-SB-637		087-SB-638		087-SB-639		087-SB-639	
				Location ID																								
				Client Sample ID	087-SB-630-0807		087-SB-631-0504		087-SB-632-0504		087-SB-632-0302		087-SB-633-0807		087-SB-634-0706		087-SB-635-0402		087-SB-636-0302		087-SB-637-0504		087-SB-638-0706		087-SB-639-0504		087-SB-639-0302	
				Lab Sample ID	JB97871-1/1RTU		JB97873-1		JB97871-2/2RTU		JB97871-3		JB97871-4/4RTU		JB97873-2/2R		JB97996-1/1R		JB97996-2		JB97996-3/3R		JB97996-4		JB99800-1/1RU		JB99800-2/2RU	
				Date Sampled	06/25/2015		06/25/2015		06/25/2015		06/25/2015		06/25/2015		06/25/2015		06/26/2015		06/26/2015		06/26/2015		06/26/2015		07/23/2015		07/23/2015	
				Sample Purpose	REG		Reg		REG		REG		REG		Reg		REG		REG		REG		REG		REG		REG	
Analytical Method	Parameter Name	Units	NJ 2012 MOST STRINGENT SRS	NJ 2013 IGW SOIL	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q
SW7199	HEXAVALENT CHROMIUM	mg/kg	20	NC	**23.9**	J	**283**	J	**95.3**	J	**51.4**	J	9.2	J	**53.4**		**80.5**	J	**36.8**		2.7		2.3		1.4	UJ	**97.8**	J

Notes:
NJ 2012 MOST STRINGENT SRS- NJDEP Most Stringent Soil Remediation Standards [N.J.A.C. 7:26D; last amended 5/7/2012]
NJ 2013 IGW SOIL – NJDEP Impact to Groundwater Soil Screening Levels [N.J.A.C. 7:26D; last amended November 2013]
NC: No criterion established
Bold and underlined concentrations exceed the NJ 2012 MOST STRINGENT SRS
Bold and shaded concentrations exceed the NJ 2013 IGW SOIL or both the NJ 2013 IGW SOIL and the NJ 2012 MOST STRINGENT SRS
Depths reported in feet below ground surface
CONC: Concentration reported in milligrams per kilogram (mg/kg)
J: Estimated concentration
Q: Data qualifier assigned by laboratory or data validator
U: Not detected above method detection limit

Prepared by: DP 05/26/2016
Reviewed by: JLD 12/15/2016

TABLE 7A

Excavation EA-8 Soil Sample Results

Study Area 6 North
Honeywell International Inc.
Jersey City, New Jersey

					Location ID		087-SB-640		087-SB-641		087-SB-642		087-SB-643		087-SB-644		087-SB-645		087-SB-646	
					Client Sample ID		087-SB-640-0504		087-SB-641-0807		087-SB-642-0201		087-SB-643-102115		087-SB-644-102115		087-SB-645-102115		087-SB-646-0302	
					Lab Sample ID		JB99800-3/3RU		JB99800-4/4RU		JC1382-1		JC6736-1		JC6736-2		JC6736-3		JC8424-1	
					Date Sampled		07/23/2015		07/23/2015		08/12/2015		10/21/2015		10/21/2015		10/21/2015		11/12/2015	
					Sample Purpose		REG		REG		REG		REG		REG		REG		REG	
Analytical Method	Parameter Name	Units	NJ 2012 MOST STRINGENT SRS	NJ 2013 IGW SOIL			CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q
SW7199	HEXAVALENT CHROMIUM	mg/kg	20	NC			5.2	J	6.1	J	0.52	U	5.4	J	5	J	**104**	J	2.5	U

Notes:
NJ 2012 MOST STRINGENT SRS- NJDEP Most Stringent Soil Remediation Standards [N.J.A.C. 7:26D; last amended 5/7/2012]
NJ 2013 IGW SOIL – NJDEP Impact to Groundwater Soil Screening Levels [N.J.A.C. 7:26D; last amended November 2013]
NC: No criterion established
Bold and underlined concentrations exceed the NJ 2012 MOST STRINGENT SRS
Bold and shaded concentrations exceed the NJ 2013 IGW SOIL or both the NJ 2013 IGW SOIL and the NJ 2012 MOST STRINGENT SRS
Depths reported in feet below ground surface
CONC: Concentration reported in milligrams per kilogram (mg/kg)
J: Estimated concentration
Q: Data qualifier assigned by laboratory or data validator
U: Not detected above method detection limit

Prepared by: DP 05/26/2016
Reviewed by: JLD 12/15/2016

TABLE 7B
TA-7 and TA-8 Soil Samples
Study Area 6 North
Honeywell International Inc.
Jersey City, New Jersey

Location ID			087-SB-657A		087-SB-657A		087-SB-657B		087-SB-657B		087-SB-658		087-SB-658		087-SB-659		087-SB-659		087-SB-660		087-SB-660		087-SB-661		087-SB-661		087-SB-662		087-SB-662		087-SB-663		087-SB-663	
Client Sample ID			087-SB-657A-1011		087-SB-657A-1112		087-SB-657B-1516		087-SB-657B-1617		087-SB-658-1011		087-SB-658-1112		087-SB-659-0203		087-SB-659-0304		087-SB-660-0203		087-SB-660-0304		087-SB-661-1617		087-SB-661-1718A		087-SB-662-1617		087-SB-662-1718A		087-SB-663-1516		087-SB-663-1617	
Lab Sample ID			JC23027-1		JC23027-2		JC23027-3/3R		JC23027-4		JC23027-5/5R		JC23027-6		JC23027-9/9R		JC23027-10		JC23027-11/11T		JC23027-12		JC23027-13		JC23027-14		JC23027-16/16R		JC23027-17		JC23027-7/7R		JC23027-8	
Date Sampled		NJ 2012 MOST	06/27/2016		06/27/2016		06/27/2016		06/27/2016		06/27/2016		06/27/2016		06/27/2016		06/27/2016		06/27/2016		06/27/2016		06/27/2016		06/27/2016		06/27/2016		06/27/2016		06/27/2016		06/27/2016	
Parameter Name	Units	STRINGENT SRS	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q
CHROMIUM	mg/kg	NC	21.7	J	11.0	J	1980	J	64.6	J	102	J	17.8	J	598	J	196	J	382	J	19.4	J	5050	J	168		6450	J	142		719	J	63.8	J
HEXAVALENT CHROMIUM	mg/kg	20	0.49	U	0.61		0.81	U	0.82		0.74		0.49	U	0.54	U	0.55	U	**26.3**	J	1.3		0.77	U	1.7		0.92	U	1.7		0.92		0.69	U
SULFIDE	mg/kg	NC	4.8	J	4.8	J	15.1	J	6.6	J	7.3	J	4.9	UJ	5.2	UJ	5.5	UJ	4.9	UJ	5.2	UJ	26.2	J	31.7		26.2	J	23.0		18.5	J	6.6	J

Notes:
NJ 2012 MOST STRINGENT SRS- NJDEP Most Stringent Soil Remediation Standards [N.J.A.C. 7:26D; last amended 5/7/2012].
NC: No criterion established
Bold and shaded concentrations exceed the NJ 2012 MOST STRINGENT SRS
Italicized values not detected; reporting limit exceeds criteria
Depths reported in feet below ground surface
CONC: Concentration reported in milligrams per kilogram (mg/kg)
J: Estimated concentration
Q: Data qualifier assigned by laboratory or data validator
U: Not detected above method detection limit

Prepared by: DMP 12/9/2016
Checked by: JLD 12/15/2016

TABLE 7C

TA-10 In-Situ Soil Samples

Study Area 6 North

Honeywell International Inc.

Jersey City, New Jersey

Location ID			087-SB-647		087-SB-647		087-SB-648		087-SB-648		087-SB-649		087-SB-649		087-SB-650		087-SB-650		087-SB-651		087-SB-651		087-SB-652		087-SB-652		087-SB-653		087-SB-653	
Client Sample ID			087-SB-647-1213		087-SB-647-1314		087-SB-648-1213		087-SB-648-1314		087-SB-649-1213		087-SB-649-1314		087-SB-650-1213		087-SB-650-1314		087-SB-651-1213		087-SB-651-1314		087-SB-652-1213		087-SB-652-1314		087-SB-653-1213		087-SB-653-1314	
Lab Sample ID			JC16343-1		JC16343-2		JC16343-3		JC16343-4/4R		JC16343-5		JC16343-6		JC16343-7		JC16343-8/8R		JC16343-9		JC16343-10/10R		JC16343-11/11R		JC16343-12		JC16343-13/13R		JC16343-14	
Date Sampled			03/15/2016		03/15/2016		03/15/2016		03/15/2016		03/15/2016		03/15/2016		03/15/2016		03/15/2016		03/15/2016		03/15/2016		03/15/2016		03/15/2016		03/15/2016		03/15/2016	
Sample Purpose		NJ 2012 MOST	REG		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG	
Parameter Name	**Units**	**STRINGENT SRS**	**CONC**	**Q**	**CONC**	**Q**	**CONC**	**Q**	**CONC**	**Q**	**CONC**	**Q**	**CONC**	**Q**	**CONC**	**Q**	**CONC**	**Q**	**CONC**	**Q**	**CONC**	**Q**	**CONC**	**Q**	**CONC**	**Q**	**CONC**	**Q**	**CONC**	**Q**
CHROMIUM	mg/kg	NC	1340	J	204	J	2080	J	309	J	3250	J	73.5	J	776	J	1980	J	159	J	72.9	J	160	J	66.0	J	412	J	143	J
HEXAVALENT CHROMIUM	mg/kg	20	4.0	J	1.1	J	1.3	J	**128**		2.3	J	1.5	J	**42.2**	**J**	**87.7**		0.63	J	1.7		1.8		0.55	UJ	1.6		6.2	J
SULFIDE	mg/kg	NC	6.1	U	5.1	U	5.2	U	5.2	U	5.1	U	5.4	U	5.0		5.0		5.3	U	5.2	U	4.9	U	5.3	U	5.0	U	4.9	U

Notes:

NJ 2012 MOST STRINGENT SRS

NC: No criterion established

Bold and underlined concentrations exceed the NJ2012 MOST STRINGENT SRS

Bold and shaded concentrations exceed the NJ 2013 IGW SOIL or both the NJ 2013 IGW SOIL and the NJ 2012 MOST STRINGENT SRS

Italicized values not detected; reporting limit exceeds criteria

Depths reported in feet below ground surface

CONC: Concentration reported in milligrams per kilogram (mg/kg)

J: Estimated concentration

Q: Data qualifier assigned by laboratory or data validator

U: Not detected above method detection limit

**JC32905-1, 6 and 7 plotted on the line that separates the Cr(III) and Cr(VI) stability fields. Statistical examination of the laboratory Eh QC data indicates these samples are not oxidizing with the preferred level of certainty of p = 0.95 or greater (0.85 for these samples). This result coupled with the extremely low recovery of the soluble (-0.3%) and insoluble (9.4%) Cr(VI) spike for QC sample JC3205-1gives the appearance of a reducing character. Additional spikes as high as 3500 mg/kg for this sample failed to recover more than 10% of the Cr(VI) spike

Prepared by: DP 05/31/2016
Reviewed by: JLD 12/15/2016

TABLE 7C

TA-10 In-Situ Soil Samples

Study Area 6 North

Honeywell International Inc.

Jersey City, New Jersey

Location ID			087-SB-654		087-SB-654		087-SB-655		087-SB-655		087-SB-656		087-SB-656		087-SB-710-1213		087-SB-710-1314		087-SB-711-1213		087-SB-711-1314		087-SB-712-1213		087-SB-712-1314		087-SB-713-1213		087-SB-713-1314		087-SB-714-1213		087-SB-714-1314	
Client Sample ID			087-SB-654-1213		087-SB-654-1314		087-SB-655-1213		087-SB-655-1314		087-SB-656-1213		087-SB-656-1314		12 - 13		13 - 14		12 - 13		13 - 14		12 - 13		13 - 14		12 - 13		13 - 14		12 - 13		13 - 14	
Lab Sample ID			JC16343-15		JC16343-16		JC16343-17		JC16343-18		JC16343-19		JC16343-20/20R		JC32905-1/1R/1T		JC32905-2		JC32905-3/3R		JC32905-4		JC32905-5		JC32905-6/6T/6TA		JC32905-7/7T/7TA		JC32905-8/8R		JC32905-9/9R		JC32905-10/10R	
Date Sampled			03/15/2016		03/15/2016		03/16/2016		03/16/2016		03/16/2016		03/16/2016		12/05/2016		12/05/2016		12/05/2016		12/05/2016		12/05/2016		12/05/2016		12/05/2016		12/05/2016		12/05/2016		12/05/2016	
Sample Purpose		NJ 2012 MOST	REG		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG	
Parameter Name	Units	STRINGENT SRS	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q
CHROMIUM	mg/kg	NC	674	J	174	J	580	J	1930	J	7310	J	113	J	582	J	5120	J	9150	J	1660	J	1930	J	1030	J	6180	J	1460	J	137	J	288	J
HEXAVALENT CHROMIUM	mg/kg	20	1.7	J	1.1	J	2.7	J	**21.5**	J	10.9	J	**90.9**		1.8		0.56	U	0.57	U	0.56	U	1.9		**33.3**	J	2.2	J	0.53	U	0.57		0.56	U
SULFIDE	mg/kg	NC	5.4	U	4.7	U	4.5	U	5.3	U	7.5	U	4.0	U	5.3	U	684.0		5.6	U	662.0		5.7	U	161.0		279.0		558.0		5.3	U	284.0	

Notes:

NJ 2012 MOST STRINGENT SRS

NC: No criterion established

Bold and underlined concentrations exceed the NJ2012 MOST STRINGENT SRS

Bold and shaded concentrations exceed the NJ 2013 IGW SOIL or both the NJ 2013 IGW SOIL and the NJ 2012 MOST STRINGENT SRS

Italicized values not detected; reporting limit exceeds criteria

Depths reported in feet below ground surface

CONC: Concentration reported in milligrams per kilogram (mg/kg)

J: Estimated concentration

Q: Data qualifier assigned by laboratory or data validator

U: Not detected above method detection limit

**JC32905-1, 6 and 7 plotted on the line that separates the Cr(III) and Cr(VI) stability fields. Statistical examination of the laboratory Eh QC data indicates these samples are not oxidizing with the preferred level of certainty of p = 0.95 or greater (0.85 for these samples). This result coupled with the extremely low recovery of the soluble (-0.3%) and insoluble (9.4%) Cr(VI) spike for QC sample JC3205-1gives the appearance of a reducing character. Additional spikes as high as 3500 mg/kg for this sample failed to recover more than 10% of the Cr(VI) spike

Prepared by: DP 05/31/2016
Reviewed by: JLD 12/15/2016

TABLE 7C

TA-10 In-Situ Soil Samples

Study Area 6 North

Honeywell International Inc.

Jersey City, New Jersey

Location ID			087-SB-715-1213		087-SB-715-1314		087-SB-716-1213		087-SB-716-1314		087-SB-717-1213		087-SB-717-1314		087-SB-718-1213		087-SB-718-1314		087-SB-719-1213		087-SB-719-1314	
Client Sample ID			12 - 13		13 - 14		12 - 13		13 - 14		12 - 13		13 - 14		12 - 13		13 - 14		12 - 13		13 - 14	
Lab Sample ID			JC32905-11		JC32905-12		JC32905-13		JC32905-14		JC32905-15/15R		JC32905-16/16R		JC32905-17		JC32905-18		JC32905-19		JC32905-20	
Date Sampled			12/05/2016		12/05/2016		12/05/2016		12/05/2016		12/05/2016		12/05/2016		12/05/2016		12/05/2016		12/05/2016		12/05/2016	
Sample Purpose		NJ 2012 MOST	REG		REG		REG		REG		REG		REG		REG		REG		REG		REG	
Parameter Name	Units	STRINGENT SRS	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q
CHROMIUM	mg/kg	NC	321	J	701	J	75.9	J	1020	J	168	J	722	J	820	J	3130	J	104	J	3470	J
HEXAVALENT CHROMIUM	mg/kg	20	0.57	U	0.55	U	1	U	0.54	U	0.83	U	0.5	U	0.66	U	0.58	U	0.71	U	0.54	U
SULFIDE	mg/kg	NC	5.5	U	439.0		359.0		897.0		8.0	U	77.0		67.2		287.0		318.0		419.0	

Notes:

NJ 2012 MOST STRINGENT SRS

NC: No criterion established

Bold and underlined concentrations exceed the NJ2012 MOST STRINGENT SRS

Bold and shaded concentrations exceed the NJ 2013 IGW SOIL or both the NJ 2013 IGW SOIL and the NJ 2012 MOST STRINGENT SRS

Italicized values not detected; reporting limit exceeds criteria

Depths reported in feet below ground surface

CONC: Concentration reported in milligrams per kilogram (mg/kg)

J: Estimated concentration

Q: Data qualifier assigned by laboratory or data validator

U: Not detected above method detection limit

**JC32905-1, 6 and 7 plotted on the line that separates the Cr(III) and Cr(VI) stability fields. Statistical examination of the laboratory Eh QC data indicates these samples are not oxidizing with the preferred level of certainty of p = 0.95 or greater (0.85 for these samples). This result coupled with the extremely low recovery of the soluble (-0.3%) and insoluble (9.4%) Cr(VI) spike for QC sample JC3205-1gives the appearance of a reducing character. Additional spikes as high as 3500 mg/kg for this sample failed to recover more than 10% of the Cr(VI) spike

Prepared by: DP 05/31/2016
Reviewed by: JLD 12/15/2016

TABLE 7D

TA-10 In-Situ Groundwater Samples

Study Area 6 North

Honeywell International Inc.

Jersey City, New Jersey

Location ID			087-TWP-37		087-TWP-38		087-TWP-39		087-TWP-40		087-TWP-41		087-MW-132		087-MW-133		087-MW-134		087-TWP-37		087-TWP-38		087-TWP-39		087-TWP-40		087-TWP-41		087-MW-132		087-MW-133	
Client Sample ID			087-TWP-37-081415		087-TWP-38-081415		087-TWP-39-081415		087-TWP-40-081415		087-TWP-41-081415		087-MW-132-081415		087-MW-133-081415		087-MW-134-081415		087-TWP-37-081915		087-TWP-38-081915		087-TWP-39-081915		087-TWP-40-081915		087-TWP-41-081915		087-MW-132-081915		087-MW-133-081915	
Lab Sample ID			JC1623-1		JC1623-2		JC1623-3		JC1623-4		JC1623-5		JC1623-6		JC1623-7		JC1623-8		JC1875-1		JC1875-2		JC1875-3		JC1875-4		JC1875-5		JC1875-6		JC1875-7	
Date Sampled			08/14/2015		08/14/2015		08/14/2015		08/14/2015		08/14/2015		08/14/2015		08/14/2015		08/14/2015		08/19/2015		08/19/2015		08/19/2015		08/19/2015		08/19/2015		08/19/2015		08/19/2015	
Sample Purpose		NJDEP GW Criteria	REG		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG	
Parameter Name	**Units**	**Highest**	**CONC**	**Q**	**CONC**	**Q**	**CONC**	**Q**	**CONC**	**Q**	**CONC**	**Q**	**CONC**	**Q**	**CONC**	**Q**	**CONC**	**Q**	**CONC**	**Q**	**CONC**	**Q**	**CONC**	**Q**	**CONC**	**Q**	**CONC**	**Q**	**CONC**	**Q**	**CONC**	**Q**
SULFATE	mg/L	250	10	U	15.2		10	U	10	U	10	U	10	U	16.0		10	U	10.1		10	U	10	U	10	U	10	U	10	U	10.0	
SULFIDE	mg/L	NC	204		54.0		12.0		2.0	U	4.3		2.0	U	2.0	U	2.0	U	524		98.0		90.0		44.0		23.3		20.0		2.6	

Notes:

NJDEP GW CRITERIA HIGHEST

NC: No criterion established

Bold and shaded concentrations exceed the NJDEP GW CRITERIA HIGHEST

Depths reported in feet below ground surface

CONC: Concentration reported in milligrams per liter (mg/L)

Q: Data qualifier assigned by laboratory or data validator

U: Not detected above method detection limit

Prepared by: DP 06/21/2016

Reviewed by: JLD 12/15/2016

TABLE 7D

TA-10 In-Situ Groundwater Samples

Study Area 6 North

Honeywell International Inc.

Jersey City, New Jersey

Location ID			087-MW-134		087-TWP-37		087-TWP-38		087-TWP-39		087-TWP-40		087-TWP-41		087-MW-132		087-MW-133		087-MW-134		087-TWP-37		087-TWP-38		087-TWP-39		087-TWP-40		087-TWP-41		087-MW-132	
Client Sample ID			087-MW-134-081915		087-TWP-37-091115		087-TWP-38-091115		087-TWP-39-091115		087-TWP-40-091115		087-TWP-41-091115		087-MW-132-091115		087-MW-133-091115		087-MW-134-091115		087-TWP-37-091815		087-TWP-38-091815		087-TWP-39-091815		087-TWP-40-091815		087-TWP-41-091815		087-MW-132-091815	
Lab Sample ID			JC1875-8		JC3675-1		JC3675-2		JC3675-3		JC3675-4		JC3675-5		JC3675-6		JC3675-7		JC3675-8		JC4291-1		JC4291-2		JC4291-3		JC4291-4		JC4291-5		JC4291-6	
Date Sampled			08/19/2015		09/11/2015		09/11/2015		09/11/2015		09/11/2015		09/11/2015		09/11/2015		09/11/2015		09/11/2015		09/18/2015		09/18/2015		09/18/2015		09/18/2015		09/18/2015		09/18/2015	
Sample Purpose		NJDEP GW Criteria	REG		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG	
Parameter Name	Units	Highest	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q
SULFATE	mg/L	250	10	U	35.5		31.6		48.3		10	U	81.4		22.4		10	U	26.5		55.0		164		144		82.7		21.9		85.3	
SULFIDE	mg/L	NC	16.0		123		70.0		180		75.0		681		30.0		10.0		10.0		690		190		76.0		84.0		452		56.0	

Notes:

NJDEP GW CRITERIA HIGHEST

NC: No criterion established

Bold and shaded concentrations exceed the NJDEP GW CRITERIA HIGHEST

Depths reported in feet below ground surface

CONC: Concentration reported in milligrams per liter (mg/L)

Q: Data qualifier assigned by laboratory or data validator

U: Not detected above method detection limit

Prepared by: DP 06/21/2016

Reviewed by: JLD 12/15/2016

TABLE 7D

TA-10 In-Situ Groundwater Samples

Study Area 6 North

Honeywell International Inc.

Jersey City, New Jersey

Location ID			087-MW-133		087-MW-134		087-TWP-37		087-TWP-38		087-TWP-39		087-TWP-40		087-TWP-41		087-MW-132		087-MW-133		087-MW-134		087-TWP-37		087-TWP-38		087-TWP-39		087-TWP-40		087-TWP-41	
Client Sample ID			087-MW-133-091815		087-MW-134-091815		087-TWP-37-092515		087-TWP-38-092515		087-TWP-39-092515		087-TWP-40-092515		087-TWP-41-092515		087-MW-132-092515		087-MW-133-092515		087-MW-134-092515		087-TWP-37-100115		087-TWP-38-100115		087-TWP-39-100115		087-TWP-40-100115		087-TWP-41-100115	
Lab Sample ID			JC4291-7		JC4291-8		JC4761-1		JC4761-2		JC4761-3		JC4761-4		JC4761-5		JC4761-6		JC4761-7		JC4761-8		JC5247-1		JC5247-2		JC5247-3		JC5247-4		JC5247-5	
Date Sampled			09/18/2015		09/18/2015		09/25/2015		09/25/2015		09/25/2015		09/25/2015		09/25/2015		09/25/2015		09/25/2015		09/25/2015		10/01/2015		10/01/2015		10/01/2015		10/01/2015		10/01/2015	
Sample Purpose	NJDEP GW Criteria		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG	
Parameter Name	Units	Highest	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q
SULFATE	mg/L	250	10		10		103		114		52.2		61.6		21.6		82.1		10	U	10	U	169		175		47.0		92.7		33.4	
SULFIDE	mg/L	NC	32.0		28.0		101		39.8		45.8		30.9		158		22.9		3.0		11.0		77.7		47.8		32.9		24.6		101	

Notes:

NJDEP GW CRITERIA HIGHEST

NC: No criterion established

Bold and shaded concentrations exceed the NJDEP GW CRITERIA HIGHEST

Depths reported in feet below ground surface

CONC: Concentration reported in milligrams per liter (mg/L)

Q: Data qualifier assigned by laboratory or data validator

U: Not detected above method detection limit

Prepared by: DP 06/21/2016

Reviewed by: JLD 12/15/2016

TABLE 7D

TA-10 In-Situ Groundwater Samples

Study Area 6 North

Honeywell International Inc.

Jersey City, New Jersey

Location ID			087-MW-132		087-MW-133		087-MW-134		087-TWP-37		087-TWP-38		087-TWP-39		087-TWP-40		087-TWP-41		087-MW-132		087-MW-133		087-MW-134		087-TWP-37		087-TWP-38		087-TWP-39		087-TWP-40	
Client Sample ID			087-MW-132-100115		087-MW-133-100115		087-MW-134-100115		087-TWP-37-100915		087-TWP-38-100915		087-TWP-39-100915		087-TWP-40-100915		087-TWP-41-100915		087-MW-132-100915		087-MW-133-100915		087-MW-134-100915		087-TWP-37-101615		087-TWP-38-101615		087-TWP-39-101615		087-TWP-40-101615	
Lab Sample ID			JC5247-6		JC5247-7		JC5247-8		JC5899-1		JC5899-2		JC5899-3		JC5899-4		JC5899-5		JC5899-6		JC5899-7		JC5899-8		JC6517-1		JC6517-2		JC6517-3		JC6517-4	
Date Sampled			10/01/2015		10/01/2015		10/01/2015		10/09/2015		10/09/2015		10/09/2015		10/09/2015		10/09/2015		10/09/2015		10/09/2015		10/09/2015		10/16/2015		10/16/2015		10/16/2015		10/16/2015	
Sample Purpose		NJDEP GW Criteria	REG		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG	
Parameter Name	Units	Highest	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q
SULFATE	mg/L	250	120		10	U	10	U	218		145		81.1		89.9		85.8		129		10	U	10	U	226		175		41.3		69.7	
SULFIDE	mg/L	NC	25.2		4.5		11.3		41.6		40.4		29.9		57.8		124		27.9		7.3		49.8		131		23.9		13.3		42.5	

Notes:

NJDEP GW CRITERIA HIGHEST

NC: No criterion established

Bold and shaded concentrations exceed the NJDEP GW CRITERIA HIGHEST

Depths reported in feet below ground surface

CONC: Concentration reported in milligrams per liter (mg/L)

Q: Data qualifier assigned by laboratory or data validator

U: Not detected above method detection limit

Prepared by: DP 06/21/2016

Reviewed by: JLD 12/15/2016

TABLE 7D

TA-10 In-Situ Groundwater Samples

Study Area 6 North

Honeywell International Inc.

Jersey City, New Jersey

Location ID			087-TWP-41		087-MW-132		087-MW-133		087-MW-134		087-TWP-37		087-TWP-38		087-TWP-39		087-TWP-40		087-TWP-41		087-MW-132		087-MW-133		087-MW-134		087-TWP-37		087-TWP-38		087-TWP-39	
Client Sample ID			087-TWP-41-101615		087-MW-132-101615		087-MW-133-101615		087-MW-134-101615		087-TWP-37-102315		087-TWP-38-102315		087-TWP-39-102315		087-TWP-40-102315		087-TWP-41-102315		087-MW-132-102315		087-MW-133-102315		087-MW-134-102315		087-TWP-37-103015		087-TWP-38-103015		087-TWP-39-103015	
Lab Sample ID			JC6517-5		JC6517-6		JC6517-7		JC6517-8		JC6985-1		JC6985-2		JC6985-3		JC6985-4		JC6985-5		JC6985-6		JC6985-7		JC6985-8		JC7505-1		JC7505-2		JC7505-3	
Date Sampled			10/16/2015		10/16/2015		10/16/2015		10/16/2015		10/23/2015		10/23/2015		10/23/2015		10/23/2015		10/23/2015		10/23/2015		10/23/2015		10/23/2015		10/30/2015		10/30/2015		10/30/2015	
Sample Purpose		NJDEP GW Criteria	REG		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG	
Parameter Name	Units	Highest	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q
SULFATE	mg/L	250	201		120		10		10		227		231		55.1		29.8		**335**		127		10		10		213		**271**		58.3	
SULFIDE	mg/L	NC	70.7		16.9		5.0		6.6		43.3		39.8		21.9		39.8		45.8		16.6		10		2.0		44.5		37.2		21.2	

Notes:

NJDEP GW CRITERIA HIGHEST

NC: No criterion established

Bold and shaded concentrations exceed the NJDEP GW CRITERIA HIGHEST

Depths reported in feet below ground surface

CONC: Concentration reported in milligrams per liter (mg/L)

Q: Data qualifier assigned by laboratory or data validator

U: Not detected above method detection limit

Prepared by: DP 06/21/2016

Reviewed by: JLD 12/15/2016

TABLE 7D

TA-10 In-Situ Groundwater Samples

Study Area 6 North

Honeywell International Inc.

Jersey City, New Jersey

Location ID			087-TWP-40		087-TWP-41		087-MW-132		087-MW-133		087-MW-134		087-TWP-37		087-TWP-38		087-TWP-39		087-TWP-40		087-TWP-41		087-MW-132		087-MW-133		087-MW-134		087-TWP-37		087-TWP-38	
Client Sample ID			087-TWP-40-103015		087-TWP-41-103015		087-MW-132-103015		087-MW-133-103015		087-MW-134-103015		087-TWP-37-110615		087-TWP-38-110615		087-TWP-39-110615		087-TWP-40-110615		087-TWP-41-110615		087-MW-132-110615		087-MW-133-110615		087-MW-134-110615		087-TWP-37-111315		087-TWP-38-111315	
Lab Sample ID			JC7505-4		JC7505-5		JC7505-6		JC7505-7		JC7505-8		JC8009-1		JC8009-2		JC8009-3		JC8009-4		JC8009-5		JC8009-6		JC8009-7		JC8009-8		JC8523-1		JC8523-2	
Date Sampled			10/30/2015		10/30/2015		10/30/2015		10/30/2015		10/30/2015		11/06/2015		11/06/2015		11/06/2015		11/06/2015		11/06/2015		11/06/2015		11/06/2015		11/06/2015		11/13/2015		11/13/2015	
Sample Purpose		NJDEP GW Criteria	REG		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG	
Parameter Name	Units	Highest	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q
SULFATE	mg/L	250	37.0		**439**		133		10.5		10	U	174		206		61.3		25.2		**483**		118		10	U	10	U	167		226	
SULFIDE	mg/L	NC	42.5		26.9		22.4		2.5		2.0	U	2.0		2.0	U	2.0	U	2.0	U	4.5		3.0		2.0	U	2.0		39.3		28.7	

Notes:

NJDEP GW CRITERIA HIGHEST

NC: No criterion established

Bold and shaded concentrations exceed the NJDEP GW CRITERIA HIGHEST

Depths reported in feet below ground surface

CONC: Concentration reported in milligrams per liter (mg/L)

Q: Data qualifier assigned by laboratory or data validator

U: Not detected above method detection limit

Prepared by: DP 06/21/2016

Reviewed by: JLD 12/15/2016

TABLE 7D

TA-10 In-Situ Groundwater Samples

Study Area 6 North

Honeywell International Inc.

Jersey City, New Jersey

Location ID			087-TWP-39		087-TWP-40		087-TWP-41		087-MW-132		087-MW-133		087-MW-134		087-TWP-37		087-TWP-38		087-TWP-39		087-TWP-40		087-TWP-41		087-MW-132		087-MW-133		087-MW-134		087-MW-132	
Client Sample ID			087-TWP-39-111315		087-TWP-40-111315		087-TWP-41-111315		087-MW-132-111315		087-MW-133-111315		087-MW-134-111315		087-TWP-37-031616		087-TWP-38-031616		087-TWP-39-031616		087-TWP-40-031616		087-TWP-41-031616		087-MW-132-031616		087-MW-133-031616		087-MW-134-031616		087-MW-132-082316	
Lab Sample ID			JC8523-3		JC8523-4		JC8523-5		JC8523-6		JC8523-7		JC8523-8		JC16342-1		JC16342-2		JC16342-3		JC16342-4		JC16342-5		JC16342-6		JC16342-7		JC16342-8		JC26324-6	
Date Sampled			11/13/2015		11/13/2015		11/13/2015		11/13/2015		11/13/2015		11/13/2015		03/16/2016		03/16/2016		03/16/2016		03/16/2016		03/16/2016		03/16/2016		03/16/2016		03/16/2016		08/23/2016	
Sample Purpose		NJDEP GW Criteria	REG		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG	
Parameter Name	Units	Highest	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q
SULFATE	mg/L	250	47.2		22.5		**561**		143		10	U	10	U	10	U	13.2		16.7		10	U	**386**		13.0		10.7		46.6		10	U
SULFIDE	mg/L	NC	15.3		55.3		44.0		19.3		2.0	U	3.3		4.9		5.4		4.1		5.4		6.3		2.0	U	2.0	U	2.0	U	2.3	

Notes:

NJDEP GW CRITERIA HIGHEST

NC: No criterion established

Bold and shaded concentrations exceed the NJDEP GW CRITERIA HIGHEST

Depths reported in feet below ground surface

CONC: Concentration reported in milligrams per liter (mg/L)

Q: Data qualifier assigned by laboratory or data validator

U: Not detected above method detection limit

Prepared by: DP 06/21/2016

Reviewed by: JLD 12/15/2016

TABLE 7D

TA-10 In-Situ Groundwater Samples

Study Area 6 North

Honeywell International Inc.

Jersey City, New Jersey

Location ID			087-MW-133		087-MW-134		087-TWP-37		087-TWP-38		087-TWP-39		087-TWP-40		087-TWP-41		087-MW-132		087-MW-133		087-MW-134		087-TWP-37		087-TWP-38		087-TWP-39		087-TWP-40		087-TWP-41	
Client Sample ID			087-MW-133-082316		087-MW-134-082316		087-TWP-37-082316		087-TWP-38-082316		087-TWP-39-082316		087-TWP-40-082316		087-TWP-41-082316		087-MW-132-091216		087-MW-133-091216		087-MW-134-091216		087-TWP-37-091216		087-TWP-38-091216		087-TWP-39-091216		087-TWP-40-091216		087-TWP-41-091216	
Lab Sample ID			JC26324-7		JC26324-8		JC26324-1		JC26324-2		JC26324-3		JC26324-4		JC26324-5		JC27421-6		JC27421-7		JC27421-8		JC27421-1		JC27421-2		JC27421-3		JC27421-4		JC27421-5	
Date Sampled			08/23/2016		08/23/2016		08/23/2016		08/23/2016		08/23/2016		08/23/2016		08/23/2016		09/12/2016		09/12/2016		09/12/2016		09/12/2016		09/12/2016		09/12/2016		09/12/2016		09/12/2016	
Sample Purpose		NJDEP GW Criteria	REG		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG	
Parameter Name	Units	Highest	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q
SULFATE	mg/L	250	10	U	10	U	10	U	10	U	10	U	10	U	81.7		28.8		10	U	10	U	10	U	10	U	10	U	10	U	115	
SULFIDE	mg/L	NC	2.0	U	2.0	U	5.6		6.3		5.2		4.4		18.9		154		2.0	U	2.0	U	23.1		2.7		2.4		3.6		800	

Notes:

NJDEP GW CRITERIA HIGHEST

NC: No criterion established

Bold and shaded concentrations exceed the NJDEP GW CRITERIA HIGHEST

Depths reported in feet below ground surface

CONC: Concentration reported in milligrams per liter (mg/L)

Q: Data qualifier assigned by laboratory or data validator

U: Not detected above method detection limit

Prepared by: DP 06/21/2016
Reviewed by: JLD 12/15/2016

TABLE 7D

TA-10 In-Situ Groundwater Samples

Study Area 6 North

Honeywell International Inc.

Jersey City, New Jersey

Location ID			087-MW-132		087-MW-133		087-MW-134		087-TWP-37		087-TWP-38		087-TWP-39		087-TWP-40		087-TWP-41		087-MW-132		087-MW-133		087-MW-134		087-TWP-37		087-TWP-38		087-TWP-39		087-TWP-40	
Client Sample ID			087-MW-132-091916		087-MW-133-091916		087-MW-134-091916		087-TWP-37-091916		087-TWP-38-091916		087-TWP-39-091916		087-TWP-40-091916		087-TWP-41-091916		087-MW-132-092616		087-MW-133-092616		087-MW-134-092616		087-TWP-37-092616		087-TWP-38-092616		087-TWP-39-092616		087-TWP-40-092616	
Lab Sample ID			JC27906-6		JC27906-7		JC27906-8		JC27906-1		JC27906-2		JC27906-3		JC27906-4		JC27906-5		JC28401-6		JC28401-7		JC28401-8		JC28401-1		JC28401-2		JC28401-3		JC28401-4	
Date Sampled			09/19/2016		09/19/2016		09/19/2016		09/19/2016		09/19/2016		09/19/2016		09/19/2016		09/19/2016		09/26/2016		09/26/2016		09/26/2016		09/26/2016		09/26/2016		09/26/2016		09/26/2016	
Sample Purpose		NJDEP GW Criteria	REG		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG	
Parameter Name	Units	Highest	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q
SULFATE	mg/L	250	239		12.4		20	U	57.4		10	U	53.4		10	U	**295**		**459**		10	U	10	U	74.4		10	U	34.9		10	U
SULFIDE	mg/L	NC	1140		2.0	U	2.0	U	4.1		3.1		3.0		3.9		2560		1140		2.0	U	12.1		114		73.6		6.0	U	12.4	

Notes:

NJDEP GW CRITERIA HIGHEST

NC: No criterion established

Bold and shaded concentrations exceed the NJDEP GW CRITERIA HIGHEST

Depths reported in feet below ground surface

CONC: Concentration reported in milligrams per liter (mg/L)

Q: Data qualifier assigned by laboratory or data validator

U: Not detected above method detection limit

Prepared by: DP 06/21/2016

Reviewed by: JLD 12/15/2016

TABLE 7D

TA-10 In-Situ Groundwater Samples

Study Area 6 North
Honeywell International Inc.
Jersey City, New Jersey

Location ID			087-TWP-41		087-MW-132		087-MW-133		087-MW-134		087-TWP-37		087-TWP-38		087-TWP-39		087-TWP-40		087-TWP-41		087-MW-132		087-MW-133		087-MW-134		087-TWP-37		087-TWP-38		087-TWP-39	
Client Sample ID			087-TWP-41-092616		087-MW-132-100316		087-MW-133-100316		087-MW-134-100316		087-TWP-37-100316		087-TWP-38-100316		087-TWP-39-100316		087-TWP-40-100316		087-TWP-41-100316		087-MW-132-101016		087-MW-133-101016		087-MW-134-101016		087-TWP-37-101016		087-TWP-38-101016		087-TWP-39-101016	
Lab Sample ID			JC28401-5		JC28833-6		JC28833-7		JC28833-8		JC28833-1		JC28833-2		JC28833-3		JC28833-4		JC28833-5		JC29329-6		JC29329-7		JC29329-8		JC29329-1		JC29329-2		JC29329-3	
Date Sampled			09/26/2016		10/03/2016		10/03/2016		10/03/2016		10/03/2016		10/03/2016		10/03/2016		10/03/2016		10/03/2016		10/10/2016		10/10/2016		10/10/2016		10/10/2016		10/10/2016		10/10/2016	
Sample Purpose	NJDEP GW Criteria		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG	
Parameter Name	Units	Highest	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q
SULFATE	mg/L	250	**437**		**359**		10.3		10	U	92.8		10	U	36.0		10	U	**372**		**368**		18.8		10	U	100		31.0		50.3	
SULFIDE	mg/L	NC	1160		680		2.0	U	4.0	U	8.0	U	4.0	U	4.0	U	4.0	U	1080		2000		2.0	U	3.9		186		26.8		2.0	U

Notes:
NJDEP GW CRITERIA HIGHEST
NC: No criterion established
Bold and shaded concentrations exceed the NJDEP GW CRITERIA HIGHEST
Depths reported in feet below ground surface
CONC: Concentration reported in milligrams per liter (mg/L)
Q: Data qualifier assigned by laboratory or data validator
U: Not detected above method detection limit

Prepared by: DP 06/21/2016
Reviewed by: JLD 12/15/2016

TABLE 7D

TA-10 In-Situ Groundwater Samples

Study Area 6 North

Honeywell International Inc.

Jersey City, New Jersey

Location ID			087-TWP-40		087-TWP-41		087-MW-132		087-MW-133		087-MW-134		087-TWP-37		087-TWP-38		087-TWP-39		087-TWP-40		087-TWP-41		087-MW-132		087-MW-133		087-MW-134		087-TWP-37		087-TWP-38	
Client Sample ID			087-TWP-40-101016		087-TWP-41-101016		087-MW-132-102416		087-MW-133-102416		087-MW-134-102416		087-TWP-37-102416		087-TWP-38-102416		087-TWP-39-102416		087-TWP-40-102416		087-TWP-41-102416		087-MW-132-103116		087-MW-133-103116		087-MW-134-103116		087-TWP-37-103116		087-TWP-38-103116	
Lab Sample ID			JC29329-4		JC29329-5		JC30348-6		JC30348-7		JC30348-8		JC30348-1		JC30348-2		JC30348-3		JC30348-4		JC30348-5		JC30800-6		JC30800-7		JC30800-8		JC30800-1		JC30800-2	
Date Sampled			10/10/2016		10/10/2016		10/24/2016		10/24/2016		10/24/2016		10/24/2016		10/24/2016		10/24/2016		10/24/2016		10/24/2016		10/31/2016		10/31/2016		10/31/2016		10/31/2016		10/31/2016	
Sample Purpose		NJDEP GW Criteria	REG		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG	
Parameter Name	Units	Highest	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q
SULFATE	mg/L	250	10	U	**469**		**1090**		10	U	10	U	120		157		86.3		10	U	**607**		**766**		20.2		23.5		196		247	
SULFIDE	mg/L	NC	18.8		1590		2700		2.0	U	2.0	U	12.4		3.1		2.0	U	2.0	U	832		3210		2.0	U	2.0	U	6.5		150	

Notes:

NJDEP GW CRITERIA HIGHEST

NC: No criterion established

Bold and shaded concentrations exceed the NJDEP GW CRITERIA HIGHEST

Depths reported in feet below ground surface

CONC: Concentration reported in milligrams per liter (mg/L)

Q: Data qualifier assigned by laboratory or data validator

U: Not detected above method detection limit

Prepared by: DP 06/21/2016

Reviewed by: JLD 12/15/2016

TABLE 7D

TA-10 In-Situ Groundwater Samples

Study Area 6 North
Honeywell International Inc.
Jersey City, New Jersey

Location ID			087-TWP-39		087-TWP-40		087-TWP-41		087-MW-132		087-MW-133		087-MW-134		087-TWP-37		087-TWP-38		087-TWP-39		087-TWP-40		087-TWP-41		087-MW-132		087-MW-133		087-MW-134		087-TWP-37	
Client Sample ID			087-TWP-39-103116		087-TWP-40-103116		087-TWP-41-103116		087-MW-132-110716		087-MW-133-110716		087-MW-134-110716		087-TWP-37-110716		087-TWP-38-110716		087-TWP-39-110716		087-TWP-40-110716		087-TWP-41-110716		087-MW-132-120716		087-MW-133-120716		087-MW-134-120716		087-TWP-37-120716	
Lab Sample ID			JC30800-3		JC30800-4		JC30800-5		JC31312-6		JC31312-7		JC31312-8		JC31312-1		JC31312-2		JC31312-3		JC31312-4		JC31312-5		JC33092-6		JC33092-7		JC33092-8		JC33092-1	
Date Sampled			10/31/2016		10/31/2016		10/31/2016		11/07/2016		11/07/2016		11/07/2016		11/07/2016		11/07/2016		11/07/2016		11/07/2016		11/07/2016		12/07/2016		12/07/2016		12/07/2016		12/07/2016	
Sample Purpose		NJDEP GW Criteria	REG		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG	
Parameter Name	Units	Highest	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q
SULFATE	mg/L	250	111		10	U	**739**		**413**		10		23.4		214		176		110		10	U	**978**		**1340**		54.1		19.7		185	
SULFIDE	mg/L	NC	2.0	U	16.5		1380		1700		2.0	U	2.0	U	15.4		256		2.3		7.1		574		760		2.0	U	2.0	U	4.0	U

Notes:
NJDEP GW CRITERIA HIGHEST
NC: No criterion established
Bold and shaded concentrations exceed the NJDEP GW CRITERIA HIGHEST
Depths reported in feet below ground surface
CONC: Concentration reported in milligrams per liter (mg/L)
Q: Data qualifier assigned by laboratory or data validator
U: Not detected above method detection limit

Prepared by: DP 06/21/2016
Reviewed by: JLD 12/15/2016

TABLE 7D

TA-10 In-Situ Groundwater Samples

Study Area 6 North
Honeywell International Inc.
Jersey City, New Jersey

Location ID			087-TWP-38		087-TWP-39		087-TWP-40		087-TWP-41		087-MW-133		087-MW-134	
Client Sample ID			087-TWP-38-120716		087-TWP-39-120716		087-TWP-40-120716		087-TWP-41-120716		087-MW-133-122116		087-MW-134-122116	
Lab Sample ID			JC33092-2		JC33092-3		JC33092-4		JC33092-5		JC34135-1		JC34135-2	
Date Sampled			12/07/2016		12/07/2016		12/07/2016		12/07/2016		12/21/2016		12/21/2016	
Sample Purpose		NJDEP GW Criteria	REG		REG		REG		REG		REG		REG	
Parameter Name	**Units**	**Highest**	**CONC**	**Q**	**CONC**	**Q**	**CONC**	**Q**	**CONC**	**Q**	**CONC**	**Q**	**CONC**	**Q**
SULFATE	mg/L	250	**324**		**278**		10	U	**1120**		56.6		10	U
SULFIDE	mg/L	NC	72.6		2.0	U	4.0	U	282		2.0	U	2.0	U

Notes:
NJDEP GW CRITERIA HIGHEST
NC: No criterion established
Bold and shaded concentrations exceed the NJDEP GW CRITERIA HIGHEST
Depths reported in feet below ground surface
CONC: Concentration reported in milligrams per liter (mg/L)
Q: Data qualifier assigned by laboratory or data validator
U: Not detected above method detection limit

Prepared by: DP 06/21/2016
Reviewed by: JLD 12/15/2016

TABLE 8A

Concrete Sample Results - VOCs

Study Area 6 North

Honeywell International Inc.

Jersey City, New Jersey

						088-WC-C01-051315		088-WC-C02-051315		088-WC-C03-112015		088-WC-C04-011416		088-WC-C05-011416		088-WC-C06-011416		088-WC-C07-011416		088-WC-C08-032316		088-WC-C09-032316		088-WC-C10-032316		087-WC-C19-021814		087-WC-C20-021814	
						JB94630-1		JB94630-2		JC9030-1		JC12656-1		JC12656-2		JC12656-3		JC12656-4		JC16819-1		JC16819-2		JC16819-3		JB60011-1		JB60011-2	
						05/13/2015		05/13/2015		11/20/2015		01/14/2016		01/14/2016		01/14/2016		01/14/2016		03/23/2016		03/23/2016		03/23/2016		02/18/2014		02/18/2014	
						REG		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG	
				NJ 2012 MOST	NJ 2013 IGW																								
Parameter Group Name	Analytical Method	Parameter Name	Units	STRINGENT SRS	SOIL	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q
SA-6 GC/MS Volatiles	SW8260	1,1,1-TRICHLOROETHANE	mg/kg	290	0.3	0.0022	U	0.0018	U	0.002	U	0.0019	U	0.0019	U	0.0018	U	0.0019	U	0.0021	U	0.0014	U	0.0016	U	0.0047	UJ	0.005	U
SA-6 GC/MS Volatiles	SW8260	1,1,2,2-TETRACHLOROETHANE	mg/kg	1	0.007	0.0022	U	0.0018	U	0.002	U	0.0019	U	0.0019	U	0.0018	U	0.0019	U	0.0021	U	0.0014	U	0.0016	U	0.0047	UJ	0.005	U
SA-6 GC/MS Volatiles	SW8260	1,1,2-Trichloro-1,2,2-Trifluoroethane	mg/kg	NC	NC	0.0054	U	0.0046	U	0.005	U	0.0049	U	0.0047	U	0.0046	U	0.0046	U	0.0053	U	0.0036	U	0.0041	U	0.0047	UJ	0.005	U
SA-6 GC/MS Volatiles	SW8260	1,1,2-TRICHLOROETHANE	mg/kg	2	0.02	0.0022	U	0.0018	U	0.002	U	0.0019	U	0.0019	U	0.0018	U	0.0019	U	0.0021	U	0.0014	U	0.0016	U	0.0047	UJ	0.005	U
SA-6 GC/MS Volatiles	SW8260	1,1-DICHLOROETHANE	mg/kg	8	0.2	0.0011	U	0.00092	U	0.001	U	0.00097	U	0.00094	U	0.00091	U	0.00093	U	0.0011	U	0.00072	U	0.00082	U	0.0047	UJ	0.005	U
SA-6 GC/MS Volatiles	SW8260	1,1-DICHLOROETHENE	mg/kg	11	0.008	0.0011	U	0.00092	U	0.001	U	0.00097	U	0.00094	U	0.00091	U	0.00093	U	0.0011	U	0.00072	U	0.00082	U	0.0047	UJ	0.005	U
SA-6 GC/MS Volatiles	SW8260	1,2,3-TRICHLOROBENZENE	mg/kg	NC	NC	0.0054	U	0.0046	U	0.005	U	0.0049	U	0.0047	U	0.0046	U	0.0046	U	0.0053	U	0.0036	U	0.0041	U	0.0047	UJ	0.005	U
SA-6 GC/MS Volatiles	SW8260	1,2,4-TRICHLOROBENZENE	mg/kg	73	0.7	0.0054	U	0.0046	U	0.005	U	0.0049	U	0.0047	U	0.0046	U	0.0046	U	0.0053	U	0.0036	U	0.0041	U	0.0047	UJ	0.005	U
SA-6 GC/MS Volatiles	SW8260	1,2-DIBROMO-3-CHLOROPROPANE	mg/kg	0.08	0.005	0.0022	U	0.0018	U	0.002	U	0.0019	U	0.0019	U	0.0018	U	0.0019	U	0.0021	U	0.0014	U	0.0016	U	0.0094	UJ	0.01	U
SA-6 GC/MS Volatiles	SW8260	1,2-DIBROMOETHANE	mg/kg	0.008	0.005	0.0011	U	0.00092	U	0.001	U	0.00097	U	0.00094	U	0.00091	U	0.00093	U	0.0011	U	0.00072	U	0.00082	U	0.00094	UJ	0.001	U
SA-6 GC/MS Volatiles	SW8260	1,2-DICHLOROBENZENE	mg/kg	5300	17	0.0011	U	0.00092	U	0.001	U	0.00097	U	0.00094	U	0.00091	U	0.00093	U	0.0011	U	0.00072	U	0.00082	U	0.0047	UJ	0.005	U
SA-6 GC/MS Volatiles	SW8260	1,2-DICHLOROETHANE	mg/kg	0.9	0.005	0.0011	U	0.00092	U	0.001	U	0.00097	U	0.00094	U	0.00091	U	0.00093	U	0.0011	U	0.00072	U	0.00082	U	0.00094	UJ	0.001	U
SA-6 GC/MS Volatiles	SW8260	1,2-DICHLOROPROPANE	mg/kg	2	0.005	0.0022	U	0.0018	U	0.002	U	0.0019	U	0.0019	U	0.0018	U	0.0019	U	0.0021	U	0.0014	U	0.0016	U	0.0047	UJ	0.005	U
SA-6 GC/MS Volatiles	SW8260	1,3-DICHLOROBENZENE	mg/kg	5300	19	0.0011	U	0.00092	U	0.001	U	0.00097	U	0.00094	U	0.00091	U	0.00093	U	0.0011	U	0.00072	U	0.00082	U	0.0047	UJ	0.005	U
SA-6 GC/MS Volatiles	SW8260	1,4-DICHLOROBENZENE	mg/kg	5	2	0.0011	U	0.00092	U	0.001	U	0.00097	U	0.00094	U	0.00091	U	0.00093	U	0.0011	U	0.00072	U	0.00082	U	0.0047	UJ	0.005	U
SA-6 GC/MS Volatiles	SW8260	2-BUTANONE	mg/kg	3100	0.9	0.011	U	0.0092	U	0.01	U	0.0097	U	0.0094	U	0.0091	U	0.0093	U	0.011	U	0.0072	U	0.0067	J	0.0094	R	0.01	U
SA-6 GC/MS Volatiles	SW8260	2-HEXANONE	mg/kg	NC	NC	0.0054	U	0.0046	U	0.005	U	0.0049	U	0.0047	U	0.0046	U	0.0046	U	0.0053	U	0.0036	U	0.0041	U	0.0047	UJ	0.005	U
SA-6 GC/MS Volatiles	SW8260	4-METHYL-2-PENTANONE	mg/kg	NC	NC	0.0054	U	0.0046	U	0.005	U	0.0049	U	0.0047	U	0.0046	U	0.0046	U	0.0053	U	0.0036	U	0.0041	U	0.0047	UJ	0.005	U
SA-6 GC/MS Volatiles	SW8260	ACETONE	mg/kg	70000	19	0.009	J	0.01560		0.009	J	0.02770		0.02440		0.01050		0.0057	J	0.01200		0.0056	J	0.02500		0.0179	R	0.01250	
SA-6 GC/MS Volatiles	SW8260	BENZENE	mg/kg	2	0.005	0.00054	U	0.00046	U	0.0002	J	0.00049	U	0.00047	U	0.00046	U	0.00046	U	0.00053	U	0.00036	U	0.00041	U	0.00094	UJ	0.001	U
SA-6 GC/MS Volatiles	SW8260	BROMOCHLOROMETHANE	mg/kg	NC	NC	0.0054	U	0.0046	U	0.005	U	0.0049	U	0.0047	U	0.0046	U	0.0046	U	0.0053	U	0.0036	U	0.0041	U	0.0047	UJ	0.005	U
SA-6 GC/MS Volatiles	SW8260	BROMODICHLOROMETHANE	mg/kg	1	0.005	0.0022	U	0.0018	U	0.002	U	0.0019	U	0.0019	U	0.0018	U	0.0019	U	0.0021	U	0.0014	U	0.0016	U	0.0047	UJ	0.005	U
SA-6 GC/MS Volatiles	SW8260	BROMOFORM	mg/kg	81	0.03	0.0054	U	0.0046	U	0.005	U	0.0049	U	0.0047	U	0.0046	U	0.0046	U	0.0053	U	0.0036	U	0.0041	U	0.0047	UJ	0.005	U
SA-6 GC/MS Volatiles	SW8260	BROMOMETHANE	mg/kg	25	0.04	0.0054	U	0.0046	U	0.005	U	0.0049	U	0.0047	U	0.0046	U	0.0046	U	0.0053	U	0.0036	U	0.0041	U	0.0047	UJ	0.005	U
SA-6 GC/MS Volatiles	SW8260	CARBON DISULFIDE	mg/kg	7800	6	0.0022	U	0.00240		0.00029	J	0.0017	J	0.00033	J	0.0018	U	0.00027	J	0.0021	U	0.0014	U	0.00200		0.0047	UJ	0.00500	U
SA-6 GC/MS Volatiles	SW8260	CARBON TETRACHLORIDE	mg/kg	0.6	0.005	0.0022	U	0.0018	U	0.002	U	0.0019	U	0.0019	U	0.0018	U	0.0019	U	0.0021	U	0.0014	U	0.0016	U	0.0047	UJ	0.005	U
SA-6 GC/MS Volatiles	SW8260	CHLOROBENZENE	mg/kg	510	0.6	0.0022	U	0.0018	U	0.002	U	0.0019	U	0.0019	U	0.0018	U	0.0019	U	0.0021	U	0.0014	U	0.0016	U	0.0047	UJ	0.005	U
SA-6 GC/MS Volatiles	SW8260	CHLOROETHANE	mg/kg	220	NC	0.0054	U	0.0046	U	0.005	U	0.0049	U	0.0047	U	0.0046	U	0.0046	U	0.0053	U	0.0036	U	0.0041	U	0.0047	UJ	0.005	U
SA-6 GC/MS Volatiles	SW8260	CHLOROFORM	mg/kg	0.6	0.4	0.0022	U	0.0018	U	0.002	U	0.0019	U	0.0019	U	0.0018	U	0.0019	U	0.0021	U	0.0014	U	0.0016	U	0.0047	UJ	0.005	U
SA-6 GC/MS Volatiles	SW8260	CHLOROMETHANE	mg/kg	4	NC	0.0054	U	0.0046	U	0.005	U	0.0049	U	0.0047	U	0.0046	U	0.0046	U	0.0053	U	0.0036	U	0.0041	U	0.0047	UJ	0.005	U
SA-6 GC/MS Volatiles	SW8260	CIS-1,2-DICHLOROETHENE	mg/kg	230	0.3	0.0011	U	0.00092	U	0.001	U	0.00097	U	0.00094	U	0.00091	U	0.00093	U	0.0011	U	0.00072	U	0.00082	U	0.0047	UJ	0.005	U
SA-6 GC/MS Volatiles	SW8260	CIS-1,3-DICHLOROPROPENE	mg/kg	NC	NC	0.0022	U	0.0018	U	0.002	U	0.0019	U	0.0019	U	0.0018	U	0.0019	U	0.0021	U	0.0014	U	0.0016	U	0.0047	UJ	0.005	U
SA-6 GC/MS Volatiles	SW8260	CYCLOHEXANE	mg/kg	NC	NC	0.0022	U	0.0018	U	0.002	U	0.0019	U	0.0019	U	0.0018	U	0.0019	U	0.0021	U	0.0014	U	0.0016	U	0.0047	UJ	0.005	U
SA-6 GC/MS Volatiles	SW8260	Dibromochloromethane	mg/kg	3	0.005	0.0022	U	0.0018	U	0.002	U	0.0019	U	0.0019	U	0.0018	U	0.0019	U	0.0021	U	0.0014	U	0.0016	U	0.0047	UJ	0.005	U
SA-6 GC/MS Volatiles	SW8260	DICHLORODIFLUOROMETHANE	mg/kg	490	39	0.0054	U	0.0046	U	0.005	U	0.0049	U	0.0047	U	0.0046	U	0.0046	U	0.0053	U	0.0036	U	0.0041	U	0.0047	UJ	0.005	U
SA-6 GC/MS Volatiles	SW8260	ETHYLBENZENE	mg/kg	7800	13	0.0011	U	0.00092	U	0.001	U	0.00097	U	0.00094	U	0.00091	U	0.00093	U	0.0011	U	0.00072	U	0.00082	U	0.00094	UJ	0.001	U
SA-6 GC/MS Volatiles	SW8260	ISOPROPYLBENZENE	mg/kg	NC	NC	0.0022	U	0.0018	U	0.002	U	0.0019	U	0.0019	U	0.0018	U	0.0019	U	0.0021	U	0.0014	U	0.0016	U	0.0047	UJ	0.005	U
SA-6 GC/MS Volatiles	SW8260	METHYL ACETATE	mg/kg	78000	22	0.0054	U	0.0046	U	0.005	U	0.0049	U	0.0047	U	0.0046	U	0.0046	U	0.0053	U	0.0036	U	0.0041	U	0.0047	UJ	0.005	U
SA-6 GC/MS Volatiles	SW8260	METHYL TERT-BUTYL ETHER	mg/kg	110	0.2	0.0011	U	0.00092	U	0.001	U	0.00097	U	0.00094	U	0.00091	U	0.00093	U	0.0011	U	0.00072	U	0.00082	U	0.00094	UJ	0.001	U
SA-6 GC/MS Volatiles	SW8260	METHYLCYCLOHEXANE	mg/kg	NC	NC	0.0022	U	0.0018	U	0.002	U	0.0019	U	0.0019	U	0.0018	U	0.0019	U	0.0021	U	0.0014	U	0.0016	U	0.0047	UJ	0.005	U
SA-6 GC/MS Volatiles	SW8260	METHYLENE CHLORIDE	mg/kg	34	0.01	0.0054	U	0.0046	U	0.005	U	0.0049	U	0.0047	U	0.0046	U	0.0046	U	0.0012	J	0.0019	J	0.0016	J	0.0016	JJ	0.005	U
SA-6 GC/MS Volatiles	SW8260	O-XYLENE	mg/kg	NC	NC	0.0011	U	0.00092	U	0.001	U	0.00097	U	0.00094	U	0.00091	U	0.00093	U	0.0011	U	0.00072	U	0.00082	U	0.00094	UJ	0.001	U
SA-6 GC/MS Volatiles	SW8260	STYRENE	mg/kg	90	3	0.0022	U	0.0018	U	0.002	U	0.0019	U	0.0019	U	0.0018	U	0.0019	U	0.0021	U	0.0014	U	0.0016	U	0.0047	UJ	0.005	U
SA-6 GC/MS Volatiles	SW8260	TETRACHLOROETHENE	mg/kg	2	0.005	0.0022	U	0.0018	U	0.002	U	0.0019	U	0.0019	U	0.0018	U	0.0019	U	0.0021	U	0.0014	U	0.0016	U	0.0047	UJ	0.005	U
SA-6 GC/MS Volatiles	SW8260	TOLUENE	mg/kg	6300	7	0.0011	U	0.00092	U	0.001	U	0.00097	U	0.00094	U	0.00091	U	0.00093	U	0.0011	U	0.00072	U	0.00082	U	0.00094	UJ	0.001	U
SA-6 GC/MS Volatiles	SW8260	TRANS-1,2-DICHLOROETHENE	mg/kg	300	0.6	0.0011	U	0.00092	U	0.001	U	0.00097	U	0.00094	U	0.00091	U	0.00093	U	0.0011	U	0.00072	U	0.00082	U	0.0047	UJ	0.005	U
SA-6 GC/MS Volatiles	SW8260	TRANS-1,3-DICHLOROPROPENE	mg/kg	NC	NC	0.0022	U	0.0018	U	0.002	U	0.0019	U	0.0019	U	0.0018	U	0.0019	U	0.0021	U	0.0014	U	0.0016	U	0.0047	UJ	0.005	U
SA-6 GC/MS Volatiles	SW8260	TRICHLOROETHENE	mg/kg	7	0.01	0.0011	U	0.00092	U	0.001	U	0.00097	U	0.00094	U	0.00091	U	0.00093	U	0.0011	U	0.00072	U	0.00082	U	0.0047	UJ	0.005	U
SA-6 GC/MS Volatiles	SW8260	TRICHLOROFLUOROMETHANE	mg/kg	23000	34	0.0054	U	0.0046	U	0.005	U	0.0049	U	0.0047	U	0.0046	U	0.0046	U	0.0053	U	0.0036	U	0.0041	U	0.0047	UJ	0.005	U
SA-6 GC/MS Volatiles	SW8260	VINYL CHLORIDE	mg/kg	0.7	0.005	0.0022	U	0.0018	U	0.002	U	0.0019	U	0.0019	U	0.0018	U	0.0019	U	0.0021	U	0.0014	U	0.0016	U	0.0047	UJ	0.005	U
SA-6 GC/MS Volatiles	SW8260	XYLENES, TOTAL	mg/kg	12000	19	0.0011	U	0.00092	U	0.001	U	0.00041	J	0.00094	U	0.00091	U	0.00093	U	0.0011	U	0.00072	U	0.00082	U	0.00094	UJ	0.001	U
SA-6 GC/MS Volatiles	SW8260	TOTAL TICS, ALKANES	mg/kg	NC	NC							0		0.0063	J	0		0		0		0		0		0		0	
SA-6 GC/MS Volatiles	SW8260	TOTAL TICS, VOLATILES	mg/kg	NC	NC							0.0161	J	0.1614	J	0		0.0049	J	0		0		0		0	J	0	

Notes:

NJ 2012 MOST STRINGENT SRS – NJDEP Most Stringent Soil Remediation Standards [N.J.A.C. 7:26D; last amended 5/7/2012].

NJ 2013 IGW SOIL – NJDEP Impact to Groundwater Soil Screening Levels [N.J.A.C. 7:26D; last amended November 2013]

NC: No criterion established

Bold and underlined concentrations exceed the NJ 2012 MOST STRINGENT SRS

Bold and shaded concentrations exceed the NJ 2013 IGW SOIL or both the NJ 2013 IGW SOIL and the NJ 2012 MOST STRINGENT SRS

Depths reported in feet below ground surface

CONC: Concentration reported in milligrams per kilogram (mg/kg)

J: Estimated concentration

Q: Data qualifier assigned by laboratory or data validator

U: Not detected above method detection limit

Results with a value of "0" indicates no TICs were detected

Prepared by: DP 05/25/2016

Reviewed by: JLD 12/15/2016

TABLE 8A

Concrete Sample Results - VOCs

Study Area 6 North

Honeywell International Inc.

Jersey City, New Jersey

						087-WC-C21-021814		087-WC-C22-021814		087-WC-C23-021814		087-WC-C24-021814		087-WC-C25-021814		087-WC-C26-021814		087-WC-C27-021814	
						JB60011-3		JB60011-4		JB60011-5		JB60011-6		JB60011-7		JB60011-8		JB60011-9	
						02/18/2014		02/18/2014		02/18/2014		02/18/2014		02/18/2014		02/18/2014		02/18/2014	
						REG		REG		REG		REG		REG		REG		REG	
Parameter Group Name	Analytical Method	Parameter Name	Units	NJ 2012 MOST STRINGENT SRS	NJ 2013 IGW SOIL	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q
SA-6 GC/MS Volatiles	SW8260	1,1,1-TRICHLOROETHANE	mg/kg	290	0.3	0.0054	U	0.0046	U	0.0046	U	0.005	U	0.0059	U	0.0056	U	0.0051	U
SA-6 GC/MS Volatiles	SW8260	1,1,2,2-TETRACHLOROETHANE	mg/kg	1	0.007	0.0054	U	0.0046	U	0.0046	U	0.005	U	0.0059	U	0.0056	U	0.0051	U
SA-6 GC/MS Volatiles	SW8260	1,1,2-Trichloro-1,2,2-Trifluoroethane	mg/kg	NC	NC	0.0054	U	0.0046	U	0.0046	U	0.005	U	0.0059	U	0.0056	U	0.0051	U
SA-6 GC/MS Volatiles	SW8260	1,1,2-TRICHLOROETHANE	mg/kg	2	0.02	0.0054	U	0.0046	U	0.0046	U	0.005	U	0.0059	U	0.0056	U	0.0051	U
SA-6 GC/MS Volatiles	SW8260	1,1-DICHLOROETHANE	mg/kg	8	0.2	0.0054	U	0.0046	U	0.0046	U	0.005	U	0.0059	U	0.0056	U	0.0051	U
SA-6 GC/MS Volatiles	SW8260	1,1-DICHLOROETHENE	mg/kg	11	0.008	0.0054	U	0.0046	U	0.0046	U	0.005	U	0.0059	U	0.0056	U	0.0051	U
SA-6 GC/MS Volatiles	SW8260	1,2,3-TRICHLOROBENZENE	mg/kg	NC	NC	0.0054	U	0.0046	U	0.0046	U	0.005	U	0.0059	U	0.0056	U	0.0051	U
SA-6 GC/MS Volatiles	SW8260	1,2,4-TRICHLOROBENZENE	mg/kg	73	0.7	0.0054	U	0.0046	U	0.0046	U	0.005	U	0.0059	U	0.0056	U	0.0051	U
SA-6 GC/MS Volatiles	SW8260	1,2-DIBROMO-3-CHLOROPROPANE	mg/kg	0.08	0.005	*0.011*	*U*	*0.0092*	*U*	*0.0092*	*U*	*0.01*	*U*	*0.012*	*U*	*0.011*	*U*	*0.01*	*U*
SA-6 GC/MS Volatiles	SW8260	1,2-DIBROMOETHANE	mg/kg	0.008	0.005	0.0011	U	0.00092	U	0.00092	U	0.001	U	0.0012	U	0.0011	U	0.001	U
SA-6 GC/MS Volatiles	SW8260	1,2-DICHLOROBENZENE	mg/kg	5300	17	0.0054	U	0.0046	U	0.0046	U	0.005	U	0.0059	U	0.0056	U	0.0051	U
SA-6 GC/MS Volatiles	SW8260	1,2-DICHLOROETHANE	mg/kg	0.9	0.005	0.0011	U	0.00092	U	0.00092	U	0.001	U	0.0012	U	0.0011	U	0.001	U
SA-6 GC/MS Volatiles	SW8260	1,2-DICHLOROPROPANE	mg/kg	2	0.005	*0.0054*	*U*	0.0046	U	0.0046	U	0.005	U	*0.0059*	*U*	*0.0056*	*U*	*0.0051*	*U*
SA-6 GC/MS Volatiles	SW8260	1,3-DICHLOROBENZENE	mg/kg	5300	19	0.0054	U	0.0046	U	0.0046	U	0.005	U	0.0059	U	0.0056	U	0.0051	U
SA-6 GC/MS Volatiles	SW8260	1,4-DICHLOROBENZENE	mg/kg	5	2	0.0054	U	0.0046	U	0.0046	U	0.005	U	0.0059	U	0.0056	U	0.0051	U
SA-6 GC/MS Volatiles	SW8260	2-BUTANONE	mg/kg	3100	0.9	0.011	U	0.0092	U	0.0092	U	0.01	U	0.012	U	0.011	U	0.01	U
SA-6 GC/MS Volatiles	SW8260	2-HEXANONE	mg/kg	NC	NC	0.0054	U	0.0046	U	0.0046	U	0.005	U	0.0059	U	0.0056	U	0.0051	U
SA-6 GC/MS Volatiles	SW8260	4-METHYL-2-PENTANONE	mg/kg	NC	NC	0.0054	U	0.0046	U	0.0046	U	0.005	U	0.0059	U	0.0056	U	0.0051	U
SA-6 GC/MS Volatiles	SW8260	ACETONE	mg/kg	70000	19	0.01510		0.01030		0.01170		0.01310		0.01580		0.02960		0.01970	
SA-6 GC/MS Volatiles	SW8260	BENZENE	mg/kg	2	0.005	0.0011	U	0.00092	U	0.00092	U	0.001	U	0.0012	U	0.0011	U	0.001	U
SA-6 GC/MS Volatiles	SW8260	BROMOCHLOROMETHANE	mg/kg	NC	NC	0.0054	U	0.0046	U	0.0046	U	0.005	U	0.0059	U	0.0056	U	0.0051	U
SA-6 GC/MS Volatiles	SW8260	BROMODICHLOROMETHANE	mg/kg	1	0.005	*0.0054*	*U*	0.0046	U	0.0046	U	0.005	U	*0.0059*	*U*	*0.0056*	*U*	*0.0051*	*U*
SA-6 GC/MS Volatiles	SW8260	BROMOFORM	mg/kg	81	0.03	0.0054	U	0.0046	U	0.0046	U	0.005	U	0.0059	U	0.0056	U	0.0051	U
SA-6 GC/MS Volatiles	SW8260	BROMOMETHANE	mg/kg	25	0.04	0.0054	U	0.0046	U	0.0046	U	0.005	U	0.0059	U	0.0056	U	0.0051	U
SA-6 GC/MS Volatiles	SW8260	CARBON DISULFIDE	mg/kg	7800	6	0.00540	U	0.00460	U	0.00160	J	0.00500	U	0.00590	U	0.00560	U	0.00510	U
SA-6 GC/MS Volatiles	SW8260	CARBON TETRACHLORIDE	mg/kg	0.6	0.005	*0.0054*	*U*	0.0046	U	0.0046	U	0.005	U	*0.0059*	*U*	*0.0056*	*U*	*0.0051*	*U*
SA-6 GC/MS Volatiles	SW8260	CHLOROBENZENE	mg/kg	510	0.6	0.0054	U	0.0046	U	0.0046	U	0.005	U	0.0059	U	0.0056	U	0.0051	U
SA-6 GC/MS Volatiles	SW8260	CHLOROETHANE	mg/kg	220	NC	0.0054	U	0.0046	U	0.0046	U	0.005	U	0.0059	U	0.0056	U	0.0051	U
SA-6 GC/MS Volatiles	SW8260	CHLOROFORM	mg/kg	0.6	0.4	0.0054	U	0.0046	U	0.0046	U	0.005	U	0.0059	U	0.0056	U	0.0051	U
SA-6 GC/MS Volatiles	SW8260	CHLOROMETHANE	mg/kg	4	NC	0.0054	U	0.0046	U	0.0046	U	0.005	U	0.0059	U	0.0056	U	0.0051	U
SA-6 GC/MS Volatiles	SW8260	CIS-1,2-DICHLOROETHENE	mg/kg	230	0.3	0.0054	U	0.0046	U	0.0046	U	0.005	U	0.0059	U	0.0056	U	0.0051	U
SA-6 GC/MS Volatiles	SW8260	CIS-1,3-DICHLOROPROPENE	mg/kg	NC	NC	0.0054	U	0.0046	U	0.0046	U	0.005	U	0.0059	U	0.0056	U	0.0051	U
SA-6 GC/MS Volatiles	SW8260	CYCLOHEXANE	mg/kg	NC	NC	0.0054	U	0.0046	U	0.0046	U	0.005	U	0.0059	U	0.0056	U	0.0051	U
SA-6 GC/MS Volatiles	SW8260	Dibromochloromethane	mg/kg	3	0.005	*0.0054*	*U*	0.0046	U	0.0046	U	0.005	U	*0.0059*	*U*	*0.0056*	*U*	*0.0051*	*U*
SA-6 GC/MS Volatiles	SW8260	DICHLORODIFLUOROMETHANE	mg/kg	490	39	0.0054	U	0.0046	U	0.0046	U	0.005	U	0.0059	U	0.0056	U	0.0051	U
SA-6 GC/MS Volatiles	SW8260	ETHYLBENZENE	mg/kg	7800	13	0.0011	U	0.00092	U	0.00092	U	0.001	U	0.0012	U	0.0011	U	0.001	U
SA-6 GC/MS Volatiles	SW8260	ISOPROPYLBENZENE	mg/kg	NC	NC	0.0054	U	0.0046	U	0.0046	U	0.005	U	0.0059	U	0.0056	U	0.0051	U
SA-6 GC/MS Volatiles	SW8260	METHYL ACETATE	mg/kg	78000	22	0.0054	U	0.0046	U	0.0046	U	0.005	U	0.0059	U	0.0056	U	0.0051	U
SA-6 GC/MS Volatiles	SW8260	METHYL TERT-BUTYL ETHER	mg/kg	110	0.2	0.0011	U	0.00092	U	0.00092	U	0.001	U	0.0012	U	0.0011	U	0.001	U
SA-6 GC/MS Volatiles	SW8260	METHYLCYCLOHEXANE	mg/kg	NC	NC	0.0054	U	0.0046	U	0.0046	U	0.005	U	0.0059	U	0.0056	U	0.0051	U
SA-6 GC/MS Volatiles	SW8260	METHYLENE CHLORIDE	mg/kg	34	0.01	0.0054	U	0.0046	U	0.0046	U	0.005	U	0.0059	U	0.0056	U	0.0051	U
SA-6 GC/MS Volatiles	SW8260	O-XYLENE	mg/kg	NC	NC	0.0011	U	0.00092	U	0.00023	J	0.001	U	0.0012	U	0.0011	U	0.001	U
SA-6 GC/MS Volatiles	SW8260	STYRENE	mg/kg	90	3	0.0054	U	0.0046	U	0.0046	U	0.005	U	0.0059	U	0.0056	U	0.0051	U
SA-6 GC/MS Volatiles	SW8260	TETRACHLOROETHENE	mg/kg	2	0.005	*0.0054*	*U*	0.0046	U	0.0046	U	0.005	U	*0.0059*	*U*	*0.0056*	*U*	*0.0051*	*U*
SA-6 GC/MS Volatiles	SW8260	TOLUENE	mg/kg	6300	7	0.0011	U	0.00092	U	0.00092	U	0.001	U	0.0012	U	0.0011	U	0.001	U
SA-6 GC/MS Volatiles	SW8260	TRANS-1,2-DICHLOROETHENE	mg/kg	300	0.6	0.0054	U	0.0046	U	0.0046	U	0.005	U	0.0059	U	0.0056	U	0.0051	U
SA-6 GC/MS Volatiles	SW8260	TRANS-1,3-DICHLOROPROPENE	mg/kg	NC	NC	0.0054	U	0.0046	U	0.0046	U	0.005	U	0.0059	U	0.0056	U	0.0051	U
SA-6 GC/MS Volatiles	SW8260	TRICHLOROETHENE	mg/kg	7	0.01	0.0054	U	0.0046	U	0.0046	U	0.005	U	0.0059	U	0.0056	U	0.0051	U
SA-6 GC/MS Volatiles	SW8260	TRICHLOROFLUOROMETHANE	mg/kg	23000	34	0.0054	U	0.0046	U	0.0046	U	0.005	U	0.0059	U	0.0056	U	0.0051	U
SA-6 GC/MS Volatiles	SW8260	VINYL CHLORIDE	mg/kg	0.7	0.005	*0.0054*	*U*	0.0046	U	0.0046	U	0.005	U	*0.0059*	*U*	*0.0056*	*U*	*0.0051*	*U*
SA-6 GC/MS Volatiles	SW8260	XYLENES, TOTAL	mg/kg	12000	19	0.0011	U	0.00092	U	0.00023	J	0.001	U	0.0012	U	0.0011	U	0.001	U
SA-6 GC/MS Volatiles	SW8260	TOTAL TICS, ALKANES	mg/kg	NC	NC	0		0		0		0		0		0		0	
SA-6 GC/MS Volatiles	SW8260	TOTAL TICS, VOLATILES	mg/kg	NC	NC	0		0		0		0		0		0		0	

Notes:

NJ 2012 MOST STRINGENT SRS – NJDEP Most Stringent Soil Remediation Standards [N.J.A.C. 7:26D; last amended 5/7/2012].

NJ 2013 IGW SOIL – NJDEP Impact to Groundwater Soil Screening Levels [N.J.A.C. 7:26D; last amended November 2013]

NC: No criterion established

Bold and underlined concentrations exceed the NJ 2012 MOST STRINGENT SRS

Bold and shaded concentrations exceed the NJ 2013 IGW SOIL or both the NJ 2013 IGW SOIL and the NJ 2012 MOST STRINGENT SRS

Depths reported in feet below ground surface

CONC: Concentration reported in milligrams per kilogram (mg/kg)

J: Estimated concentration

Q: Data qualifier assigned by laboratory or data validator

U: Not detected above method detection limit

Results with a value of "0" indicates no TICs were detected

Prepared by: DP 05/25/2016

Reviewed by: JLD 12/15/2016

TABLE 8B

Concrete Sample Results - SVOCs

Study Area 6 North

Honeywell International Inc.

Jersey City, New Jersey

						Client Sample ID		088-WC-C01-051315		088-WC-C02-051315		088-WC-C03-112015		088-WC-C04-011416		088-WC-C05-011416		088-WC-C06-011416		088-WC-C07-011416		088-WC-C08-032316		088-WC-C09-032316		088-WC-C10-032316		087-WC-C19-021814		087-WC-C20-021814		087-WC-C21-021814	
						Lab Sample ID		JB94630-1		JB94630-2		JC9030-1		JC12656-1		JC12656-2		JC12656-3		JC12656-4		JC16819-1		JC16819-2		JC16819-3		JB60011-1		JB60011-2		JB60011-3	
						Date Sampled		05/13/2015		05/13/2015		11/20/2015		01/14/2016		01/14/2016		01/14/2016		01/14/2016		03/23/2016		03/23/2016		03/23/2016		02/18/2014		02/18/2014		02/18/2014	
						Sample Purpose	NJ 2012 MOST	REG		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG	
Parameter Group Name	Analytical Method	Parameter Name	Units	NJ 2012 MOST STRINGENT SRS	NJ 2013 IGW SOIL			CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q
SA-6 GC/MS Semi-Volatiles	SW8270	1,1'-BIPHENYL	mg/kg	3100	140			0.068	U	0.066	U	0.07	U	0.068	U	0.069	U	0.069	U	0.069	U	0.068	U	0.069	U	0.068	U	0.072	U	0.075	U	0.07	U
SA-6 GC/MS Semi-Volatiles	SW8270	1,2,4,5-TETRACHLOROBENZENE	mg/kg	NC	NC			0.17	U	0.16	U	0.17	U	0.17	U	0.17	U	0.17	U	0.17	U	0.17	U	0.17	U	0.17	U	0.18	U	0.19	U	0.18	U
SA-6 GC/MS Semi-Volatiles	SW8270	1,4-DIOXANE	mg/kg	NC	NC			0.034	U	0.033	U	0.035	U	0.034	U	0.034	U	0.035	U	0.034	U	0.034	U	0.035	U	0.034	U	0.036	U	0.037	U	0.035	U
SA-6 GC/MS Semi-Volatiles	SW8270	2,2'-OXYBIS(1-CHLOROPROPANE)	mg/kg	23	5			0.068	U	0.066	U	0.07	U	0.068	U	0.069	U	0.069	U	0.069	U	0.068	U	0.069	U	0.068	U	0.072	U	0.075	U	0.07	U
SA-6 GC/MS Semi-Volatiles	SW8270	2,3,4,6-TETRACHLOROPHENOL	mg/kg	NC	NC			0.17	U	0.16	U	0.17	UJ	0.17	U	0.17	U	0.17	U	0.17	U	NT		0.17	U	0.17	U	0.18	U	0.19	U	0.18	U
SA-6 GC/MS Semi-Volatiles	SW8270	2,4,5-TRICHLOROPHENOL	mg/kg	6100	68			0.17	U	0.16	U	0.17	U	0.17	U	0.17	U	0.17	U	0.17	U	NT		0.17	U	0.17	U	0.18	U	0.19	U	0.18	U
SA-6 GC/MS Semi-Volatiles	SW8270	2,4,6-TRICHLOROPHENOL	mg/kg	19	0.2			0.17	U	0.16	U	0.17	U	0.17	U	0.17	U	0.17	U	0.17	U	NT		0.17	U	0.17	U	0.18	U	0.19	U	0.18	U
SA-6 GC/MS Semi-Volatiles	SW8270	2,4-DICHLOROPHENOL	mg/kg	180	0.2			0.17	U	0.16	U	0.17	U	0.17	U	0.17	U	0.17	U	0.17	U	NT		0.17	U	0.17	U	0.18	U	0.19	U	0.18	U
SA-6 GC/MS Semi-Volatiles	SW8270	2,4-DIMETHYLPHENOL	mg/kg	1200	1			0.17	U	0.16	U	0.17	U	0.17	U	0.17	U	0.17	U	0.17	U	NT		0.17	U	0.17	U	0.18	U	0.19	U	0.18	U
SA-6 GC/MS Semi-Volatiles	SW8270	2,4-DINITROPHENOL	mg/kg	120	0.3			0.17	U	0.16	U	0.17	UJ	0.17	U	0.17	U	0.17	U	0.17	U	NT		0.17	U	0.17	U	*0.72*	*U*	*0.75*	*U*	*0.7*	*U*
SA-6 GC/MS Semi-Volatiles	SW8270	2,4-DINITROTOLUENE	mg/kg	0.7	NC			0.034	U	0.033	U	0.035	UJ	0.034	U	0.034	U	0.035	U	0.034	U	0.034	U	0.035	U	0.034	U	0.036	U	0.037	U	0.035	U
SA-6 GC/MS Semi-Volatiles	SW8270	2,6-DINITROTOLUENE	mg/kg	0.7	NC			0.034	U	0.033	U	0.035	U	0.034	U	0.034	U	0.035	U	0.034	U	0.034	U	0.035	U	0.034	U	0.036	U	0.037	U	0.035	U
SA-6 GC/MS Semi-Volatiles	SW8270	2-CHLORONAPHTHALENE	mg/kg	NC	NC			0.068	U	0.066	U	0.07	U	0.068	U	0.069	U	0.069	U	0.069	U	0.068	U	0.069	U	0.068	U	0.072	U	0.075	U	0.07	U
SA-6 GC/MS Semi-Volatiles	SW8270	2-CHLOROPHENOL	mg/kg	310	0.8			0.068	U	0.066	U	0.07	U	0.068	U	0.069	U	0.069	U	0.069	U	NT		0.069	U	0.068	U	0.072	U	0.075	U	0.07	U
SA-6 GC/MS Semi-Volatiles	SW8270	2-METHYLNAPHTHALENE	mg/kg	230	8			0.068	U	0.066	U	0.07	U	0.068	U	0.069	U	0.069	U	0.069	U	0.068	U	0.069	U	0.068	U	0.072	U	0.075	U	0.07	U
SA-6 GC/MS Semi-Volatiles	SW8270	2-METHYLPHENOL	mg/kg	310	NC			0.068	U	0.066	U	0.07	U	0.068	U	0.069	U	0.069	U	0.069	U	NT		0.069	U	0.068	U	0.072	U	0.075	U	0.07	U
SA-6 GC/MS Semi-Volatiles	SW8270	2-NITROANILINE	mg/kg	39	NC			0.17	UJ	0.16	U	0.17	U	0.17	U	0.17	U	0.17	U	0.17	U	0.17	U	0.17	U	0.17	U	0.18	UJ	0.19	U	0.18	U
SA-6 GC/MS Semi-Volatiles	SW8270	2-NITROPHENOL	mg/kg	NC	NC			0.17	U	0.16	U	0.17	U	0.17	U	0.17	U	0.17	U	0.17	U	NT		0.17	U	0.17	U	0.18	U	0.19	U	0.18	U
SA-6 GC/MS Semi-Volatiles	SW8270	3&4-METHYLPHENOL	mg/kg	NC	NC			0.068	U	0.066	U	0.07	U	0.068	U	0.069	U	0.069	U	0.069	U	NT		0.069	U	0.068	U	0.072	U	0.075	U	0.07	U
SA-6 GC/MS Semi-Volatiles	SW8270	3,3'-DICHLOROBENZIDINE	mg/kg	1	0.2			0.068	U	0.066	U	0.07	U	0.068	U	0.069	U	0.069	U	0.069	U	0.068	U	0.069	U	0.068	U	0.072	U	0.075	U	0.07	U
SA-6 GC/MS Semi-Volatiles	SW8270	3-NITROANILINE	mg/kg	NC	NC			0.17	U	0.16	U	0.17	U	0.17	U	0.17	U	0.17	U	0.17	U	0.17	U	0.17	U	0.17	U	0.18	U	0.19	U	0.18	U
SA-6 GC/MS Semi-Volatiles	SW8270	4,6-DINITRO-2-METHYLPHENOL	mg/kg	6	0.3			0.17	U	0.16	U	0.17	U	0.17	U	0.17	U	0.17	U	0.17	U	NT		0.17	U	0.17	U	*0.72*	*U*	*0.75*	*U*	*0.7*	*U*
SA-6 GC/MS Semi-Volatiles	SW8270	4-BROMOPHENYL PHENYL ETHER	mg/kg	NC	NC			0.068	U	0.066	U	0.07	U	0.068	U	0.069	U	0.069	U	0.069	U	0.068	U	0.069	U	0.068	U	0.072	U	0.075	U	0.07	U
SA-6 GC/MS Semi-Volatiles	SW8270	4-CHLORO-3-METHYLPHENOL	mg/kg	NC	NC			0.17	U	0.16	U	0.17	U	0.17	U	0.17	U	0.17	U	0.17	U	NT		0.17	U	0.17	U	0.18	U	0.19	U	0.18	U
SA-6 GC/MS Semi-Volatiles	SW8270	4-CHLOROANILINE	mg/kg	NC	NC			0.17	U	0.16	U	0.17	U	0.17	U	0.17	U	0.17	U	0.17	U	0.17	U	0.17	U	0.17	U	0.18	U	0.19	U	0.18	U
SA-6 GC/MS Semi-Volatiles	SW8270	4-CHLOROPHENYL PHENYL ETHER	mg/kg	NC	NC			0.068	U	0.066	U	0.07	U	0.068	U	0.069	U	0.069	U	0.069	U	0.068	U	0.069	U	0.068	U	0.072	U	0.075	U	0.07	U
SA-6 GC/MS Semi-Volatiles	SW8270	4-NITROANILINE	mg/kg	NC	NC			0.17	U	0.16	U	0.17	U	0.17	U	0.17	U	0.17	U	0.17	U	0.17	U	0.17	U	0.17	U	0.18	U	0.19	U	0.18	U
SA-6 GC/MS Semi-Volatiles	SW8270	4-NITROPHENOL	mg/kg	NC	NC			0.34	UJ	0.33	U	0.35	UJ	0.34	U	0.34	U	0.35	U	0.34	U	NT		0.35	U	0.34	U	0.36	UJ	0.37	U	0.35	U
SA-6 GC/MS Semi-Volatiles	SW8270	ACENAPHTHENE	mg/kg	3400	110			0.034	U	0.033	U	0.035	U	0.034	U	0.034	U	0.035	U	0.034	U	0.034	U	0.035	U	0.034	U	0.036	U	0.037	U	0.035	U
SA-6 GC/MS Semi-Volatiles	SW8270	ACENAPHTHYLENE	mg/kg	300000	NC			0.034	U	0.033	U	0.035	U	0.034	U	0.034	U	0.035	U	0.034	U	0.034	U	0.035	U	0.034	U	0.036	U	0.037	U	0.035	U
SA-6 GC/MS Semi-Volatiles	SW8270	ACETOPHENONE	mg/kg	2	3			0.17	U	0.16	U	NT		NT		NT		NT		NT		NT		NT		NT		0.18	U	0.19	U	0.18	U
SA-6 GC/MS Semi-Volatiles	SW8270	ANTHRACENE	mg/kg	17000	2400			0.034	U	0.033	U	0.035	U	0.034	U	0.034	U	0.035	U	0.034	U	0.034	U	0.035	U	0.034	U	0.036	U	0.037	U	0.035	U
SA-6 GC/MS Semi-Volatiles	SW8270	ATRAZINE	mg/kg	210	0.2			0.068	U	0.066	U	0.07	UJ	0.068	U	0.069	U	0.069	U	0.069	U	0.068	U	0.069	U	0.068	U	0.072	U	0.075	U	0.07	U
SA-6 GC/MS Semi-Volatiles	SW8270	BENZALDEHYDE	mg/kg	6100	NC			0.17	U	0.16	U	0.17	U	0.17	U	0.17	U	0.17	U	0.17	U	0.17	U	0.17	U	0.17	U	0.18	U	0.19	U	0.18	U
SA-6 GC/MS Semi-Volatiles	SW8270	BENZO(A)ANTHRACENE	mg/kg	0.6	0.8			0.034	U	0.033	U	0.035	U	0.034	U	0.034	U	0.035	U	0.034	U	0.034	U	0.0193	J	0.0226	J	0.036	U	0.037	U	0.035	U
SA-6 GC/MS Semi-Volatiles	SW8270	BENZO(A)PYRENE	mg/kg	0.2	0.2			0.034	U	0.033	U	0.035	U	0.034	U	0.034	U	0.035	U	0.034	U	0.034	U	0.0173	J	0.0246	J	0.036	U	0.037	U	0.035	U
SA-6 GC/MS Semi-Volatiles	SW8270	BENZO(B)FLUORANTHENE	mg/kg	0.6	2			0.034	U	0.033	U	0.035	U	0.034	U	0.034	U	0.035	U	0.034	U	0.034	U	0.0267	J	0.0386		0.036	U	0.037	U	0.035	U
SA-6 GC/MS Semi-Volatiles	SW8270	BENZO(G,H,I)PERYLENE	mg/kg	30000	NC			0.034	U	0.033	U	0.035	U	0.034	U	0.034	U	0.035	U	0.034	U	0.034	U	0.035	U	0.0187	J	0.036	U	0.037	U	0.035	U
SA-6 GC/MS Semi-Volatiles	SW8270	BENZO(K)FLUORANTHENE	mg/kg	6	25			0.034	U	0.033	U	0.035	U	0.034	U	0.034	U	0.035	U	0.034	U	0.034	U	0.035	U	0.0157	J	0.036	U	0.037	U	0.035	U
SA-6 GC/MS Semi-Volatiles	SW8270	BIS(2-CHLOROETHOXY)METHANE	mg/kg	NC	NC			0.068	U	0.066	U	0.07	U	0.068	U	0.069	U	0.069	U	0.069	U	0.068	U	0.069	U	0.068	U	0.072	U	0.075	U	0.07	U
SA-6 GC/MS Semi-Volatiles	SW8270	BIS(2-CHLOROETHYL)ETHER	mg/kg	0.4	0.2			0.068	U	0.066	U	0.07	U	0.068	U	0.069	U	0.069	U	0.069	U	0.068	U	0.069	U	0.068	U	0.072	U	0.075	U	0.07	U
SA-6 GC/MS Semi-Volatiles	SW8270	BIS(2-ETHYLHEXYL)PHTHALATE	mg/kg	35	1200			0.0348	J	0.0421	J	0.07	U	0.068	U	0.069	U	0.069	U	0.069	U	0.068	U	0.069	U	0.068	U	0.0636	J	0.102		0.0856	
SA-6 GC/MS Semi-Volatiles	SW8270	BUTYLBENZYL PHTHALATE	mg/kg	1200	230			0.068	U	0.066	U	0.07	U	0.068	U	0.069	U	0.069	U	0.069	U	0.068	UJ	0.069	U	0.068	U	0.072	U	0.075	U	0.07	U
SA-6 GC/MS Semi-Volatiles	SW8270	CAPROLACTAM	mg/kg	31000	12			0.068	U	0.066	U	0.07	U	0.068	U	0.069	U	0.069	U	0.069	U	0.068	U	0.069	U	0.068	U	0.072	U	0.075	U	0.07	U
SA-6 GC/MS Semi-Volatiles	SW8270	CARBAZOLE	mg/kg	24	NC			0.068	U	0.066	U	0.07	U	0.068	U	0.069	U	0.069	U	0.069	U	0.068	U	0.069	U	0.068	U	0.072	U	0.075	U	0.07	U
SA-6 GC/MS Semi-Volatiles	SW8270	CHRYSENE	mg/kg	62	80			0.034	U	0.033	U	0.035	U	0.034	U	0.034	U	0.035	U	0.034	U	0.034	U	0.0199	J	0.0254	J	0.036	U	0.037	U	0.035	U
SA-6 GC/MS Semi-Volatiles	SW8270	DI-N-BUTYL PHTHALATE	mg/kg	6100	760			0.068	U	0.11		0.07	U	0.068	U	0.069	U	0.069	U	0.069	U	0.068	U	0.069	U	0.068	U	0.072	U	0.075	U	0.07	U
SA-6 GC/MS Semi-Volatiles	SW8270	DI-N-OCTYL PHTHALATE	mg/kg	2400	3300			0.068	U	0.066	U	0.07	U	0.068	U	0.069	U	0.069	U	0.069	U	0.068	UJ	0.069	U	0.068	U	0.072	U	0.075	U	0.07	U
SA-6 GC/MS Semi-Volatiles	SW8270	DIBENZO(A,H)ANTHRACENE	mg/kg	0.2	0.8			0.034	U	0.033	U	0.035	U	0.034	U	0.034	U	0.035	U	0.034	U	0.034	U	0.035	U	0.034	U	0.036	U	0.037	U	0.035	U
SA-6 GC/MS Semi-Volatiles	SW8270	DIBENZOFURAN	mg/kg	NC	NC			0.068	U	0.066	U	0.07	U	0.068	U	0.069	U	0.069	U	0.069	U	0.068	U	0.069	U	0.068	U	0.072	U	0.075	U	0.07	U
SA-6 GC/MS Semi-Volatiles	SW8270	DIETHYL PHTHALATE	mg/kg	49000	88			0.068	U	0.066	U	0.07	U	0.068	U	0.069	U	0.069	U	0.069	U	0.068	U	0.069	U	0.068	U	0.072	U	0.075	U	0.07	U
SA-6 GC/MS Semi-Volatiles	SW8270	DIMETHYL PHTHALATE	mg/kg	NC	NC			0.068	U	0.066	U	0.07	U	0.068	U	0.069	U	0.069	U	0.069	U	0.068	U	0.069	U	0.068	U	0.072	U	0.075	U	0.07	U
SA-6 GC/MS Semi-Volatiles	SW8270	FLUORANTHENE	mg/kg	2300	1300			0.034	U	0.033	U	0.035	U	0.034	U	0.034	U	0.014	J	0.034	U	0.034	U	0.0395		0.04		0.036	U	0.0181	J	0.035	U
SA-6 GC/MS Semi-Volatiles	SW8270	FLUORENE	mg/kg	2300	170			0.034	U	0.033	U	0.035	U	0.034	U	0.034	U	0.035	U	0.034	U	0.034	U	0.035	U	0.034	U	0.036	U	0.037	U	0.035	U
SA-6 GC/MS Semi-Volatiles	SW8270	HEXACHLOROBENZENE	mg/kg	0.3	0.2			0.068	U	0.066	U	0.07	U	0.068	U	0.069	U	0.069	U	0.069	U	0.068	U	0.069	U	0.068	U	0.072	U	0.075	U	0.07	U
SA-6 GC/MS Semi-Volatiles	SW8270	HEXACHLOROBUTADIENE	mg/kg	6	0.9			0.034	UJ	0.033	U	0.035	UJ	0.034	U	0.034	U	0.035	U	0.034	U	0.034	U	0.035	U	0.034	U	0.036	U	0.037	U	0.035	U
SA-6 GC/MS Semi-Volatiles	SW8270	HEXACHLOROCYCLOPENTADIENE	mg/kg	45	320			0.34	UJ	0.33	U	0.35	UJ	0.34	U	0.34	U	0.35	U	0.34	U	0.34	U	0.35	U	0.34	U	0.36	UJ	0.37	U	0.35	U
SA-6 GC/MS Semi-Volatiles	SW8270	HEXACHLOROETHANE	mg/kg	35	0.2			0.17	U	0.16	U	0.17	U	0.17	U	0.17	U	0.17	U	0.17	U	0.17	U	0.17	U	0.17	U	0.18	U	0.19	U	0.18	U
SA-6 GC/MS Semi-Volatiles	SW8270	INDENO(1,2,3-CD)PYRENE	mg/kg	0.6	7			0.034	U	0.033	U	0.035	U	0.034	U	0.034	U	0.035	U	0.034	U	0.034	U	0.035	U	0.0183	J	0.036	U	0.037	U	0.035	U
SA-6 GC/MS Semi-Volatiles	SW8270	ISOPHORONE	mg/kg	510	0.2			0.068	U	0.066	U	**9.35**		0.0434	J	0.0464	J	0.117		0.0388	J	**0.477**		**1.07**		0.0752		0.072	U	0.075	U	0.07	U
SA-6 GC/MS Semi-Volatiles	SW8270	N-NITROSO-DI-N-PROPYLAMINE	mg/kg	0.2	0.2			0.068	U	0.066	U	0.07	U	0.068	U	0.069	U	0.069	U	0.069	U	0.068	U	0.069	U	0.068	U	0.072	U	0.075	U	0.07	U
SA-6 GC/MS Semi-Volatiles	SW8270	N-NITROSODIPHENYLAMINE	mg/kg	99	0.4			0.17	U	0.16	U	0.17	U	0.17	U	0.17	U	0.17	U	0.17	U	0.17	U	0.17	U	0.17	U	0.18	U	0.19	U	0.18	U
SA-6 GC/MS Semi-Volatiles	SW8270	NAPHTHALENE	mg/kg	6	25			0.034	U	0.033	U	0.035	U	0.034	U	0.034	U	0.035	U	0.034	U	0.034	U	0.035	U	0.034	U	0.036	U	0.037	U	0.035	U
SA-6 GC/MS Semi-Volatiles	SW8270	NITROBENZENE	mg/kg	31	0.2			0.068	U	0.066	U	0.07	U	0.068	U	0.069	U	0.069	U	0.069	U	0.068	U	0.069	U	0.068	U	0.072	U	0.075	U	0.07	U
SA-6 GC/MS Semi-Volatiles	SW8270	PHENANTHRENE	mg/kg	300000	NC			0.0204	J	0.033	U	0.0138	J	0.034	U	0.034	U	0.0161	J	0.034	U	0.034	U	0.0402		0.0219	J	0.036	U	0.037	U	0.035	U
SA-6 GC/MS Semi-Volatiles	SW8270	PHENOL	mg/kg	18000	8			0.068	U	0.066	U	0.07	U	0.068	U	0.069	U	0.069	U	0.069	U	NT		0.069	U	0.068	U	0.072	U	0.075	U	0.07	U
SA-6 GC/MS Semi-Volatiles	SW8270	PYRENE	mg/kg	1700	840			0.015	J	0.033	U	0.035	U	0.034	U	0.034	U	0.035	U	0.034	U	0.034	U	0.0369		0.0403		0.036	U	0.0159	J	0.035	U
SA-6 GC/MS Semi-Volatiles	SW8270	TOTAL TICS, ALKANES	mg/kg	NC	NC									0		0		0		0		0		0		0		0		0		0	
SA-6 GC/MS Semi-Volatiles	SW8270	TOTAL TICS, SEMI-VOLATILES	mg/kg	NC	NC									0.71	J	0.68	J	2.87	J	0.26	J	6.34	J	7.02	J	3.02	J	0.25	J	0.53	J	0.18	J

Notes:

NJ 2012 MOST STRINGENT SRS – NJDEP Most Stringent Soil Remediation Standards [N.J.A.C. 7:26D; last amended 5/7/2012].

NJ 2013 IGW SOIL – NJDEP Impact to Groundwater Soil Screening Levels [N.J.A.C. 7:26D; last amended November 2013]

NC: No criterion established

Bold and underlined concentrations exceed the NJ 2012 MOST STRINGENT SRS

Bold and shaded concentrations exceed the NJ 2013 IGW SOIL or both the NJ 2013 IGW SOIL and the NJ 2012 MOST STRINGENT SRS

Depths reported in feet below ground surface

CONC: Concentration reported in milligrams per kilogram (mg/kg)

J: Estimated concentration

NT: Not tested

Q: Data qualifier assigned by laboratory or data validator

U: Not detected above method detection limit

Results with a value of "0" indicates no TICs were detected

Prepared by: DP 05/25/2016

Reviewed by: JLD 12/15/2016

TABLE 8B

Concrete Sample Results - SVOCs

Study Area 6 North

Honeywell International Inc.

Jersey City, New Jersey

						087-WC-C22-021814		087-WC-C23-021814		087-WC-C24-021814		087-WC-C25-021814		087-WC-C26-021814		087-WC-C27-021814	
						JB60011-4		JB60011-5		JB60011-6		JB60011-7		JB60011-8		JB60011-9	
						02/18/2014		02/18/2014		02/18/2014		02/18/2014		02/18/2014		02/18/2014	
						REG		REG		REG		REG		REG		REG	
Parameter Group Name	Analytical Method	Parameter Name	Units	NJ 2012 MOST STRINGENT SRS	NJ 2013 IGW SOIL	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q
SA-6 GC/MS Semi-Volatiles	SW8270	1,1'-BIPHENYL	mg/kg	3100	140	0.076	U	0.071	U	0.073	U	0.068	U	0.072	U	0.078	U
SA-6 GC/MS Semi-Volatiles	SW8270	1,2,4,5-TETRACHLOROBENZENE	mg/kg	NC	NC	0.19	U	0.18	U	0.18	U	0.17	U	0.18	U	0.2	U
SA-6 GC/MS Semi-Volatiles	SW8270	1,4-DIOXANE	mg/kg	NC	NC	0.038	U	0.035	U	0.037	U	0.034	U	0.036	U	0.039	U
SA-6 GC/MS Semi-Volatiles	SW8270	2,2'-OXYBIS(1-CHLOROPROPANE)	mg/kg	23	5	0.076	U	0.071	U	0.073	U	0.068	U	0.072	U	0.078	U
SA-6 GC/MS Semi-Volatiles	SW8270	2,3,4,6-TETRACHLOROPHENOL	mg/kg	NC	NC	0.19	U	0.18	U	0.18	U	0.17	U	0.18	U	0.2	U
SA-6 GC/MS Semi-Volatiles	SW8270	2,4,5-TRICHLOROPHENOL	mg/kg	6100	68	0.19	U	0.18	U	0.18	U	0.17	U	0.18	U	0.2	U
SA-6 GC/MS Semi-Volatiles	SW8270	2,4,6-TRICHLOROPHENOL	mg/kg	19	0.2	0.19	U	0.18	U	0.18	U	0.17	U	0.18	U	0.2	U
SA-6 GC/MS Semi-Volatiles	SW8270	2,4-DICHLOROPHENOL	mg/kg	180	0.2	0.19	U	0.18	U	0.18	U	0.17	U	0.18	U	0.2	U
SA-6 GC/MS Semi-Volatiles	SW8270	2,4-DIMETHYLPHENOL	mg/kg	1200	1	0.19	U	0.18	U	0.18	U	0.17	U	0.18	U	0.2	U
SA-6 GC/MS Semi-Volatiles	SW8270	2,4-DINITROPHENOL	mg/kg	120	0.3	*0.76*	*U*	*0.71*	*U*	*0.73*	*U*	*0.68*	*U*	*0.72*	*U*	*0.78*	*U*
SA-6 GC/MS Semi-Volatiles	SW8270	2,4-DINITROTOLUENE	mg/kg	0.7	NC	0.038	U	0.035	U	0.037	U	0.034	U	0.036	U	0.039	U
SA-6 GC/MS Semi-Volatiles	SW8270	2,6-DINITROTOLUENE	mg/kg	0.7	NC	0.038	U	0.035	U	0.037	U	0.034	U	0.036	U	0.039	U
SA-6 GC/MS Semi-Volatiles	SW8270	2-CHLORONAPHTHALENE	mg/kg	NC	NC	0.076	U	0.071	U	0.073	U	0.068	U	0.072	U	0.078	U
SA-6 GC/MS Semi-Volatiles	SW8270	2-CHLOROPHENOL	mg/kg	310	0.8	0.076	U	0.071	U	0.073	U	0.068	U	0.072	U	0.078	U
SA-6 GC/MS Semi-Volatiles	SW8270	2-METHYLNAPHTHALENE	mg/kg	230	8	0.076	U	0.071	U	0.073	U	0.068	U	0.072	U	0.078	U
SA-6 GC/MS Semi-Volatiles	SW8270	2-METHYLPHENOL	mg/kg	310	NC	0.076	U	0.071	U	0.073	U	0.068	U	0.072	U	0.078	U
SA-6 GC/MS Semi-Volatiles	SW8270	2-NITROANILINE	mg/kg	39	NC	0.19	U	0.18	U	0.18	U	0.17	U	0.18	U	0.2	U
SA-6 GC/MS Semi-Volatiles	SW8270	2-NITROPHENOL	mg/kg	NC	NC	0.19	U	0.18	U	0.18	U	0.17	U	0.18	U	0.2	U
SA-6 GC/MS Semi-Volatiles	SW8270	3&4-METHYLPHENOL	mg/kg	NC	NC	0.076	U	0.071	U	0.073	U	0.068	U	0.072	U	0.078	U
SA-6 GC/MS Semi-Volatiles	SW8270	3,3'-DICHLOROBENZIDINE	mg/kg	1	0.2	0.076	U	0.071	U	0.073	U	0.068	U	0.072	U	0.078	U
SA-6 GC/MS Semi-Volatiles	SW8270	3-NITROANILINE	mg/kg	NC	NC	0.19	U	0.18	U	0.18	U	0.17	U	0.18	U	0.2	U
SA-6 GC/MS Semi-Volatiles	SW8270	4,6-DINITRO-2-METHYLPHENOL	mg/kg	6	0.3	*0.76*	*U*	*0.71*	*U*	*0.73*	*U*	*0.68*	*U*	*0.72*	*U*	*0.78*	*U*
SA-6 GC/MS Semi-Volatiles	SW8270	4-BROMOPHENYL PHENYL ETHER	mg/kg	NC	NC	0.076	U	0.071	U	0.073	U	0.068	U	0.072	U	0.078	U
SA-6 GC/MS Semi-Volatiles	SW8270	4-CHLORO-3-METHYLPHENOL	mg/kg	NC	NC	0.19	U	0.18	U	0.18	U	0.17	U	0.18	U	0.2	U
SA-6 GC/MS Semi-Volatiles	SW8270	4-CHLOROANILINE	mg/kg	NC	NC	0.19	U	0.18	U	0.18	U	0.17	U	0.18	U	0.2	U
SA-6 GC/MS Semi-Volatiles	SW8270	4-CHLOROPHENYL PHENYL ETHER	mg/kg	NC	NC	0.076	U	0.071	U	0.073	U	0.068	U	0.072	U	0.078	U
SA-6 GC/MS Semi-Volatiles	SW8270	4-NITROANILINE	mg/kg	NC	NC	0.19	U	0.18	U	0.18	U	0.17	U	0.18	U	0.2	U
SA-6 GC/MS Semi-Volatiles	SW8270	4-NITROPHENOL	mg/kg	NC	NC	0.38	U	0.35	U	0.37	U	0.34	U	0.36	U	0.39	U
SA-6 GC/MS Semi-Volatiles	SW8270	ACENAPHTHENE	mg/kg	3400	110	0.038	U	0.035	U	0.037	U	0.034	U	0.036	U	0.039	U
SA-6 GC/MS Semi-Volatiles	SW8270	ACENAPHTHYLENE	mg/kg	300000	NC	0.038	U	0.035	U	0.037	U	0.034	U	0.036	U	0.039	U
SA-6 GC/MS Semi-Volatiles	SW8270	ACETOPHENONE	mg/kg	2	3	0.19	U	0.18	U	0.18	U	0.17	U	0.18	U	0.2	U
SA-6 GC/MS Semi-Volatiles	SW8270	ANTHRACENE	mg/kg	17000	2400	0.038	U	0.035	U	0.037	U	0.034	U	0.036	U	0.039	U
SA-6 GC/MS Semi-Volatiles	SW8270	ATRAZINE	mg/kg	210	0.2	0.076	U	0.071	U	0.073	U	0.068	U	0.072	U	0.078	U
SA-6 GC/MS Semi-Volatiles	SW8270	BENZALDEHYDE	mg/kg	6100	NC	0.19	U	0.18	U	0.18	U	0.17	U	0.18	U	0.2	U
SA-6 GC/MS Semi-Volatiles	SW8270	BENZO(A)ANTHRACENE	mg/kg	0.6	0.8	0.038	U	0.035	U	0.037	U	0.034	U	0.036	U	0.039	U
SA-6 GC/MS Semi-Volatiles	SW8270	BENZO(A)PYRENE	mg/kg	0.2	0.2	0.038	U	0.035	U	0.037	U	0.034	U	0.036	U	0.039	U
SA-6 GC/MS Semi-Volatiles	SW8270	BENZO(B)FLUORANTHENE	mg/kg	0.6	2	0.038	U	0.035	U	0.037	U	0.034	U	0.036	U	0.039	U
SA-6 GC/MS Semi-Volatiles	SW8270	BENZO(G,H,I)PERYLENE	mg/kg	30000	NC	0.038	U	0.035	U	0.037	U	0.034	U	0.036	U	0.039	U
SA-6 GC/MS Semi-Volatiles	SW8270	BENZO(K)FLUORANTHENE	mg/kg	6	25	0.038	U	0.035	U	0.037	U	0.034	U	0.036	U	0.039	U
SA-6 GC/MS Semi-Volatiles	SW8270	BIS(2-CHLOROETHOXY)METHANE	mg/kg	NC	NC	0.076	U	0.071	U	0.073	U	0.068	U	0.072	U	0.078	U
SA-6 GC/MS Semi-Volatiles	SW8270	BIS(2-CHLOROETHYL)ETHER	mg/kg	0.4	0.2	0.076	U	0.071	U	0.073	U	0.068	U	0.072	U	0.078	U
SA-6 GC/MS Semi-Volatiles	SW8270	BIS(2-ETHYLHEXYL)PHTHALATE	mg/kg	35	1200	0.221		0.133		0.182		0.283		0.154		0.254	
SA-6 GC/MS Semi-Volatiles	SW8270	BUTYLBENZYL PHTHALATE	mg/kg	1200	230	0.076	U	0.071	U	0.073	U	0.068	U	0.072	U	0.078	U
SA-6 GC/MS Semi-Volatiles	SW8270	CAPROLACTAM	mg/kg	31000	12	0.076	U	0.071	U	0.073	U	0.068	U	0.072	U	0.078	U
SA-6 GC/MS Semi-Volatiles	SW8270	CARBAZOLE	mg/kg	24	NC	0.076	U	0.071	U	0.073	U	0.068	U	0.072	U	0.078	U
SA-6 GC/MS Semi-Volatiles	SW8270	CHRYSENE	mg/kg	62	80	0.038	U	0.035	U	0.037	U	0.034	U	0.036	U	0.039	U
SA-6 GC/MS Semi-Volatiles	SW8270	DI-N-BUTYL PHTHALATE	mg/kg	6100	760	0.076	U	0.071	U	0.073	U	0.068	U	0.072	U	0.078	U
SA-6 GC/MS Semi-Volatiles	SW8270	DI-N-OCTYL PHTHALATE	mg/kg	2400	3300	0.076	U	0.071	U	0.073	U	0.068	U	0.072	U	0.078	U
SA-6 GC/MS Semi-Volatiles	SW8270	DIBENZO(A,H)ANTHRACENE	mg/kg	0.2	0.8	0.038	U	0.035	U	0.037	U	0.034	U	0.036	U	0.039	U
SA-6 GC/MS Semi-Volatiles	SW8270	DIBENZOFURAN	mg/kg	NC	NC	0.076	U	0.071	U	0.073	U	0.068	U	0.072	U	0.078	U
SA-6 GC/MS Semi-Volatiles	SW8270	DIETHYL PHTHALATE	mg/kg	49000	88	0.076	U	0.071	U	0.073	U	0.068	U	0.072	U	0.078	U
SA-6 GC/MS Semi-Volatiles	SW8270	DIMETHYL PHTHALATE	mg/kg	NC	NC	0.076	U	0.071	U	0.073	U	0.068	U	0.072	U	0.078	U
SA-6 GC/MS Semi-Volatiles	SW8270	FLUORANTHENE	mg/kg	2300	1300	0.038	U	0.035	U	0.037	U	0.0203	J	0.036	U	0.039	U
SA-6 GC/MS Semi-Volatiles	SW8270	FLUORENE	mg/kg	2300	170	0.038	U	0.035	U	0.037	U	0.034	U	0.036	U	0.039	U
SA-6 GC/MS Semi-Volatiles	SW8270	HEXACHLOROBENZENE	mg/kg	0.3	0.2	0.076	U	0.071	U	0.073	U	0.068	U	0.072	U	0.078	U
SA-6 GC/MS Semi-Volatiles	SW8270	HEXACHLOROBUTADIENE	mg/kg	6	0.9	0.038	U	0.035	U	0.037	U	0.034	U	0.036	U	0.039	U
SA-6 GC/MS Semi-Volatiles	SW8270	HEXACHLOROCYCLOPENTADIENE	mg/kg	45	320	0.38	U	0.35	U	0.37	U	0.34	U	0.36	U	0.39	U
SA-6 GC/MS Semi-Volatiles	SW8270	HEXACHLOROETHANE	mg/kg	35	0.2	0.19	U	0.18	U	0.18	U	0.17	U	0.18	U	0.2	U
SA-6 GC/MS Semi-Volatiles	SW8270	INDENO(1,2,3-CD)PYRENE	mg/kg	0.6	7	0.038	U	0.035	U	0.037	U	0.034	U	0.036	U	0.039	U
SA-6 GC/MS Semi-Volatiles	SW8270	ISOPHORONE	mg/kg	510	0.2	0.076	U	0.071	U	0.073	U	0.068	U	0.072	U	0.078	U
SA-6 GC/MS Semi-Volatiles	SW8270	N-NITROSO-DI-N-PROPYLAMINE	mg/kg	0.2	0.2	0.076	U	0.071	U	0.073	U	0.068	U	0.072	U	0.078	U
SA-6 GC/MS Semi-Volatiles	SW8270	N-NITROSODIPHENYLAMINE	mg/kg	99	0.4	0.19	U	0.18	U	0.18	U	0.17	U	0.18	U	0.2	U
SA-6 GC/MS Semi-Volatiles	SW8270	NAPHTHALENE	mg/kg	6	25	0.038	U	0.035	U	0.037	U	0.034	U	0.036	U	0.039	U
SA-6 GC/MS Semi-Volatiles	SW8270	NITROBENZENE	mg/kg	31	0.2	0.076	U	0.071	U	0.073	U	0.068	U	0.072	U	0.078	U
SA-6 GC/MS Semi-Volatiles	SW8270	PHENANTHRENE	mg/kg	300000	NC	0.038	U	0.035	U	0.037	U	0.027	J	0.036	U	0.0207	J
SA-6 GC/MS Semi-Volatiles	SW8270	PHENOL	mg/kg	18000	8	0.076	U	0.071	U	0.073	U	0.068	U	0.072	U	0.078	U
SA-6 GC/MS Semi-Volatiles	SW8270	PYRENE	mg/kg	1700	840	0.038	U	0.035	U	0.037	U	0.0259	J	0.036	U	0.039	U
SA-6 GC/MS Semi-Volatiles	SW8270	TOTAL TICS, ALKANES	mg/kg	NC	NC	0		0		0		0.31	J	0		0.91	J
SA-6 GC/MS Semi-Volatiles	SW8270	TOTAL TICS, SEMI-VOLATILES	mg/kg	NC	NC	1.25	J	0.45	J	0.89	J	2.19	J	0.37	J	2.55	J

Notes:

NJ 2012 MOST STRINGENT SRS – NJDEP Most Stringent Soil Remediation Standards [N.J.A.C. 7:26D; last amended 5/7/2012].

NJ 2013 IGW SOIL – NJDEP Impact to Groundwater Soil Screening Levels [N.J.A.C. 7:26D; last amended November 2013]

NC: No criterion established

Bold and underlined concentrations exceed the NJ 2012 MOST STRINGENT SRS

Bold and shaded concentrations exceed the NJ 2013 IGW SOIL or both the NJ 2013 IGW SOIL and the NJ 2012 MOST STRINGENT SRS

Depths reported in feet below ground surface

CONC: Concentration reported in milligrams per kilogram (mg/kg)

J: Estimated concentration

NT: Not tested

Q: Data qualifier assigned by laboratory or data validator

U: Not detected above method detection limit

Results with a value of "0" indicates no TICs were detected

Prepared by: DP 05/25/2016

Reviewed by: JLD 12/15/2016

TABLE 8C

Concrete Sample Results - Metals

Study Area 6 North

Honeywell International Inc.

Jersey City, New Jersey

						Client Sample ID		088-WC-C01-051315		088-WC-C02-051315		088-WC-C03-112015		088-WC-C04-011416		088-WC-C05-011416		088-WC-C06-011416		088-WC-C07-011416		088-WC-C08-032316		088-WC-C09-032316		088-WC-C10-032316		087-WC-C19-021814		087-WC-C20-021814	
						Lab Sample ID		JB94630-1		JB94630-2		JC9030-1		JC12656-1		JC12656-2		JC12656-3		JC12656-4		JC16819-1		JC16819-2		JC16819-3		JB60011-1		JB60011-2	
						Date Sampled		05/13/2015		05/13/2015		11/20/2015		01/14/2016		01/14/2016		01/14/2016		01/14/2016		03/23/2016		03/23/2016		03/23/2016		02/18/2014		02/18/2014	
						Sample Purpose		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG	
Parameter Group Name	Analytical Method	Parameter Name	Units	NJ 2012 MOST STRINGENT SRS	NJ 2013 IGW SOIL			CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q
SA-6 TAL Metals	SW6010	ALUMINUM	mg/kg	78000	6000			**7120**		**7940**		**7720**		3570		5030		**7020**		3850		**8660**		**8380**		**8500**		**7050**	J	**6860**	
SA-6 TAL Metals	SW6010	ANTIMONY	mg/kg	31	6			2	U	2	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2	U	2	U	2	U	2.3	UJ	2.2	U
SA-6 TAL Metals	SW6010	ARSENIC	mg/kg	19	19			2.3		2.1		3.3		2.1	U	2.1	U	2.5		2.1	U	2	U	2.8		2.8		3.9		12.7	
SA-6 TAL Metals	SW6010	BARIUM	mg/kg	16000	2100			54.3		57.6		36.6		34.6		30.3		34		33.3		54.7		49.7		64.7		43.1		38.7	
SA-6 TAL Metals	SW6010	BERYLLIUM	mg/kg	16	0.7			0.29		0.45		0.28		0.24		0.22		0.29		0.23		0.29		0.34		0.34		0.23	U	0.22	U
SA-6 TAL Metals	SW6010	CADMIUM	mg/kg	78	2			0.51	U	0.51	U	0.52	U	0.53	U	0.53	U	0.53	U	0.52	U	0.5	U	0.5	U	0.49	U	0.58	U	0.56	U
SA-6 TAL Metals	SW6010	CALCIUM	mg/kg	NC	NC			91300		85100		70400		26300		54500		70000		46700		73500		78000		75600		71200		67000	
SA-6 TAL Metals	SW6010	CHROMIUM	mg/kg	NC	NC			12.6		16.8		14.7		8.9		8		43.5		9.7		16.4		110		141		10.8	J	8.8	J
SA-6 TAL Metals	SW6010	COBALT	mg/kg	590	90			5.1	U	5.4		13.5		5.3	U	5.3	U	5.3	U	5.2	U	14.5		8.4		15.3		5.8	U	5.6	U
SA-6 TAL Metals	SW6010	COPPER	mg/kg	3100	11000			11.7		38.8		52.1		9.3		9.2		11.4		15		6.8		10.7		24.5		6.7	J	5.8	
SA-6 TAL Metals	SW6010	IRON	mg/kg	NC	NC			5290		7720		15100		3790		4970		6400		3230		8980		10700		11000		8010	J	6390	
SA-6 TAL Metals	SW6010	LEAD	mg/kg	400	90			22.9		29.5		10.9		9.3		9.5		10.6		9.7		6.6		16.6		45.1		3		2.7	
SA-6 TAL Metals	SW6010	MAGNESIUM	mg/kg	NC	NC			3850		4910		6440		2190		2570		3080		2020		4360		4620		4820		4590	J	4210	
SA-6 TAL Metals	SW6010	MANGANESE	mg/kg	11000	65			**137**		**190**		**190**		**86.3**		**116**		**147**		**87.2**		**196**		**215**		**202**		**140**	J	**126**	
SA-6 TAL Metals	SW7471	MERCURY	mg/kg	23	0.1			0.033	U	0.032	U	0.034	U	0.032	U	0.032	U	0.031	U	0.035		0.035	U	**0.25**		**0.31**		0.036	U	0.038	U
SA-6 TAL Metals	SW6010	NICKEL	mg/kg	1600	48			5.8		10.5		38.8		4.2	U	5.3		21.9		6.3		8.6		20.6		**48.8**		5.9	J	5.8	
SA-6 TAL Metals	SW6010	POTASSIUM	mg/kg	NC	NC			1000	U	1100		1240		1100	U	1100	U	1100	U	1000	U	1220		1010		1250		1200	UJ	1100	U
SA-6 TAL Metals	SW6010	SELENIUM	mg/kg	390	11			2	U	2	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2	U	2	U	2	U	2.3	U	2.2	U
SA-6 TAL Metals	SW6010	SILVER	mg/kg	390	1			1	U	1	U	*2.6*	*U*	0.53	U	0.53	U	0.53	U	0.52	U	*2.5*	*U*	*2.5*	*U*	*2.5*	*U*	0.58		0.56	U
SA-6 TAL Metals	SW6010	SODIUM	mg/kg	NC	NC			1000	U	1000	U	1460		1100	U	1100	U	1100	U	1000	U	1000	U	1000	U	990	U	1200	U	1100	U
SA-6 TAL Metals	SW6010	THALLIUM	mg/kg	5	3			1	U	1	U	1	U	1.1	U	1.1	U	1.1	U	1	U	1	U	1	U	0.99	U	1.2	U	1.1	U
SA-6 TAL Metals	SW6010	VANADIUM	mg/kg	78	NC			11.2		12.5		45.3		6.5		7.5		9.7		5.5		15.1		15.4		19.4		9.6		8.8	
SA-6 TAL Metals	SW6010	ZINC	mg/kg	23000	930			53		132		36.9		30.9		34.4		35.6		74.7		40.1		80.8		280		32.9	J	19.6	

Notes:

TAL: Target Analyte List; hexavalent chromium results included for comparison (see Table 1 for full results)

NJ 2012 MOST STRINGENT SRS – NJDEP Most Stringent Soil Remediation Standards [N.J.A.C. 7:26D; last amended 5/7/2012].

NJ 2013 IGW SOIL – NJDEP Impact to Groundwater Soil Screening Levels [N.J.A.C. 7:26D; last amended November 2013]

NC: No criterion established

Bold and underlined concentrations exceed the NJ 2012 MOST STRINGENT SRS

Bold and shaded concentrations exceed the NJ 2013 IGW SOIL or both the NJ 2013 IGW SOIL and the NJ 2012 MOST STRINGENT SRS

Italicized values not detected; reporting limit exceeds criteria

Depths reported in feet below ground surface

CONC: Concentration reported in milligrams per kilogram (mg/kg)

Q: Data qualifier assigned by laboratory or data validator

U: Not detected above method detection limit

Prepared by: DP 05/25/2016

Reviewed by: JLD 12/15/2016

TABLE 8C

Concrete Sample Results - Metals

Study Area 6 North

Honeywell International Inc.

Jersey City, New Jersey

						Client Sample ID		087-WC-C21-021814		087-WC-C22-021814		087-WC-C23-021814		087-WC-C24-021814		087-WC-C25-021814		087-WC-C26-021814		087-WC-C27-021814	
						Lab Sample ID		JB60011-3		JB60011-4		JB60011-5		JB60011-6		JB60011-7		JB60011-8		JB60011-9	
						Date Sampled		02/18/2014		02/18/2014		02/18/2014		02/18/2014		02/18/2014		02/18/2014		02/18/2014	
						Sample Purpose		REG		REG		REG		REG		REG		REG		REG	
Parameter Group Name	Analytical Method	Parameter Name	Units	NJ 2012 MOST STRINGENT SRS	NJ 2013 IGW SOIL			CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q
SA-6 TAL Metals	SW6010	ALUMINUM	mg/kg	78000	6000			**6430**		**7090**		**6740**		**7110**		**7200**		**7290**		**8600**	
SA-6 TAL Metals	SW6010	ANTIMONY	mg/kg	31	6			2.1	U	2.3	U	2.2	U	2.3	U	2.3	U	2.2	U	2.4	U
SA-6 TAL Metals	SW6010	ARSENIC	mg/kg	19	19			2.1	U	2.3	U	2.2	U	2.3	U	2.5		2.2	U	2.6	
SA-6 TAL Metals	SW6010	BARIUM	mg/kg	16000	2100			34.8		39.4		37.8		40.9		51.8		37.8		47.9	
SA-6 TAL Metals	SW6010	BERYLLIUM	mg/kg	16	0.7			0.21	U	0.23	U	0.22	U	0.23	U	0.23	U	0.22	U	0.24	U
SA-6 TAL Metals	SW6010	CADMIUM	mg/kg	78	2			0.54	U	0.57	U	0.55	U	0.57	U	0.59	U	0.54	U	0.61	U
SA-6 TAL Metals	SW6010	CALCIUM	mg/kg	NC	NC			61700		75200		71700		76700		69500		72700		79800	
SA-6 TAL Metals	SW6010	CHROMIUM	mg/kg	NC	NC			9.4	J	8.8	J	8.1	J	9.1	J	27.4	J	13.5	J	19.3	J
SA-6 TAL Metals	SW6010	COBALT	mg/kg	590	90			5.4	U	5.7	U	5.5	U	5.7	U	5.9	U	5.4	U	6.1	U
SA-6 TAL Metals	SW6010	COPPER	mg/kg	3100	11000			6.7		5.3		5.3		5.9		14.9		14.7		19.9	
SA-6 TAL Metals	SW6010	IRON	mg/kg	NC	NC			9340		5970		5240		5480		7820		7750		10600	
SA-6 TAL Metals	SW6010	LEAD	mg/kg	400	90			2.1	U	2.7		2.5		3.5		6.1		4.8		6	
SA-6 TAL Metals	SW6010	MAGNESIUM	mg/kg	NC	NC			4070		5010		4430		4730		4970		5180		6660	
SA-6 TAL Metals	SW6010	MANGANESE	mg/kg	11000	65			**132**		**120**		**102**		**118**		**116**		**120**		**140**	
SA-6 TAL Metals	SW7471	MERCURY	mg/kg	23	0.1			0.036	U	0.055		**0.41**		0.036	U	0.035	U	0.038	U	0.036	U
SA-6 TAL Metals	SW6010	NICKEL	mg/kg	1600	48			5.8		5.9		5		5.2		7.6		7.4		8.8	
SA-6 TAL Metals	SW6010	POTASSIUM	mg/kg	NC	NC			1100	U	1100	U	1100	U	1100	U	1200	U	1100	U	1200	U
SA-6 TAL Metals	SW6010	SELENIUM	mg/kg	390	11			2.1	U	2.3	U	2.2	U	2.3	U	2.3	U	2.2	U	2.4	U
SA-6 TAL Metals	SW6010	SILVER	mg/kg	390	1			0.58		0.57	U	0.58		0.63		0.59		0.54	U	0.61	U
SA-6 TAL Metals	SW6010	SODIUM	mg/kg	NC	NC			1100	U	1100	U	1100	U	1100	U	1200	U	1100	U	1200	U
SA-6 TAL Metals	SW6010	THALLIUM	mg/kg	5	3			1.1	U	1.1	U	1.1	U	1.1	U	1.2	U	1.1	U	1.2	U
SA-6 TAL Metals	SW6010	VANADIUM	mg/kg	78	NC			8.5		9		7.8		8.6		16		16		25.1	
SA-6 TAL Metals	SW6010	ZINC	mg/kg	23000	930			17.1		15.3		13.4		17.1		39.2		25.9		43.7	

Notes:

TAL: Target Analyte List; hexavalent chromium results included for comparison (see Table 1 for full results)

NJ 2012 MOST STRINGENT SRS – NJDEP Most Stringent Soil Remediation Standards [N.J.A.C. 7:26D; last amended 5/7/2012].

NJ 2013 IGW SOIL – NJDEP Impact to Groundwater Soil Screening Levels [N.J.A.C. 7:26D; last amended November 2013]

NC: No criterion established

Bold and underlined concentrations exceed the NJ 2012 MOST STRINGENT SRS

Bold and shaded concentrations exceed the NJ 2013 IGW SOIL or both the NJ 2013 IGW SOIL and the NJ 2012 MOST STRINGENT SRS

Italicized values not detected; reporting limit exceeds criteria

Depths reported in feet below ground surface

CONC: Concentration reported in milligrams per kilogram (mg/kg)

Q: Data qualifier assigned by laboratory or data validator

U: Not detected above method detection limit

Prepared by: DP 05/25/2016

Reviewed by: JLD 12/15/2016

TABLE 8D

Concrete Sample Results - Pesticides and PCBs

Study Area 6 North

Honeywell International Inc.

Jersey City, New Jersey

						088-WC-C01-051315		088-WC-C02-051315		088-WC-C03-112015		088-WC-C04-011416		088-WC-C05-011416		088-WC-C06-011416		088-WC-C07-011416		088-WC-C08-032316		088-WC-C09-032316		088-WC-C10-032316		087-WC-C19-021814		087-WC-C20-021814	
						JB94630-1		JB94630-2		JC9030-1		JC12656-1		JC12656-2		JC12656-3		JC12656-4		JC16819-1		JC16819-2		JC16819-3		JB60011-1		JB60011-2	
						05/13/2015		05/13/2015		11/20/2015		01/14/2016		01/14/2016		01/14/2016		01/14/2016		03/23/2016		03/23/2016		03/23/2016		02/18/2014		02/18/2014	
						REG		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG	
Parameter Group Name	**Analytical Method**	**Parameter Name**	**Units**	**NJ 2012 MOST STRINGENT SRS**	**NJ 2013 IGW SOIL**	**CONC**	**Q**	**CONC**	**Q**	**CONC**	**Q**	**CONC**	**Q**	**CONC**	**Q**	**CONC**	**Q**	**CONC**	**Q**	**CONC**	**Q**	**CONC**	**Q**	**CONC**	**Q**	**CONC**	**Q**	**CONC**	**Q**
SA-6 PCB/Pesticide/Herbicide	**SW8081**	4,4'-DDD	mg/kg	3	4	0.0007	U	0.00069	U	0.00069	U	0.00067	U	0.00068	U	0.00061	U	0.00068	U	0.00065	U	0.00063	U	0.0069		0.00071	U	0.00068	U
SA-6 PCB/Pesticide/Herbicide	**SW8081**	4,4'-DDE	mg/kg	2	18	0.0012	NJ	0.0011		0.00069	U	0.00067	U	0.00068	U	0.00061	U	0.00068	U	0.00065	U	0.00063	U	0.0024		0.00071	U	0.00068	U
SA-6 PCB/Pesticide/Herbicide	**SW8081**	4,4'-DDT	mg/kg	2	11	0.0007	U	0.00069	U	0.00069	U	0.00067	U	0.00068	U	0.00061	U	0.00068	U	0.00075		0.0012		0.008		0.00071	U	0.00068	U
SA-6 PCB/Pesticide/Herbicide	**SW8081**	ALDRIN	mg/kg	0.04	0.2	0.0007	U	0.00069	U	0.00069	U	0.00067	U	0.00068	U	0.00061	U	0.00068	U	0.00065	U	0.00063	U	0.00063	U	0.00071	U	0.00068	U
SA-6 PCB/Pesticide/Herbicide	**SW8081**	ALPHA-BHC	mg/kg	0.1	0.002	0.0007	U	0.00069	U	0.00069	U	0.00067	U	0.00068	U	0.00061	U	0.00068	U	0.00065	U	0.00063	U	0.00063	U	0.00071	U	0.00068	U
SA-6 PCB/Pesticide/Herbicide	**SW8081**	ALPHA-CHLORDANE	mg/kg	NC	NC	0.0007	U	0.00069	U	0.00069	U	0.00067	U	0.00068	U	0.00061	U	0.00068	U	0.00065	U	0.00063	U	0.00063	U	0.00071	U	0.00068	U
SA-6 PCB/Pesticide/Herbicide	**SW8081**	BETA-BHC	mg/kg	0.4	0.002	0.0007	U	0.00069	U	0.00069	U	0.00067	U	0.00068	U	0.00061	U	0.00068	U	0.00065	U	0.00063	U	0.00063	U	0.00071	U	0.00068	U
SA-6 PCB/Pesticide/Herbicide	**SW8081**	BETA-CHLORDANE	mg/kg	NC	NC	0.0007	U	0.00069	U	0.00069	U	0.00067	U	0.00068	U	0.00061	U	0.00068	U	0.00065	U	0.00063	U	0.00063	U	0.00071	U	0.00068	U
SA-6 PCB/Pesticide/Herbicide	**SW8081**	CHLORDANE	mg/kg	0.2	0.05	0.0007	U	0.00069	U	0.00069	U	0.00067	U	0.00068	U	0.00061	U	0.00068	U	0.00065	U	0.00063	U	0.00063	U	0.00071	U	0.00068	U
SA-6 PCB/Pesticide/Herbicide	**SW8081**	DELTA-BHC	mg/kg	NC	NC	0.0007	U	0.00069	U	0.00069	U	0.00067	U	0.00068	U	0.00061	U	0.00068	U	0.00065	U	0.00063	U	0.00063	U	0.00071	U	0.00068	U
SA-6 PCB/Pesticide/Herbicide	**SW8081**	DIELDRIN	mg/kg	0.04	0.003	0.0007	U	0.00069	U	0.00069	U	0.00067	U	0.00068	U	0.00061	U	0.00068	U	0.00065	U	0.00063	U	0.00063	U	0.00071	U	0.00068	U
SA-6 PCB/Pesticide/Herbicide	**SW8081**	ENDOSULFAN I	mg/kg	NC	NC	0.0007	U	0.00069	U	0.00069	U	0.00067	U	0.00068	U	0.00061	U	0.00068	U	0.00065	U	0.00063	U	0.00063	U	0.00071	U	0.00068	U
SA-6 PCB/Pesticide/Herbicide	**SW8081**	ENDOSULFAN II	mg/kg	NC	NC	0.0007	U	0.00069	U	0.00069	U	0.00067	U	0.00068	U	0.00061	U	0.00068	U	0.00065	U	0.00063	U	0.00063	U	0.00071	U	0.00068	U
SA-6 PCB/Pesticide/Herbicide	**SW8081**	ENDOSULFAN SULFATE	mg/kg	470	2	0.0007	U	0.00069	U	0.00069	U	0.00067	U	0.00068	U	0.00061	U	0.00068	U	0.00065	U	0.00063	U	0.00063	U	0.00071	U	0.00068	U
SA-6 PCB/Pesticide/Herbicide	**SW8081**	ENDRIN	mg/kg	23	1	0.0007	U	0.00069	U	0.00069	U	0.00067	U	0.00068	U	0.00061	U	0.00068	U	0.00065	U	0.00063	U	0.00063	U	0.00071	U	0.00068	U
SA-6 PCB/Pesticide/Herbicide	**SW8081**	ENDRIN ALDEHYDE	mg/kg	NC	NC	0.0007	U	0.00069	U	0.00069	U	0.00067	U	0.00068	U	0.00061	U	0.00068	U	0.00065	U	0.00063	U	0.00063	U	0.00071	U	0.00068	U
SA-6 PCB/Pesticide/Herbicide	**SW8081**	ENDRIN KETONE	mg/kg	NC	NC	0.0007	U	0.00069	U	0.00069	U	0.00067	U	0.00068	U	0.00061	U	0.00068	U	0.00065	U	0.00063	U	0.00063	U	0.00071	U	0.00068	U
SA-6 PCB/Pesticide/Herbicide	**SW8081**	GAMMA-BHC (LINDANE)	mg/kg	0.4	0.002	0.0007	U	0.00069	U	0.00069	U	0.00067	U	0.00068	U	0.00061	U	0.00068	U	0.00065	U	0.00063	U	0.00063	U	0.00071	U	0.00068	U
SA-6 PCB/Pesticide/Herbicide	**SW8081**	HEPTACHLOR	mg/kg	0.1	0.5	0.0007	U	0.00069	U	0.00069	U	0.00067	U	0.00068	U	0.00061	U	0.00068	U	0.00065	U	0.00063	U	0.00063	U	0.00071	U	0.00068	U
SA-6 PCB/Pesticide/Herbicide	**SW8081**	HEPTACHLOR EPOXIDE	mg/kg	0.07	0.01	0.0007	U	0.00069	U	0.00069	U	0.00067	U	0.00068	U	0.00061	U	0.00068	U	0.00065	U	0.00063	U	0.00063	U	0.00071	U	0.00068	U
SA-6 PCB/Pesticide/Herbicide	**SW8081**	METHOXYCHLOR	mg/kg	390	160	0.0014	U	0.0014	U	0.0014	U	0.0013	U	0.0014	U	0.0012	U	0.0014	U	0.0013	U	0.0013	U	0.0013	U	0.0014	U	0.0014	U
SA-6 PCB/Pesticide/Herbicide	**SW8270**	PENTACHLOROPHENOL	mg/kg	3	0.3	0.17	U	0.16	U	0.17	U	0.17	U	0.17	U	0.17	U	0.17	U			0.17	U	0.17	U	*0.36*	*U*	*0.37*	*U*
SA-6 PCB/Pesticide/Herbicide	**SW8081**	TOXAPHENE	mg/kg	0.6	0.3	0.017	U	0.017	U	0.017	U	0.017	U	0.017	U	0.015	U	0.017	U	0.016	U	0.016	U	0.016	U	0.018	U	0.017	U
SA-6 PCB/Pesticide/Herbicide	**SW8082**	AROCLOR-1016	mg/kg	NC	NC	0.035	U	0.034	U	0.035	U	0.034	U	0.034	U	0.031	U	0.034	U	0.033	U	0.031	U	0.031	U	0.035	U	0.034	U
SA-6 PCB/Pesticide/Herbicide	**SW8082**	AROCLOR-1221	mg/kg	NC	NC	0.035	U	0.034	U	0.035	U	0.034	U	0.034	U	0.031	U	0.034	U	0.033	U	0.031	U	0.031	U	0.035	U	0.034	U
SA-6 PCB/Pesticide/Herbicide	**SW8082**	AROCLOR-1232	mg/kg	NC	NC	0.035	U	0.034	U	0.035	U	0.034	U	0.034	U	0.031	U	0.034	U	0.033	U	0.031	U	0.031	U	0.035	U	0.034	U
SA-6 PCB/Pesticide/Herbicide	**SW8082**	AROCLOR-1242	mg/kg	NC	NC	0.035	U	0.034	U	0.035	U	0.034	U	0.034	U	0.031	U	0.034	U	0.0747		0.031	U	0.031	U	0.035	U	0.034	U
SA-6 PCB/Pesticide/Herbicide	**SW8082**	AROCLOR-1248	mg/kg	NC	NC	0.035	U	0.034	U	0.035	U	0.034	U	0.034	U	0.031	U	0.034	U	0.033	U	0.031	U	0.031	U	0.035	U	0.034	U
SA-6 PCB/Pesticide/Herbicide	**SW8082**	AROCLOR-1254	mg/kg	NC	NC	0.0526		0.034	U	0.035	U	0.034	U	0.034	U	0.031	U	0.034	U	0.033	U	0.031	U	0.031	U	0.035	U	0.034	U
SA-6 PCB/Pesticide/Herbicide	**SW8082**	AROCLOR-1260	mg/kg	NC	NC	0.035	U	0.034	U	0.035	U	0.034	U	0.034	U	0.031	U	0.034	U	0.033	U	0.031	U	0.031	U	0.035	U	0.034	U
SA-6 PCB/Pesticide/Herbicide	**SW8082**	AROCLOR-1262	mg/kg	NC	NC	0.035	U	0.034	U	0.035	U	0.034	U	0.034	U	0.031	U	0.034	U	0.033	U	0.031	U	0.0676		0.035	U	0.034	U
SA-6 PCB/Pesticide/Herbicide	**SW8082**	AROCLOR-1268	mg/kg	NC	NC	0.035	U	0.034	U	0.035	U	0.034	U	0.034	U	0.031	U	0.034	U	0.033	U	0.031	U	0.031	U	0.035	U	0.034	U
		TOTAL PCBs		0.2	0.2	0.0526		0.034	U	0.035	U	0.034	U	0.034	U	0.031	U	0.034	U	0.0747		0.031	U	0.0676		0		0	

Notes:

NJ 2012 MOST STRINGENT SRS – NJDEP Most Stringent Soil Remediation Standards [N.J.A.C. 7:26D; last amended 5/7/2012].

NJ 2013 IGW SOIL – NJDEP Impact to Groundwater Soil Screening Levels [N.J.A.C. 7:26D; last amended November 2013]

NC: No criterion established

Bold and underlined concentrations exceed the NJ 2012 MOST STRINGENT SRS

Bold and shaded concentrations exceed the NJ 2013 IGW SOIL or both the NJ 2013 IGW SOIL and the NJ 2012 MOST STRINGENT SRS

Depths reported in feet below ground surface

CONC: Concentration reported in milligrams per kilogram (mg/kg)

Q: Data qualifier assigned by laboratory or data validator

J: Estimated concentration

N: Negated by laboratory or data validator

U: Not detected above method detection limit

Prepared by: DP 05/25/2016

Reviewed by: JLD 03/09/2017

TABLE 8D

Concrete Sample Results - Pesticides and PCBs

Study Area 6 North

Honeywell International Inc.

Jersey City, New Jersey

		Client Sample ID				087-WC-C21-021814		087-WC-C22-021814		087-WC-C23-021814		087-WC-C24-021814		087-WC-C25-021814		087-WC-C26-021814		087-WC-C27-021814	
		Lab Sample ID				JB60011-3		JB60011-4		JB60011-5		JB60011-6		JB60011-7		JB60011-8		JB60011-9	
		Date Sampled				02/18/2014		02/18/2014		02/18/2014		02/18/2014		02/18/2014		02/18/2014		02/18/2014	
		Sample Purpose		NJ 2012 MOST	NJ 2013 IGW	REG		REG		REG		REG		REG		REG		REG	
Parameter Group Name	Analytical Method	Parameter Name	Units	STRINGENT SRS	SOIL	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q
SA-6 PCB/Pesticide/Herbicide	SW8081	4,4'-DDD	mg/kg	3	4	0.00073	U	0.001		0.0012		0.00078	U	0.00076	U	0.0011		0.00077	U
SA-6 PCB/Pesticide/Herbicide	SW8081	4,4'-DDE	mg/kg	2	18	0.00073	U	0.0013		0.001		0.00078	U	0.001		0.0043		0.0063	
SA-6 PCB/Pesticide/Herbicide	SW8081	4,4'-DDT	mg/kg	2	11	0.00073	U	0.00077	U	0.00075	U	0.00078	U	0.00076	U	0.00072	U	0.00077	U
SA-6 PCB/Pesticide/Herbicide	SW8081	ALDRIN	mg/kg	0.04	0.2	0.00073	U	0.00077	U	0.00075	U	0.00078	U	0.00076	U	0.00072	U	0.00077	U
SA-6 PCB/Pesticide/Herbicide	SW8081	ALPHA-BHC	mg/kg	0.1	0.002	0.00073	U	0.00077	U	0.00075	U	0.00078	U	0.00076	U	0.00072	U	0.00077	U
SA-6 PCB/Pesticide/Herbicide	SW8081	ALPHA-CHLORDANE	mg/kg	NC	NC	0.00073	U	0.00077	U	0.00075	U	0.00078	U	0.00076	U	0.00072	U	0.00077	U
SA-6 PCB/Pesticide/Herbicide	SW8081	BETA-BHC	mg/kg	0.4	0.002	0.00073	U	0.00077	U	0.00075	U	0.00078	U	0.00076	U	0.00072	U	0.00077	U
SA-6 PCB/Pesticide/Herbicide	SW8081	BETA-CHLORDANE	mg/kg	NC	NC	0.00073	U	0.00077	U	0.00075	U	0.00078	U	0.00076	U	0.001		0.0012	
SA-6 PCB/Pesticide/Herbicide	SW8081	CHLORDANE	mg/kg	0.2	0.05	0.00073	U	0.00077	U	0.00075	U	0.00078	U	0.00076	U	0.001		0.0012	
SA-6 PCB/Pesticide/Herbicide	SW8081	DELTA-BHC	mg/kg	NC	NC	0.00073	U	0.00077	U	0.00075	U	0.00078	U	0.00076	U	0.00072	U	0.00077	U
SA-6 PCB/Pesticide/Herbicide	SW8081	DIELDRIN	mg/kg	0.04	0.003	0.00073	U	0.00077	U	0.00088		0.00078	U	0.00076	U	0.0025		**0.0037**	
SA-6 PCB/Pesticide/Herbicide	SW8081	ENDOSULFAN I	mg/kg	NC	NC	0.00073	U	0.00077	U	0.00075	U	0.00078	U	0.00076	U	0.00072	U	0.00077	U
SA-6 PCB/Pesticide/Herbicide	SW8081	ENDOSULFAN II	mg/kg	NC	NC	0.00073	U	0.00077	U	0.00075	U	0.00078	U	0.00076	U	0.00072	U	0.00077	U
SA-6 PCB/Pesticide/Herbicide	SW8081	ENDOSULFAN SULFATE	mg/kg	470	2	0.00073	U	0.00077	U	0.00075	U	0.00078	U	0.00076	U	0.00072	U	0.00077	U
SA-6 PCB/Pesticide/Herbicide	SW8081	ENDRIN	mg/kg	23	1	0.00073	U	0.00077	U	0.00075	U	0.00078	U	0.00076	U	0.00072	U	0.00077	U
SA-6 PCB/Pesticide/Herbicide	SW8081	ENDRIN ALDEHYDE	mg/kg	NC	NC	0.00073	U	0.00077	U	0.00075	U	0.00078	U	0.00076	U	0.00072	U	0.00077	U
SA-6 PCB/Pesticide/Herbicide	SW8081	ENDRIN KETONE	mg/kg	NC	NC	0.00073	U	0.00077	U	0.00075	U	0.00078	U	0.00076	U	0.00072	U	0.00077	U
SA-6 PCB/Pesticide/Herbicide	SW8081	GAMMA-BHC (LINDANE)	mg/kg	0.4	0.002	0.00073	U	0.00077	U	0.00075	U	0.00078	U	0.00076	U	0.00072	U	0.00077	U
SA-6 PCB/Pesticide/Herbicide	SW8081	HEPTACHLOR	mg/kg	0.1	0.5	0.00073	U	0.00077	U	0.00075	U	0.00078	U	0.00076	U	0.00072	U	0.00077	U
SA-6 PCB/Pesticide/Herbicide	SW8081	HEPTACHLOR EPOXIDE	mg/kg	0.07	0.01	0.00073	U	0.00077	U	0.00075	U	0.00078	U	0.00076	U	0.00089		0.001	
SA-6 PCB/Pesticide/Herbicide	SW8081	METHOXYCHLOR	mg/kg	390	160	0.0015	U	0.0015	U	0.0015	U	0.0016	U	0.0015	U	0.0014	U	0.0015	U
SA-6 PCB/Pesticide/Herbicide	SW8270	PENTACHLOROPHENOL	mg/kg	3	0.3	*0.35*	*U*	*0.38*	*U*	*0.35*	*U*	*0.37*	*U*	*0.34*	*U*	*0.36*	*U*	*0.39*	*U*
SA-6 PCB/Pesticide/Herbicide	SW8081	TOXAPHENE	mg/kg	0.6	0.3	0.018	U	0.019	U	0.019	U	0.019	U	0.019	U	0.018	U	0.019	U
SA-6 PCB/Pesticide/Herbicide	SW8082	AROCLOR-1016	mg/kg	NC	NC	0.036	U	0.039	U	0.038	U	0.039	U	0.038	U	0.036	U	0.039	U
SA-6 PCB/Pesticide/Herbicide	SW8082	AROCLOR-1221	mg/kg	NC	NC	0.036	U	0.039	U	0.038	U	0.039	U	0.038	U	0.036	U	0.039	U
SA-6 PCB/Pesticide/Herbicide	SW8082	AROCLOR-1232	mg/kg	NC	NC	0.036	U	0.039	U	0.038	U	0.039	U	0.038	U	0.036	U	0.039	U
SA-6 PCB/Pesticide/Herbicide	SW8082	AROCLOR-1242	mg/kg	NC	NC	0.036	U	0.039	U	0.038	U	0.039	U	0.038	U	0.036	U	0.039	U
SA-6 PCB/Pesticide/Herbicide	SW8082	AROCLOR-1248	mg/kg	NC	NC	0.036	U	0.039	U	0.038	U	0.039	U	0.038	U	0.036	U	0.039	U
SA-6 PCB/Pesticide/Herbicide	SW8082	AROCLOR-1254	mg/kg	NC	NC	0.036	U	0.039	U	0.038	U	0.039	U	0.038	U	0.036	U	0.039	U
SA-6 PCB/Pesticide/Herbicide	SW8082	AROCLOR-1260	mg/kg	NC	NC	0.036	U	0.039	U	0.038	U	0.039	U	0.038	U	0.036	U	0.039	U
SA-6 PCB/Pesticide/Herbicide	SW8082	AROCLOR-1262	mg/kg	NC	NC	0.036	U	0.039	U	0.038	U	0.039	U	0.038	U	0.036	U	0.039	U
SA-6 PCB/Pesticide/Herbicide	SW8082	AROCLOR-1268	mg/kg	NC	NC	0.036	U	0.039	U	0.038	U	0.039	U	0.038	U	0.036	U	0.039	U
		TOTAL PCBs		0.2	0.2	0		0		0		0		0		0		0	

Notes:

NJ 2012 MOST STRINGENT SRS – NJDEP Most Stringent Soil Remediation Standards [N.J.A.C. 7:26D; last amended 5/7/2012].

NJ 2013 IGW SOIL – NJDEP Impact to Groundwater Soil Screening Levels [N.J.A.C. 7:26D; last amended November 2013]

NC: No criterion established

Bold and underlined concentrations exceed the NJ 2012 MOST STRINGENT SRS

Bold and shaded concentrations exceed the NJ 2013 IGW SOIL or both the NJ 2013 IGW SOIL and the NJ 2012 MOST STRINGENT SRS

Depths reported in feet below ground surface

CONC: Concentration reported in milligrams per kilogram (mg/kg)

Q: Data qualifier assigned by laboratory or data validator

J: Estimated concentration

N: Negated by laboratory or data validator

U: Not detected above method detection limit

Prepared by: DP 05/25/2016

Reviewed by: JLD 03/09/2017

TABLE 8E

Concrete Sample Results - EPH/Petroleum Hydrocarbons

Study Area 6 North

Honeywell International Inc.

Jersey City, New Jersey

		Client Sample ID			088-WC-C01-051315		088-WC-C02-051315		088-WC-C03-112015		088-WC-C04-011416		088-WC-C05-011416		088-WC-C06-011416		088-WC-C07-011416		088-WC-C08-032316		088-WC-C09-032316		088-WC-C10-032316	
		Lab Sample ID			JB94630-1		JB94630-2		JC9030-1		JC12656-1		JC12656-2		JC12656-3		JC12656-4		JC16819-1		JC16819-2		JC16819-3	
		Date Sampled			05/13/2015		05/13/2015		11/20/2015		01/14/2016		01/14/2016		01/14/2016		01/14/2016		03/23/2016		03/23/2016		03/23/2016	
		Sample Purpose			REG		REG		REG		REG		REG		REG		REG		REG		REG		REG	
Parameter Group Name	Analytical Method	Parameter Name	Units	NJ 2012 MOST STRINGENT SRS	NJ 2013 IGW SOIL	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q
SA-6 Fractionated Extractable	NJDEP EPH	C10-C12 PETROLEUM HYDROCARBONS, AROMATIC	mg/kg	NC	NC	5.5	U	5.1	U	5.3	U	NT		NT		NT		NT		NT		NT		NT	
SA-6 Fractionated Extractable	NJDEP EPH	C12-C16 PETROLEUM HYDROCARBONS, ALIPHATIC	mg/kg	NC	NC	5.5	U	5.1	U	5.3	U	NT		NT		NT		NT		NT		NT		NT	
SA-6 Fractionated Extractable	NJDEP EPH	C12-C16 PETROLEUM HYDROCARBONS, AROMATIC	mg/kg	NC	NC	5.5	U	5.1	U	5.3	U	NT		NT		NT		NT		NT		NT		NT	
SA-6 Fractionated Extractable	NJDEP EPH	C16-C21 PETROLEUM HYDROCARBONS, ALIPHATIC	mg/kg	NC	NC	5.5	U	5.1	U	20.2		NT		NT		NT		NT		NT		NT		NT	
SA-6 Fractionated Extractable	NJDEP EPH	C16-C21 PETROLEUM HYDROCARBONS, AROMATIC	mg/kg	NC	NC	5.5	U	5.1	U	5.3	U	NT		NT		NT		NT		NT		NT		NT	
SA-6 Fractionated Extractable	NJDEP EPH	C21-C36 PETROLEUM HYDROCARBONS, AROMATIC	mg/kg	NC	NC	5.5	U	5.1	U	36.5		NT		NT		NT		NT		NT		NT		NT	
SA-6 Fractionated Extractable	NJDEP EPH	C21-C40 PETROLEUM HYDROCARBONS, ALIPHATIC	mg/kg	NC	NC	9.98		13.1		330		NT		NT		NT		NT		NT		NT		NT	
SA-6 Fractionated Extractable	NJDEP EPH	EPH (C9-C28)	mg/kg	NC	NC	NT		NT		NT		34.6		159		21.7		28.6		19		24.1		28	
SA-6 Fractionated Extractable	NJDEP EPH	EXTRACTABLE PETROLEUM HYDROCARBONS (>C28-C40)	mg/kg	NC	NC	NT		NT		NT		6.3	U	68		6.8	U	6.8	U	6.8	U	6.6	U	24.1	
SA-6 Fractionated Extractable	NJDEP EPH	PETROLEUM HYDROCARBONS	mg/kg	NC	NC	9.98		13.1		387		NT		NT		NT		NT		NT		NT		NT	
		Residual Range Organics C28-C40	mg/kg	NC	NC	NT		NT		NT		NT		NT		NT		NT		NT		NT		NT	
SA-6 Fractionated Extractable	NJDEP EPH	Residual Range Organics, Aliphatic	mg/kg	NC	NC	9.98		13.1		350		NT		NT		NT		NT		NT		NT		NT	
SA-6 Fractionated Extractable	NJDEP EPH	Residual Range Organics, Aromatic	mg/kg	NC	NC	5.5	U	5.1	U	36.5		NT		NT		NT		NT		NT		NT		NT	
		Total EPH (C9-C40)	mg/kg	NC	NC	NT		NT		NT		NT		NT		NT		NT		NT		NT		NT	
SA-6 Fractionated Extractable	NJDEP EPH	VOLATILE PETROLEUM HYDROCARBONS C9-C12 ALIPHATIC	mg/kg	NC	NC	5.5	U	5.1	U	5.3	U	NT		NT		NT		NT		NT		NT		NT	

Notes:

NJ 2012 MOST STRINGENT SRS – NJDEP Most Stringent Soil Remediation Standards [N.J.A.C. 7:26D; last amended 5/7/2012].

NJ 2013 IGW SOIL – NJDEP Impact to Groundwater Soil Screening Levels [N.J.A.C. 7:26D; last amended November 2013]

Criterion for total petroleum hydrocarbons based on 10,000 mg/kg cap value for total organic contaminants in the Soil Cleanup Criteria Table; last amended 5/12/1999

NC: No criterion established

Bold and underlined concentrations exceed the NJ 2012 MOST STRINGENT SRS

Bold and shaded concentrations exceed the NJ 2013 IGW SOIL or both the NJ 2013 IGW SOIL and the NJ 2012 MOST STRINGENT SRS

Depths reported in feet below ground surface

CONC: Concentration reported in milligrams per kilogram (mg/kg)

NT: Not tested

Q: Data qualifier assigned by laboratory or data validator

U: Not detected above method detection limit

Prepared by: DP 05/25/2016
Reviewed by: JLD 12/15/2016

TABLE 8E

Concrete Sample Results - EPH/Petroleum Hydrocarbons

Study Area 6 North

Honeywell International Inc.

Jersey City, New Jersey

		Client Sample ID			087-WC-C19-021814		087-WC-C20-021814		087-WC-C21-021814		087-WC-C22-021814		087-WC-C23-021814		087-WC-C24-021814		087-WC-C25-021814		087-WC-C26-021814		087-WC-C27-021814	
		Lab Sample ID			JB60011-1		JB60011-2		JB60011-3		JB60011-4		JB60011-5		JB60011-6		JB60011-7		JB60011-8		JB60011-9	
		Date Sampled			02/18/2014		02/18/2014		02/18/2014		02/18/2014		02/18/2014		02/18/2014		02/18/2014		02/18/2014		02/18/2014	
		Sample Purpose			REG		REG		REG		REG		REG		REG		REG		REG		REG	
Parameter Group Name	Analytical Method	Parameter Name	Units	NJ 2012 MOST STRINGENT SRS	NJ 2013 IGW SOIL	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q
SA-6 Fractionated Extractable	NJDEP EPH	C10-C12 PETROLEUM HYDROCARBONS, AROMATIC	mg/kg	NC	NC	NT		NT		NT		NT		NT		NT		NT		NT		NT	
SA-6 Fractionated Extractable	NJDEP EPH	C12-C16 PETROLEUM HYDROCARBONS, ALIPHATIC	mg/kg	NC	NC	NT		NT		NT		NT		NT		NT		NT		NT		NT	
SA-6 Fractionated Extractable	NJDEP EPH	C12-C16 PETROLEUM HYDROCARBONS, AROMATIC	mg/kg	NC	NC	NT		NT		NT		NT		NT		NT		NT		NT		NT	
SA-6 Fractionated Extractable	NJDEP EPH	C16-C21 PETROLEUM HYDROCARBONS, ALIPHATIC	mg/kg	NC	NC	NT		NT		NT		NT		NT		NT		NT		NT		NT	
SA-6 Fractionated Extractable	NJDEP EPH	C16-C21 PETROLEUM HYDROCARBONS, AROMATIC	mg/kg	NC	NC	NT		NT		NT		NT		NT		NT		NT		NT		NT	
SA-6 Fractionated Extractable	NJDEP EPH	C21-C36 PETROLEUM HYDROCARBONS, AROMATIC	mg/kg	NC	NC	NT		NT		NT		NT		NT		NT		NT		NT		NT	
SA-6 Fractionated Extractable	NJDEP EPH	C21-C40 PETROLEUM HYDROCARBONS, ALIPHATIC	mg/kg	NC	NC	NT		NT		NT		NT		NT		NT		NT		NT		NT	
SA-6 Fractionated Extractable	NJDEP EPH	EPH (C9-C28)	mg/kg	NC	NC	758		757		1350		1080		860		953		1270		1140		1280	
SA-6 Fractionated Extractable	NJDEP EPH	EXTRACTABLE PETROLEUM HYDROCARBONS (>C28-C40)	mg/kg	NC	NC	NT		NT		NT		NT		NT		NT		NT		NT		NT	
SA-6 Fractionated Extractable	NJDEP EPH	PETROLEUM HYDROCARBONS	mg/kg	NC	NC	NT		NT		NT		NT		NT		NT		NT		NT		NT	
		Residual Range Organics C28-C40	mg/kg	NC	NC	20.2		24.3		48.9		152		54.7		109	E	321	E	310		441	
SA-6 Fractionated Extractable	NJDEP EPH	Residual Range Organics, Aliphatic	mg/kg	NC	NC	NT		NT		NT		NT		NT		NT		NT		NT		NT	
SA-6 Fractionated Extractable	NJDEP EPH	Residual Range Organics, Aromatic	mg/kg	NC	NC	NT		NT		NT		NT		NT		NT		NT		NT		NT	
		Total EPH (C9-C40)	mg/kg	NC	NC	778		781		1400		1240		915		1060		1590		1450		1720	
SA-6 Fractionated Extractable	NJDEP EPH	VOLATILE PETROLEUM HYDROCARBONS C9-C12 ALIPHATIC	mg/kg	NC	NC	NT		NT		NT		NT		NT		NT		NT		NT		NT	

Notes:

NJ 2012 MOST STRINGENT SRS – NJDEP Most Stringent Soil Remediation Standards [N.J.A.C. 7:26D; last amended 5/7/2012].

NJ 2013 IGW SOIL – NJDEP Impact to Groundwater Soil Screening Levels [N.J.A.C. 7:26D; last amended November 2013]

Criterion for total petroleum hydrocarbons based on 10,000 mg/kg cap value for total organic contaminants in the Soil Cleanup Criteria Table; last amended 5/12/1999

NC: No criterion established

Bold and underlined concentrations exceed the NJ 2012 MOST STRINGENT SRS

Bold and shaded concentrations exceed the NJ 2013 IGW SOIL or both the NJ 2013 IGW SOIL and the NJ 2012 MOST STRINGENT SRS

Depths reported in feet below ground surface

CONC: Concentration reported in milligrams per kilogram (mg/kg)

NT: Not tested

Q: Data qualifier assigned by laboratory or data validator

U: Not detected above method detection limit

Prepared by: DP 05/25/2016
Reviewed by: JLD 12/15/2016

TABLE 8F

Concrete Sample Results - General Chemistry

Study Area 6 North

Honeywell International Inc.

Jersey City, New Jersey

						Client Sample ID		088-WC-C01-051315		088-WC-C02-051315		088-WC-C03-112015		088-WC-C04-011416		088-WC-C05-011416		088-WC-C06-011416		088-WC-C07-011416		088-WC-C08-032316		088-WC-C09-032316		088-WC-C10-032316		087-WC-C19-021814		087-WC-C20-021814	
						Lab Sample ID		JB94630-1		JB94630-2		JC9030-1		JC12656-1		JC12656-2		JC12656-3		JC12656-4		JC16819-1R		JC16819-2R		JC16819-3R		JB60011-1		JB60011-2	
						Date Sampled		05/13/2015		05/13/2015		11/20/2015		01/14/2016		01/14/2016		01/14/2016		01/14/2016		03/23/2016		03/23/2016		03/23/2016		02/18/2014		02/18/2014	
						Sample Purpose		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG	
Parameter Group Name	Analytical Method	Parameter Name	Units	NJ 2012 MOST STRINGENT SRS	NJ 2013 IGW SOIL		CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q
SA-6 General Chemistry	SW7199	HEXAVALENT CHROMIUM	mg/kg	20	NC		1.1		2.3		2.1	J	2.4		1.5		1.2		3.6		0.76	J	3	J	4.5	J	0.56		0.46	U

Notes:

NJ 2012 MOST STRINGENT SRS – NJDEP Most Stringent Soil Remediation Standards [N.J.A.C. 7:26D; last amended 5/7/2012].

NJ 2013 IGW SOIL – NJDEP Impact to Groundwater Soil Screening Levels [N.J.A.C. 7:26D; last amended November 2013]

NC: No criterion established

Bold and underlined concentrations exceed the NJ 2012 MOST STRINGENT SRS

Bold and shaded concentrations exceed the NJ 2013 IGW SOIL or both the NJ 2013 IGW SOIL and the NJ 2012 MOST STRINGENT SRS

Depths reported in feet below ground surface

CONC: Concentration reported in milligrams per kilogram (mg/kg)

J: Estimated concentration

Q: Data qualifier assigned by laboratory or data validator

Prepared by: DP 05/25/2016

Reviewed by: JLD 12/15/2016

TABLE 8F

Concrete Sample Results - General Chemistry

Study Area 6 North

Honeywell International Inc.

Jersey City, New Jersey

Client Sample ID						087-WC-C21-021814		087-WC-C22-021814		087-WC-C23-021814		087-WC-C24-021814		087-WC-C25-021814		087-WC-C26-021814		087-WC-C27-021814	
Lab Sample ID						JB60011-3		JB60011-4		JB60011-5		JB60011-6		JB60011-7		JB60011-8		JB60011-9	
Date Sampled						02/18/2014		02/18/2014		02/18/2014		02/18/2014		02/18/2014		02/18/2014		02/18/2014	
Sample Purpose				NJ 2012 MOST	NJ 2013 IGW	REG		REG		REG		REG		REG		REG		REG	
Parameter Group Name	Analytical Method	Parameter Name	Units	STRINGENT SRS	SOIL	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q
SA-6 General Chemistry	SW7199	HEXAVALENT CHROMIUM	mg/kg	20	NC	0.46	U	0.47	U	0.46	U	0.59		1.5		3.1		3.3	

Notes:

NJ 2012 MOST STRINGENT SRS – NJDEP Most Stringent Soil Remediation Standards [N.J.A.C. 7:26D; last amended 5/7/2012].

NJ 2013 IGW SOIL – NJDEP Impact to Groundwater Soil Screening Levels [N.J.A.C. 7:26D; last amended November 2013]

NC: No criterion established

Bold and underlined concentrations exceed the NJ 2012 MOST STRINGENT SRS

Bold and shaded concentrations exceed the NJ 2013 IGW SOIL or both the NJ 2013 IGW SOIL and the NJ 2012 MOST STRINGENT SRS

Depths reported in feet below ground surface

CONC: Concentration reported in milligrams per kilogram (mg/kg)

J: Estimated concentration

Q: Data qualifier assigned by laboratory or data validator

Prepared by: DP 05/25/2016
Reviewed by: JLD 12/15/2016

TABLE 8G

Concrete Sample Results - TCLP

Study Area 6 North

Honeywell International Inc.

Jersey City, New Jersey

		Client Sample ID		088-WC-C01-051315		088-WC-C02-051315		088-WC-C03-112015		088-WC-C04-011416		088-WC-C05-011416		088-WC-C06-011416		088-WC-C07-011416	
		Lab Sample ID		JB94630-1A		JB94630-2A		JC9030-1A		JC12656-1A		JC12656-2A		JC12656-3A		JC12656-4A	
		Date Sampled	RCRA Toxicity Characteristics (40 CFR261.24)	05/13/2015		05/13/2015		11/20/2015		01/14/2016		01/14/2016		01/14/2016		01/14/2016	
		Sample Purpose		REG		REG		REG		REG		REG		REG		REG	
Parameter Group Name	**Parameter Name**	**Units**		**CONC**	**Q**	**CONC**	**Q**	**CONC**	**Q**	**CONC**	**Q**	**CONC**	**Q**	**CONC**	**Q**	**CONC**	**Q**
SA-6 TAL Metals	ARSENIC	mg/L	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
SA-6 TAL Metals	BARIUM	mg/L	100	1	U	1	U	1	U	1	U	1	U	1	U	1	U
SA-6 TAL Metals	CADMIUM	mg/L	1	0.025	U	0.025	U	0.025	U	0.025	U	0.025	U	0.025	U	0.025	U
SA-6 TAL Metals	CHROMIUM	mg/L	5	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
SA-6 TAL Metals	LEAD	mg/L	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
SA-6 TAL Metals	MERCURY	mg/L	0.2	0.0002	U	0.0002	U	0.0002	U	0.0002	U	0.0002	U	0.0002	U	0.0002	U
SA-6 TAL Metals	SELENIUM	mg/L	1	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
SA-6 TAL Metals	SILVER	mg/L	5	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U

		Client Sample ID	088-WC-C08-032316		088-WC-C09-032316		088-WC-C10-032316		087-WC-C19-021814		087-WC-C20-021814		087-WC-C21-021814	
		Lab Sample ID	JC16819-1A		JC16819-2A		JC16819-3A		JB60011-1A		JB60011-2A		JB60011-3A	
		Date Sampled	03/23/2016		03/23/2016		03/23/2016		02/18/2014		02/18/2014		02/18/2014	
		Sample Purpose	REG		REG		REG		REG		REG		REG	
Parameter Group Name	**Parameter Name**	**Units**	**CONC**	**Q**	**CONC**	**Q**	**CONC**	**Q**	**CONC**	**Q**	**CONC**	**Q**	**CONC**	**Q**
SA-6 TAL Metals	ARSENIC	mg/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
SA-6 TAL Metals	BARIUM	mg/L	1	U	1	U	1	U	1	U	1	U	1	U
SA-6 TAL Metals	CADMIUM	mg/L	0.025	U	0.025	U	0.025	U	0.005	U	0.005	U	0.005	U
SA-6 TAL Metals	CHROMIUM	mg/L	0.05	U	0.05	U	0.095		0.030	U	0.030	U	0.030	U
SA-6 TAL Metals	LEAD	mg/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
SA-6 TAL Metals	MERCURY	mg/L	0.0002	U	0.0002	U	0.0002	U	0.0002	U	0.0002	U	0.0002	U
SA-6 TAL Metals	SELENIUM	mg/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
SA-6 TAL Metals	SILVER	mg/L	0.05	U	0.05	U	0.05	U	0.01	U	0.01	U	0.01	U

Notes:

TAL: Target Analyte List; hexavalent chromium results included for comparison (see Table 1 for full results)

RCRA Toxicity Characteristics (40 CFR261.24)

Bold and underlined concentrations exceed the NJ 2012 MOST STRINGENT SRS

Bold and shaded concentrations exceed the NJ 2013 IGW SOIL or both the NJ 2013 IGW SOIL and the NJ 2012 MOST STRINGENT SRS

Depths reported in feet below ground surface

CONC: Concentration reported in milligrams per liter (mg/L)

Q: Data qualifier assigned by laboratory or data validator

U: Not detected above method detection limit

Prepared by: DP 05/25/2016
Reviewed by: JLD 12/15/2016

TABLE 8G

Concrete Sample Results - TCLP

Study Area 6 North

Honeywell International Inc.

Jersey City, New Jersey

			Client Sample ID		087-WC-C22-021814		087-WC-C23-021814		087-WC-C24-021814		087-WC-C25-021814		087-WC-C26-021814		087-WC-C27-021814	
			Lab Sample ID		JB60011-4A		JB60011-5A		JB60011-6A		JB60011-7A		JB60011-8A		JB60011-9A	
			Date Sampled		02/18/2014		02/18/2014		02/18/2014		02/18/2014		02/18/2014		02/18/2014	
			Sample Purpose		REG		REG		REG		REG		REG		REG	
Parameter Group Name	Parameter Name	Units	RCRA Toxicity Characteristics (40 CFR261.24)		CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q
SA-6 TAL Metals	ARSENIC	mg/L	5		0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
SA-6 TAL Metals	BARIUM	mg/L	100		1	U	1	U	1	U	1	U	1	U	1	U
SA-6 TAL Metals	CADMIUM	mg/L	1		0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U
SA-6 TAL Metals	CHROMIUM	mg/L	5		0.030	U	0.030	U	0.030	U	0.030	U	0.054		0.056	
SA-6 TAL Metals	LEAD	mg/L	5		0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
SA-6 TAL Metals	MERCURY	mg/L	0.2		0.0002	U	0.0002	U	0.0002	U	0.0002	U	0.0002	U	0.0002	U
SA-6 TAL Metals	SELENIUM	mg/L	1		0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
SA-6 TAL Metals	SILVER	mg/L	5		0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U

Notes:

TAL: Target Analyte List; hexavalent chromium results included for comparison (see Table 1 for full results)

RCRA Toxicity Characteristics (40 CFR261.24)

Bold and underlined concentrations exceed the NJ 2012 MOST STRINGENT SRS

Bold and shaded concentrations exceed the NJ 2013 IGW SOIL or both the NJ 2013 IGW SOIL and the NJ 2012 MOST STRINGENT SRS

Depths reported in feet below ground surface

CONC: Concentration reported in milligrams per liter (mg/L)

Q: Data qualifier assigned by laboratory or data validator

U: Not detected above method detection limit

Prepared by: DP 05/25/2016
Reviewed by: JLD 12/15/2016

TABLE 8H

Concrete Sample Results - SPLP

Study Area 6 North

Honeywell International Inc.

Jersey City, New Jersey

Client Sample ID				088-WC-C03a-120215		088-WC-C03b-120215		088-WC-C03c-120215		088-WC-C08A-041416		088-WC-C08B-041416		088-WC-C08C-041416		088-WC-C09A-041416		088-WC-C09B-041416		088-WC-C09C-041416		088-WC-C10A-041416		088-WC-C10B-041416		088-WC-C10C-041416		087-WC-C23A-022514	
Lab Sample ID				JC9659-1		JC9659-2		JC9659-3		JC18378-1		JC18378-2		JC18378-3		JC18378-4		JC18378-5		JC18378-6		JC18378-7		JC18378-8		JC18378-9		JB60525-1	
Date Sampled				12/02/2015		12/02/2015		12/02/2015		04/14/2016		04/14/2016		04/14/2016		04/14/2016		04/14/2016		04/14/2016		04/14/2016		04/14/2016		04/14/2016		02/25/2014	
Sample Purpose			NJ_Default Leachate	REG		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG	
Parameter Group Name	**Parameter Name**	**Units**	**Criteria for Class II GW**	**CONC**	**Q**	**CONC**	**Q**	**CONC**	**Q**	**CONC**	**Q**	**CONC**	**Q**	**CONC**	**Q**	**CONC**	**Q**	**CONC**	**Q**	**CONC**	**Q**	**CONC**	**Q**	**CONC**	**Q**	**CONC**	**Q**	**CONC**	**Q**
SA-6 TAL Metals	MERCURY	µg/L	40	NT		NT		NT		NT		NT		NT		0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
SA-6 TAL Metals	NICKEL	µg/L	2000	NT		NT		NT		NT		NT		NT		NT		NT		NT		10	U	10	U	10	U	NT	
SA-6 GC/MS Semi-Volatiles	ISOPHORONE	µg/L	800	2	U	2.1	U	2.2	U	2.2	U	2.5	U	2.1	U	2.1	U	2.5	U	2.4	U	NT		NT		NT		NT	
SA-6 PCB/Pesticide/Herbicide	DIELDRIN	µg/L	0.04	NT		NT		NT		NT		NT		NT		NT		NT		NT		NT		NT		NT		NT	

Notes:

TAL: Target Analyte List; hexavalent chromium results included for comparison (see Table 1 for full results)

NJ_Default Leachate Criteria for Class II GW

Bold and underlined concentrations exceed the criteria

Depths reported in feet below ground surface

CONC: Concentration reported in micrograms per liter (µg/L)

NT: Not tested

Q: Data qualifier assigned by laboratory or data validator

U: Not detected above method detection limit

Prepared by: DP 05/25/2016
Reviewed by: JLD 12/15/2016

TABLE 8H

Concrete Sample Results - SPLP

Study Area 6 North

Honeywell International Inc.

Jersey City, New Jersey

Client Sample ID				087-WC-C23B-022514		087-WC-C23C-022514		087-WC-C27A-022514		087-WC-C27B-022514		087-WC-C27C-022514	
Lab Sample ID				JB60525-2		JB60525-3		JB60525-4		JB60525-5		JB60525-6	
Date Sampled				02/25/2014		02/25/2014		02/25/2014		02/25/2014		02/25/2014	
Sample Purpose				REG		REG		REG		REG		REG	
Parameter Group Name	**Parameter Name**	**Units**	**NJ_Default Leachate Criteria for Class II GW**	**CONC**	**Q**	**CONC**	**Q**	**CONC**	**Q**	**CONC**	**Q**	**CONC**	**Q**
SA-6 TAL Metals	MERCURY	µg/L	40	0.2	U	0.2		NT		NT		NT	
SA-6 TAL Metals	NICKEL	µg/L	2000	NT		NT		NT		NT		NT	
SA-6 GC/MS Semi-Volatiles	ISOPHORONE	µg/L	800	NT		NT		NT		NT		NT	
SA-6 PCB/Pesticide/Herbicide	DIELDRIN	µg/L	0.04	NT		NT		0.01	U	0.01	U	0.01	U

Notes:

TAL: Target Analyte List; hexavalent chromium results included for comparison (see Table 1 for full results)

NJ_Default Leachate Criteria for Class II GW

Bold and underlined concentrations exceed the criteria

Depths reported in feet below ground surface

CONC: Concentration reported in micrograms per liter (µg/L)

NT: Not tested

Q: Data qualifier assigned by laboratory or data validator

U: Not detected above method detection limit

Prepared by: DP 05/25/2016
Reviewed by: JLD 12/15/2016

TABLE 9

Study Area 6 North Chromium Construction Completion Report (CCR)
Chromium Remedy Elements Referenced to Previous Relevant Documents

SA-6 N Chromium Remedy Element	Declaration No.	100% Design Report Location/ Section/Work Plan	100% Design Drawing	100% Design Specification	Design Change (DC)	Section in SA-6 N Cr CCR
Mobilization and Site Prep	NA	100% DR, 3.2	GN-005, CN-105	01100	NA	2.1
Health & Safety	NA	100% DR, Appendix D - HASP	NA	01620	NA	2.2
Perimeter Air Monitoring	NA	100% DR, 3.3, Appendix E - PAMP	NA	01560	NA	2.3, 11
Site Security	NA	100% DR, 4.0	NA	01100	NA	2.4
Support Facilities	NA	100% DR, 4.3	CN-105	01100	NA	2.5
Temporary Site Utilities	NA	100% DR, 4.4	CN-105	01100	NA	2.5
Traffic Control	NA	100% DR, 4.5	CN-105	Summary of Work, 7.1.1.1 02332, Part 3	NA	2.6
Utility Abandonment	NA	100% DR, 5.3	NA	02216	NA	2.8
Utility Relocations along Route 440	NA	100% DR, 5.3	NA	02216	DC 2015-03-09	2.8
Erosion Controls	5	100% DR, 19.8	GN-005, CN-113 to CN-115; CN-125 and CN-127; CN-308	02370	DC September-16 (North)	2.1
Demolition of Existing Structures	NA	100% DR, 5.0	CN-104	02220	NA	2.7
Groundwater Testing for pH	NA	100% DR, 10.1.2	NA	02180.5	NA	2.9
Waste Classification	NA	100% DR, 4.7	NA	NA	NA	2.10
CWTP Construction	NA	100% DR, 6.3 and 6.4, Appendix I	NA	NA	NA	6.3
Monitoring Well Abandonment	5	100% DR, Appendix A-2	NA	NA	DC 2014-7-28	7.0
Monitoring Well/Piezometer Installation	4 / 5	100% DR, Appendix A-2	CN-201 to CN-203	16961, 02670	DC 2014-7-28	7.0
Dewatering/Pumping	NA	100% DR, 6.1 and 6.2	NA	02140	NA	6
GW Level Monitoring	NA	100% DR, 16.0, Appendix J	NA	16961	NA	6.4
Temporary Excavation Support	NA	100% DR, 11.0	CN-116 to CN-122; SN-501 to SN-505	02150, 02180.10	DC 2015-03-03	8.1
Excavation Extent Survey/Confirmation	3	100% DR, 11.0	NA	04160	NA	8.5

TABLE 9

Study Area 6 North Chromium Construction Completion Report (CCR)
Chromium Remedy Elements Referenced to Previous Relevant Documents

SA-6 N Chromium Remedy Element	Declaration No.	100% Design Report Location/ Section/Work Plan	100% Design Drawing	100% Design Specification	Design Change (DC)	Section in SA-6 N Cr CCR
Excavation	3	100% DR, 11.0	GN-004, CN-103, CN-116 to CN-122	02135	DC 2015-9-04 DC 2015-11-18 DC 2015-11-30	8.0-8.7; 1.4,1.5, 5.1, 5.6
Excavation Material (Stockpile) Test/Soil Reuse	3	100% DR, 4.7, Appendix G	NA	NA	DC 2014-10-31 DC 2015-01-22 DC 2015-9-02	8.2, 8.4
Offsite Transportation & Disposal	3	100% DR, 12.1 to 12.5	CN-116 to CN-122	01600, 02332	NA	8.7
Backfill Source Testing	3	100% DR, 13.0	NA	02315	DC 2013-9-24	9.2
Concrete Testing	3	100% DR, 5.0, Appendix G	NA	02201	DC 2014-10-31	9.3
Backfilling and Compaction	3	100% DR, 13.0	NA	02315	NA	9.4
In-Place Compaction Testing	3	100% DR, 13.0 and 13.2	NA	02315	NA	9.5
Hydraulic Barrier Installation	3	100% DR, 10.0	SN-201 to SN-203; SN-301	02170, 02180	DC 2013-8-14 (HB Wall) DC 2014-8-13 DC 2014-9-2 DC 2015-03-30 DC 2015-04-30 DC 2015-07-31	10.1, 10.2
Vibration Monitoring	NA	100% DR, 10.1.5	NA	02150, 02180	NA	10.3
Sheet Pile Fab & Delivery	NA	100% DR, 10.1.2	NA	02180.3	NA	10.1
Epoxy Coating	NA	100% DR, 10.1.5	NA	02180.6	NA	10.1
Joint Grouting	NA	100% DR, 10.1.2 and 10.1.5	S-203	02180.5	NA	10.1
HB Wall Installation in / adjacent Trash Pit	NA	100% DR, 10.1.8	SN-302	NA	DC 2015-04-30	10.2
Stratum D Repair near Trash Pit	5	100% DR, 10.1.8	SN-302	02180.8	DC 2015-10-22	10.7, 10.8
Consolidation of Soils in Open Space Area	3 / 4	100% DR, 11.1, Appendix G	NA	01600	DC 2014-10-31 DC 2015-01-22 DC 2015-9-02	10.4
Surcharge & Surcharge Monitoring	4	100% DR, Appendix N	CN-108 to CN-112	Refer to Appendix N	DC 2013-7-29	10.6

TABLE 9

Study Area 6 North Chromium Construction Completion Report (CCR)
Chromium Remedy Elements Referenced to Previous Relevant Documents

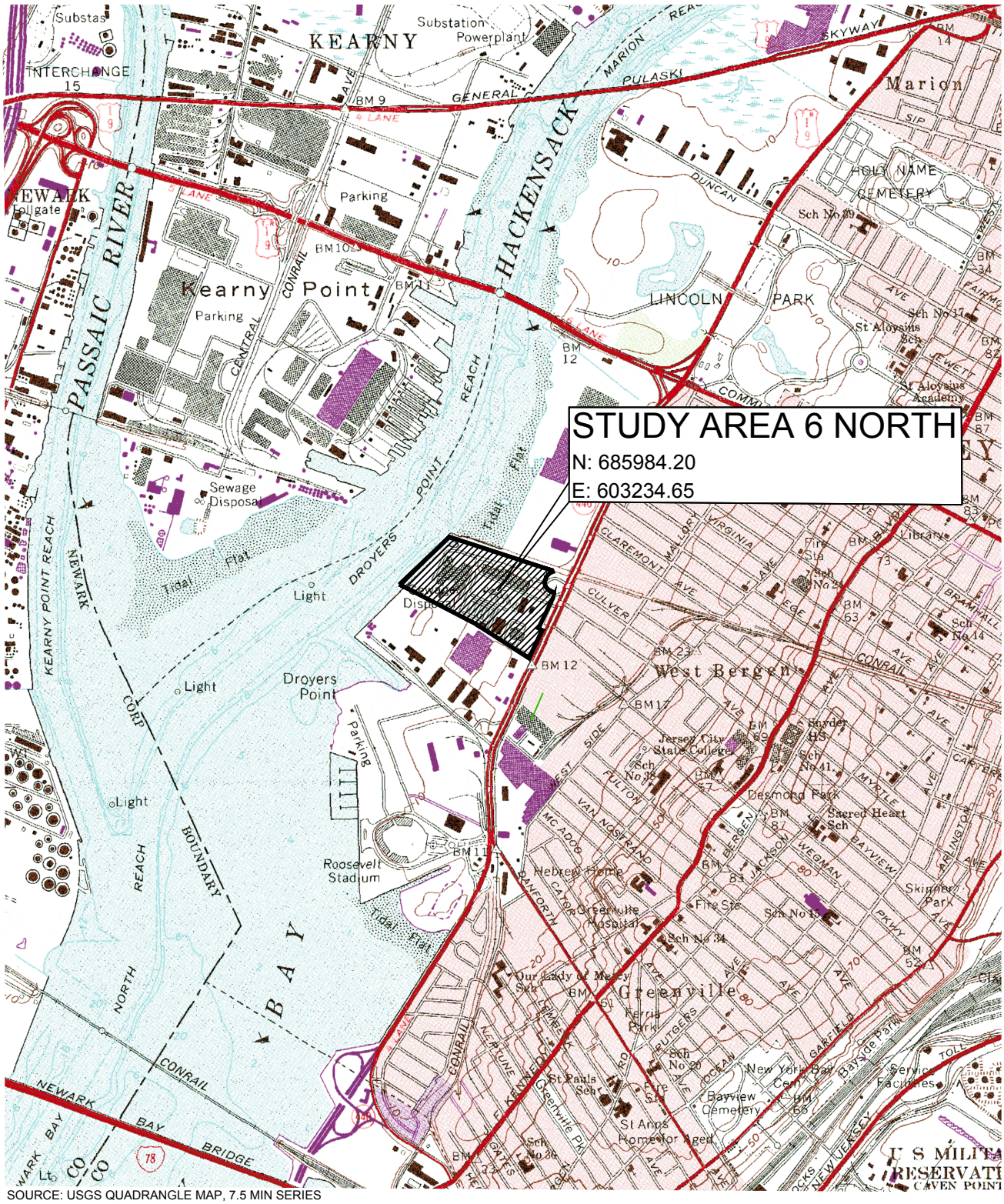
SA-6 N Chromium Remedy Element	Declaration No.	100% Design Report Location/ Section/Work Plan	100% Design Drawing	100% Design Specification	Design Change (DC)	Section in SA-6 N Cr CCR
				(North DR)		
Cap Construction	4	100% DR, 14.0	CN-123 and CN-124, CN-301, CN-309, CN-501 to CN-506	02372, 02373, 02374, 02375	DC 2015-08-19 DC 2015-08-21 DC 2015-10-02 DC 2015-12-14 DC 2016-02-02 DC 2016-02-22 DC 2016-02-25 DC 2016-5-11 DC 2016-7-12	10.9
Gas Venting System	5	100% DR, 14.2, Appendix M	CN-516	02380	NA	10.9
Spark Testing	4	NA	NA	NA	DC 2015-12-14	10.9
Utility Corridors	NA	100% DR, 14.3	CN-515	NA	DC 2015-10-02	10.9
Final Cap Cover Soils	5	100% DR, Appendix L OSDS	NA	02315, 02900	DC 2015-9-17 DC 2016-03-21 DC 2016-04-20	10.9
Final Cap Grading	5	100% DR, 14.4	CN-125 and CN-127	NA	DC 2016-5-20 DC 2016-7-14 September 2016-(North) DC 2016-05-03	10.9, App C
Contingent GW Extraction System Installation	4 / 5	100% DR, 10.2	CN-201 to CN-203, CN-305 to CN-307	NA	DC 2014-3-25 DC 2014-11-20 DC 2016-6-6 DC 2016-12-20 DC 2015-2-24 DC 2015-05-19	10.5
Contingent GW Extraction System Connection to GWTP	5	NA	NA	NA	DC 2016-6-6	10.5
Deferred Areas	5	100% DR, 11.0	GN-004 (Note EXC6), CN-104	NA	NA	1.4, 2.8, 4.0, 18.2, 21
In-Situ Treatment	5	Work Plan for In-Situ	CN-103	NA	DC 2015-06-18	12

TABLE 9

Study Area 6 North Chromium Construction Completion Report (CCR)
Chromium Remedy Elements Referenced to Previous Relevant Documents

SA-6 N Chromium Remedy Element	Declaration No.	100% Design Report Location/ Section/Work Plan	100% Design Drawing	100% Design Specification	Design Change (DC)	Section in SA-6 N Cr CCR
		Treatment of Chromium Impacted Soil, dated September 2012			(North)	
Site Restoration	5	100% DR, 17.0, Appendix L OSDS	CN-127	02900	September 2016- (North) DC 2016-11-09	14

FIGURES



SOURCE: USGS QUADRANGLE MAP, 7.5 MIN SERIES
JERSEY CITY, NJ-NY 1967, PHOTO REVISED 1981

0 1000 2000 4000
SCALE IN FEET

Amec Foster Wheeler PROJECT No. 3480160492 DRAWING: FIGURE 1 SITE LOCATION MAP		
PREPARED/DATE: STR 01/26/17	CHECKED/DATE: DN 01/26/17	amec foster wheeler ENVIRONMENT & INFRASTRUCTURE. Inc. 200 AMERICAN METRO BLVD, SUITE 113 HAMILTON, NEW JERSEY 08619

FIGURE 1
SITE LOCATION MAP
STUDY AREA 6 NORTH - SITES 087 & 088
JERSEY CITY, NEW JERSEY

P:\CADD\HONEYWELL\JERSEY CITY\SA 6 NORTH\REPORT\FIGURE 1 SITE LOCATION MAP.dwg Wed, 22 Feb 2017 - 10:24am scott.rudkin