Cover/Certification Form

New Jersey Department of Environmental Protection
Site Remediation and Waste Management Program

COVER/CERTIFICATION FORM

(Submit with Remedial Phase Report, Receptor Evaluation, and CEA Forms)

Date Stamp
(For Department use only)

SECTION A. SITE INFORMATION

Site Name: Hudson County Chromate Sites 114, 132, 133, 135, 137, 143, Al Smith Moving, Forrest Street Properties

AKAs: Garfield Avenue Group Sites; Former Halsted Property, Fishbein, Ten West Apparel, Site 199, and Roadways

Street Address: 2 Dakota Street; 70 Carteret Ave; 824, 880, 884 & 900 Garfield Ave; 15, 22, 25, & 45 Halladay Street, 51-99 Pacific Ave; 800, 816 & 846 Garfield Ave; 33 Pacific Ave; 84-100 Forrest St; 78, 94, 98, 100, 102 &104 Halladay St

Municipality: Jersey City (*Township, Borough or City*)

County: Hudson Zip Code: 07305

Program Interest (PI) Number(s): G000005480,G000008749, 629345, 025695, 246332, G000008753, G000008759

Case Tracking Number(s) for this submission: RPC000051, RPC00001, PFR0000001; 775998, 775706, 722429, 629388, 777089, G000044581

Date Remediation Initiated Pursuant to N.J.A.C. 7:26C-2: 07/19/1990

State Plane Coordinates for a central location at the site: Easting: 611210 Northing: 683537

List current Municipal Block and Lot Numbers of the Site:

Block # 21501	Lot #(s) 1.01, 10-12, 14.01	Block # 21501	Lot #(s) 16, 17
Block # 21501	Lot #(s) 18.01, 18.02	Block # 21510	Lot #(s) 1-5, 11, 39
Block # 21501	Lot #(s) 19.01, 19.02	Block # 21509	Lot #(s) 1-3
Block # 21501	Lot #(s) 20.01, 20.02	Block # 21502	Lot #(s) 12-17

SECTION B. SUBMISSION STATUS

1. Indicate how the Electronic Data Deliverable (EDD) for this submission is being provided to the NJDEP:
   - ☒ Via Email at srpedd@dep.nj.gov (attach NJDEP confirmation email); or
   - ☐ CD (attach to this submission)
   - ☐ Not Applicable – No EDD
2. Complete the following Submission and Permit Status Table:

Remedial Phase Documents	N/A	Included in this Submission	Previously Submitted	Date of Submission	Date of Revised Submission	Date of Previous NJDEP Approval	Date of Document Withdrawal
Preliminary Assessment Report	☒	☐	☐				
Site Investigation Report	☒	☐	☐				
Remedial Investigation Report	☐	☐	☒	10/01/2018	08/31/2021	01/07/2022	
Remedial Action Work Plan	☐	☐	☒	03/31/2022	10/29/2022	01/31/2022	
Remedial Action Report	☐	☐	☒	09/08/2023			
Response Action Outcome	☒	☐	☐				
RIR Addendum for Bedrock		☒		09/23/2022	03/09/2023, 03/31/2025, 7/31/2025, 12/17/2025		
Other Submissions							
Alternative Soil Remediation Standard and/or Screening level Application Form	☒	☐	☐				
Case Inventory Document		☒					
Classification Exception Area / Well Restriction Area (CEA/WRA)	☐	☐	☒	04/18/2018	02/18/2022	03/07/2022	
Discharge to Ground Water Permit by Rule Authorization Request	☐	☐	☒	06/30/2017	05/05/2022	06/15/2022	Phase I

IEC Engineered System Response Action Report	☒	☐	☐				
Immediate Environmental Concern Report	☒	☐	☐				
LNAPL Interim Remedial Measure Report	☒	☐	☐				
Public Notification	☐	☐	☒	08/25/2021			
Receptor Evaluation	☐	☐	☒	10/20/2025			
Technical Impracticability Determination	☒	☐	☐				
Vapor Concern Mitigation Report	☒	☐	☐				
Permit Application – list:	☐						
Discharge to Groundwater PBR Request		☐	☒	02/28/2019	05/05/2022	06/15/2022	Phase II
Discharge to Groundwater PBR Request		☐	☒	04/20/2022	05/05/2022	07/17/2023	Phase III
Discharge to Groundwater PBR Request		☐	☒	03/15/2024		05/15/2024	Basal Till
Discharge to Groundwater PBR Request		☐	☒	03/15/2024		05/15/2024	Bedrock
Radionuclide Remedial Action Report	☒	☐	☐				
Radionuclide Remedial Action Workplan	☒	☐	☐				
Radionuclide Remedial Investigation Report	☒	☐	☐				
Radionuclide Remedial Investigation Workplan	☒	☐	☐				

SECTION C. SITE USE

Current Site Use: (*check all that apply*)

- ☐ Industrial
- ☐ Residential
- ☒ Commercial
- ☐ School or child care
- ☐ Agricultural
- ☐ Park or recreational use
- ☒ Vacant
- ☐ Government
- ☒ Other: Roadways

Intended Future Site Use, if known: (*check all that apply*)

- ☐ Industrial
- ☒ Residential
- ☒ Commercial
- ☐ School or child care
- ☒ Park or recreational use
- ☐ Vacant
- ☐ Government
- ☐ Future site use unknown
- ☒ Other: Canal Crossing Redevelopment **

SECTION D. CASE TYPE: (*check all that apply*)

- ☒ Administrative Consent Order (ACO)
- ☐ Brownfield Development Area (BDA)
- ☐ Child Care Facility
- ☒ Chrome Site (Chromate chemical production waste)
- ☐ Coal Gas
- ☐ Due Diligence with RAO
- ☐ Hazardous Discharge Remediation Fund (HDSRF) Grant/Loan
- ☐ ISRA
- ☐ Landfill (SRP subject only)
- ☐ Regulated Underground Storage Tank (UST)
- ☐ Remediation Agreement (RA)/Remediation Certification
- ☐ School Development Authority (SDA)
- ☐ School facility
- ☐ Spill Act Defense – Government Entity
- ☐ Spill Act Discharge
- ☐ UST Grant/Loan
- ☐ Other: _____

Federal Case (*check all that apply*)

☐ RCRA GPRA 2020 ☐ CERCLA/NPL ☐ USDOD ☐ USDOE

1. Is the party conducting remediation a government entity? ..... ☐ Yes ☒ No

If "Yes," check one: ☐ Federal ☐ State ☐ Municipal ☐ County

SECTION E. PUBLIC FUNDS

Did the remediation utilize public funds? ..... ☐ Yes ☒ No

If "Yes," check applicable:

- ☐ UST Grant
- ☐ HDSRF Grant
- ☐ Spill Fund
- ☐ UST Loan
- ☐ HDSRF Loan
- ☐ Schools Development Authority
- ☐ Brownfield Reimbursement Program
- ☐ Landfill Reimbursement Program
- ☐ Environmental Infrastructure Trust

SECTION F. LICENSED SITE REMEDIATION PROFESSIONAL INFORMATION AND STATEMENT

LSRP ID Number: 715473

First Name: Robert Last Name: Fisler

Phone Numbers: (978) 234-5016 Ext.: Fax:

Mailing Address: 345 Wall Street

Municipality: Princeton State: NJ Zip Code: 08540

Email Address: rfisler@haleyaldrich.com

This statement shall be signed by the LSRP who is submitting this notification in accordance with N.J.S.A. 58:10C-14, and N.J.S.A. 58:10B-1.3b(1) and (2).

(1) I certify, as a Licensed Site Remediation Professional authorized pursuant to N.J.S.A. 58:10C-1 et seq. to conduct business in New Jersey, that for the remediation described in this submission, and all attachments included in this submission, I personally: Managed, supervised, or performed the remediation conducted at this site that is described in this submission, and all attachments included in this submission; and/or periodically reviewed and evaluated the work performed by other persons that forms the basis for the information in this submission; and/or completed the work of another site remediation professional, licensed or not, after having: (1) reviewed all available documentation on which I relied; (2) conducted a site visit and observed the then-current conditions and verified the status of as much of the work as was reasonably observable; and (3)concluded, in the exercise of my independent professional judgment, that there was sufficient information upon which to complete any additional phase of remediation and prepare workplans and reports related thereto.

(2) I certify:

- *That I have read this submission and all attachments to this submission;*
- *That in performing the professional services as the licensed site remediation professional for the entire site or each area of concern, I adhered to the professional conduct standards and requirements governing licensed site remediation professionals provided in N.J.S.A. 58:10C-16;*
- *That the remediation conducted at the entire site or each area of concern, that is described in this submission and all attachments to this submission, was conducted pursuant to and in compliance with the remediation requirements in N.J.S.A. 58:10C-14.c;*
- *That the remediation described in this submission, and all attachments to this submission, was conducted pursuant to and in compliance with the regulations of the Site Remediation Professional Licensing Board at N.J.A.C. 7:26I; and*
- *That the information contained in this submission and all attachments to this submission is true, accurate, and complete.*

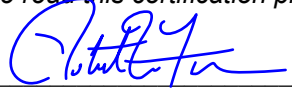
(3) I certify, when this submission includes a response action outcome, that the entire site or each area of concern has been remediated in compliance with all applicable statutes, rules, and regulations and is protective of public health and safety and the environment.

(4) I certify that no other person is authorized or able to use any password, encryption method, or electronic signature that the Board or the Department have provided to me.

(5) I certify that I understand and acknowledge that:

- *If I knowingly make a false statement, representation, or certification in any document or information I submit to the Department I may be subject to civil and administrative enforcement pursuant to N.J.S.A. 58:10C-17.a.1(a)through (f) by the Board, including but not limited to license suspension, revocation, or denial of renewal; and*
- *If I purposely, knowingly, or recklessly make a false statement, representation, or certification in any application, form, record, document or other information submitted to the Department or required to be maintained pursuant to the Site Remediation Reform Act, I shall be guilty, upon conviction, of a crime of the third degree and shall, notwithstanding the provisions of subsection b. of N.J.S.2C:43-3, be subject to a fine of not less than $5,000 nor more than $75,000 per day of violation, or by imprisonment, or both.*

(6) I certify that I have read this certification prior to signing, certifying, and making this submission.

LSRP Signature:  Date: 12/17/2025

LSRP Name: Robert Fisler, LSRP

Company Name: Haley & Aldrich

SECTION G. PERSON RESPONSIBLE FOR CONDUCTING THE REMEDIATION INFORMATION AND CERTIFICATION

Full Legal Name of the Person Responsible for Conducting the Remediation: PPG

Representative First Name: Brianne Representative Last Name: Hastings

Title: Senior Remediation Project Manager

Phone Number: (412) 613-2743 Ext.: FAX:

Mailing Address: One PPG Place, 37th Floor

Municipality: Pittsburgh State: PA Zip code: 15272

Email Address: bhastings@ppg.com

This certification shall be signed by the person responsible for conducting the remediation who is submitting this notification in accordance with Administrative Requirements for the Remediation of Contaminated Sites rule at N.J.A.C. 7:26C-1.5(a).

I certify under penalty of law that I have personally examined and am familiar with the information submitted herein, including all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, to the best of my knowledge, I believe that the submitted information is true, accurate and complete. I am aware that there are significant civil penalties for knowingly submitting false, inaccurate or incomplete information and that I am committing a crime of the fourth degree if I make a written false statement which I do not believe to be true. I am also aware that if I knowingly direct or authorize the violation of any statute, I am personally liable for the penalties.

Signature: Brianne J Hastings Date: 12/17/2025

Name/Title: Brianne Hastings/Sr. Remediation Project Manager

For CEA Submissions:

☐ Check this box if the person above is also the property owner of the site or their representative. If this person is not the site property owner, please ensure the site property owner's name and address is in the first line of the table in Section E.2 of the Classification Exception Area / Well Restriction Area (CEA/WRA) Fact Sheet Form.

Completed forms should be sent to:

Bureau of Case Assignment & Initial Notice
Site Remediation Program
NJ Department of Environmental Protection
401-05H
PO Box 420
Trenton, NJ 08625-0420

Receptor Evaluation Form

New Jersey Department of Environmental Protection
Contaminated Site Remediation & Redevelopment Program

RECEPTOR EVALUATION (RE) FORM

Date Stamp
(For Department use only)

SECTION A. SITE

Forrest Street Properties, Halsted, Fishbein, Ten West Apparel, Roadways, Site 199

Site Name: Hudson Country Chromate Sites 114, 132, 133,135, 137, 143, Al Smith Moving

Program Interest (PI) Number(s): G000005480, G000008749, 629345, 025695, 246332, G000008753, G000008759

Communication Center Number(s) and/or ISRA number(s) for this submission: (as *many as will fit in the space provided)*

N/A

This form must be attached to the Cover/Certification Form if not submitted through a Remedial Phase Online Service

PI #s Continued: 775998, 775706, 722429, 629388, 777089, G000044581

Indicate the type of submission:

☐ Initial RE Submission pursuant to N.J.A.C. 7:26E-1.12(c)

☒ Updated RE Submission pursuant to N.J.A.C.7:26E1.12(d) and (e)

Indicate the reason for submission of an updated RE form

- ☐ Submission of an Immediate Environmental Concern (IEC) Source Control Report
- ☒ Submission of a Remedial Investigation Report
- ☐ Submission of a Remedial Action Report.

Check if included in updated RE

- ☐ The known concentration or extent of contamination in any medium has increased;
- ☐ A new AOC has been identified;
- ☐ A new receptor has been identified;
- ☐ A new exposure pathway has been identified.

SECTION B. ON-SITE AND SURROUNDING PROPERTY USE

1. Identify any sensitive populations/uses that are currently on-site or within 200 feet of the site property boundary (*check all that apply*):

	On-site	Off-site
None of the following	☒	☐
Residences or residential property	☐	☒
Public, Charter, or Private Schools Grades K-12	☐	☐
Child care centers	☐	☐
Public parks, playgrounds, or other recreation areas	☐	☒
Other sensitive population use(s); Explain:_____	☐	☐

For each box checked above, include the following: facility name, address, type of use, and a map depicting each location relative to the site.

2. Current site uses (*check all that apply*): See attachment 1

- ☐ Industrial
- ☐ Residential
- ☒ Commercial
- ☐ School or child care
- ☐ Government
- ☐ Park or recreational use
- ☒ Vacant
- ☐ Agricultural
- ☒ Other: Roadways

3. Planned future on-site uses and off-site uses within 200 feet of the site boundary (*check all that apply*):

On-Site	Off-Site		On-Site	Off-Site		On-Site	Off-Site	
☐	☐	Industrial	☒	☒	Residential	☒	☒	Commercial
☐	☐	School or child care	☐	☐	Government	☒	☒	Park or recreational use
☐	☐	Vacant	☐	☐	Agricultural	☒	☒	Other: Canal Crossing Redevelopment**

Provide a map depicting the location of the proposed changes in land use.

SECTION C. ATTACHED DOCUMENTS

** Refer to https://www.nj.gov/dca/divisions/sandyrecovery/pdf/NRC39562_CanalCrossingRedevelopmentPlan.pdf

The following documents are attached (check all that apply):
Note: All electronic copies should be provided in Adobe PDF file format.

☒ Tables comparing sampling results to all appropriate remediation standards (N.J.A.C. 7:26D), Vapor Intrusion Screening Levels, and ecological screening criteria pursuant to N.J.A.C. 7:26E-1.5. Refer to December 2025 GW RIR Addendum for Bedrock

☒ Map and figures showing all sampling locations, including depths with sample results pursuant to N.J.A.C. 7:26E-1.6.

☐ Figures showing vapor intrusion investigation areas including ground water contamination plume(s), ground water concentration isopleths, soil-gas sampling locations, indoor air sampling locations, analytical data compared to appropriate screening levels and remediation standards, and all other applicable information.

☐ Figures showing ecological evaluation investigation areas including migration pathways, media sampling locations, environmentally sensitive natural resource locations, analytical data compared to appropriate screening levels, and all other applicable information.

☒ Well Search

☐ Door-to-door survey results

☐ Office of Natural Lands Management Natural Heritage program letter or summary of NJDEP GeoWeb Landscape Project data.

☐ Previous NJDEP approvals or correspondence pertaining to the receptor evaluation.

SECTION D. DESCRIPTION OF CONTAMINATION

1. Identify if any of the following exist at the site:

Yes	No	
☒	☐	Free product [N.J.A.C. 7:26E-1.8] identified is ☐ LNAPL* or ☒ DNAPL**.
		Date first identified: 10/01/2007
☐	☒	Residual product [N.J.A.C. 7:26E-1.8]
☒	☐	Other primary source materials not identified above (e.g., buried drums containers.
		Explain: Source material has been remediated or engineering controls are in place (refer to Section 3.1)

* LNAPL – measured thickness of .01 feet or more

**DNAPL – See *Ground Water* SI/RI/RA *Technical Guidance* and *USEPA Assessment and Delineation of DNAPL Source Zones at Hazardous Waste Sites* (attached as Appendix A of the Ground Water SI/RI/RA Technical Guidance) available at: https://dep.nj.gov/srp/guidance/#pa_si_ri_gw
Also, see US EPA DNAPL Overview available at:
http://cluin.org/contaminantfocus/default.focus/sec/Dense_Nonaqueous_Phase_Liquids_(DNAPLS)/cat/Overview

2. Soil Migration Pathway

Has soil contamination been delineated to the most stringent of Soil Remediation Standards pursuant to N.J.A.C. 7:26E-4.2 of the Technical Guidance For Site Remediation? ☒ Yes ☐ No

Are all soils either below the applicable Remediation Standard or under an institutional control (i.e. deed notice)? ☐ Yes ☒ No

3. If this evaluation is submitted with a technical document that includes contaminant summary information, proceed to Section E. Otherwise, attach a brief summary of all currently available data and information to be included in the site investigation or remedial investigation report.

SECTION E. GROUND WATER USE

1. Have all potentially contaminated areas of concern been evaluated to determine if there is a potential that ground water is contaminated pursuant to N.J.A.C. 7:26E-3.5? ☒ Yes ☐ No

2. Is a ground water investigation required? ☒ Yes ☐ No

3. Has a ground water investigation been conducted? ☒ Yes ☐ No

   If "**Yes**":
   Has the laboratory data package been received? ☒ Yes ☐ No

   If the laboratory data package has not been received, provide the expected due date for data: _____ and proceed to Section F.

   If "**No**" Proceed to Section F.

4. Is ground water contaminated above the Ground Water Remediation Standards [N.J.A.C.7:26D]? ☒ Yes ☐ No

   If "**Yes**": Provide the date that the laboratory data package was available and confirmed contamination was identified above the Ground Water Remediation Standards. Date: 05/15/2007

   If "**No**": Proceed to Section F.

5. Has ground water contamination been delineated to the applicable Remediation Standard pursuant to N.J.A.C. 7:26E-4.3? ☒ Yes ☐ No

6. What is the ground water classification for this site as per N.J.A.C. 7:9C? (*check all that apply*)

   ☐ Class I-A
   ☐ Class I-PL Pinelands Protection Area
   ☐ Class I-PL Pinelands Preservation Area
   ☒ Class II-A
   ☐ Class III-A
   ☐ Class III-B

7. Has a well search been completed? ☒ Yes ☐ No

   Date of most recent or updated well search: 09/30/2025 See attachment 2

8. Is a completed Well Search Spreadsheet or historical well search table attached and has an electronic copy of the spreadsheet been submitted to srpgis_wrs@dep.nj.gov. ☐ Yes ☒ No

   Note: Redacted wells must be excluded from all non-confidential documents including maps, tables, etc. (see RE Instructions).

   If "**No**" explain: Receptor evaluation and attachments will be submitted directly to the NJDEP case manager for review.

9. Are any potable or irrigation wells located within ½ mile of the currently known extent of contamination? ☐ Yes ☒ No

   If "**Yes**":

   - A door-to-door survey is required in accordance with [N.J.A.C.7:26E-1.14(a)1ii]. Attach results of the door-to-door survey.
   - Identify if any of the following conditions exist based on the well search and door-to-door survey [N.J.A.C.7:26E-1.14(a)]:

Yes	No	
☐	☐	Any potable or irrigation wells (permitted or unpermitted) located within 500 feet of each known point of ground water contamination when the ground water flow direction is not known.
☐	☐	Any potable or irrigation wells (permitted or unpermitted) wells located 250 feet up gradient, 500 feet side gradient, and 500 feet down gradient of the currently known extent of ground water contamination when the ground water flow direction is known.
☐	☐	Ground water contamination from the discharge is located within a Tier 1 well head protection area).

10. Has sampling been conducted of ☐ potable well(s) and /or ☐ non-potable use well(s)? ..... ☐ Yes ☒ No

If "No," provide justification then proceed to Question 12.

No potable wells or irrigation wells within 1000 feet of currently known extent of contamination

11. Has contamination been identified in potable well(s), **not attributed to background conditions**, above the Class II Ground Water Remediation Standards or State Safe Drinking Water levels (N.J.A.C 7:26D and 7:10-1, respectively), whichever is applicable? ..... ☐ Yes ☐ No

If "**Yes**":

- Provide the date laboratory data package was received: _____
- Follow the Immediate Environmental Concern (IEC) Technical Guidance at http://www.nj.gov/dep/srp/guidance/IEC/index.html for required actions and answer the following:
- Has an engineered system response action been completed on all impacted receptors? ..... ☐ Yes ☐ No
  Provide a brief narrative description as an attachment.

Date completed:_____NJDEP Immediate Concern Unit Case Manager: _____

12. Has contamination been identified in non-potable well(s), **not attributed to background conditions**, above the Class II Ground Water Remediation Standards?..... ☐ Yes ☒ No

If "**Yes**," provide the date laboratory data package was received: _____

13. Has the receptor evaluation of ground water been completed pursuant to N.J.A.C. 7:26E-1.14? ..... ☒ Yes ☐ No

SECTION F. VAPOR INTRUSION (VI)

1. Indicate if any of the following conditions exist that trigger an evaluation of the Vapor Intrusion Exposure Pathway. For each condition checked "Yes," provide the date the condition was first identified (i.e., date laboratory data package was available). *See NJDEP Vapor Intrusion Technical Guidance*.

Yes	No		Date Condition First Identified
☐	☐	Ground water contamination in excess of the NJDEP Vapor Intrusion Ground Water Screening Levels and within 30 feet of a building for Petroleum Hydrocarbon Compounds (PHC) or 100 feet for non-PHC compounds ...	_____
☐	☐	Free product within 30 feet of a building for PHC or 100 feet for non-PHC compounds	_____
☐	☐	Soil gas contamination detected at concentrations that exceed the NJDEP Soil Gas Screening Levels	_____
☐	☐	Indoor air contamination that exceeds the NJDEP Indoor Air Remediation Standards	_____
☐	☐	Wet basement or sump containing free product or ground water containing detectable concentration of volatile organic contaminants	_____
☐	☐	Methane generating conditions causing oxygen deficient or explosion concern	_____
☐	☐	Other human or safety concern for the vapor intrusion exposure pathway (e.g.,. elemental mercury, unsaturated soil contamination), *explain below:*	_____

This receptor evaluation is being submitted as part of a Groundwater Remedial Investigation Report (Addendum). PPG and Public Service Electric and Gas Company (PSEG) are jointly responsible for remediation of manufactured gas plant (MGP) impacts including those emanating from Site 114. PSEG, as the former MGP operator, is the lead party for addressing these impacts. In 2012 and 2013, PSEG performed a VI investigation in accordance with CMX's March 2010 *Vapor Intrusion Investigation Work Plan, Former Halladay Street Gas Works, Jersey City, New Jersey.* No further evaluation of vapor intrusion as part of the groundwater RI is necessary.

If you checked "No" to <u>all</u> boxes in Question 1., proceed to Section G, "Ecological Receptors", otherwise complete the rest of this section.

2. Has ground water contamination been delineated to the Vapor Intrusion Ground Water Screening Levels pursuant to N.J.A.C 7:26E-1.15(a)? ☐ Yes ☐ No

3. Was a site-specific screening level, alternative remediation standard, modeling, or other alternative approach employed for the vapor intrusion exposure pathway? ☐ Yes ☐ No

4. Identify and locate, on a scaled map, any buildings that exist within the following distances from ground water contaminant concentrations above the NJDEP Vapor Intrusion Ground Water Screening Levels or other specific triggers noted in Question 1 above.:

Yes	No	
☐	☐	30 feet of petroleum free product or dissolved petroleum hydrocarbon contamination in ground water
☐	☐	100 feet of any non-petroleum free product (e.g. chlorinated hydrocarbons) or any non-petroleum dissolved volatile organic ground water contamination
☐	☐	Other specific triggers
☐	☐	No buildings exist within the specified distances or other specific triggers

5. Is the vapor intrusion exposure pathway a concern at or adjacent to the site?) ☐ Yes ☐ No

*(if **"No,"** attach justification)*

6. Has soil gas sampling of the building(s) been conducted? ☐ Yes ☐ No

If "**Yes**," has the laboratory data package been received? ☐ Yes ☐ No

If the data package was received, did constituents exceed the NJDEP Soil Gas Screening Levels? ☐ Yes ☐ No

If "**No**," attach technical justification consistent with the NJDEP Vapor Intrusion Technical Guidance.

7. Has indoor air sampling been conducted at the identified building(s)? ☐ Yes ☐ No

If "**Yes**," has the laboratory data package been received? ☐ Yes ☐ No

If "**Yes**," did constituents exceed the NJDEP Indoor Air Remediation Standards? ☐ Yes ☐ No

If "**No**," or awaiting indoor air laboratory data package, proceed to Question 12.

8 Has indoor air contamination been identified but not suspected to be from a discharge? (if "**Yes**," attach justification) ☐ Yes ☐ No

9. Were indoor air results above the NJDEP Rapid Action Levels? ☐ Yes ☐ No

If "**Yes**":

- _ Provide the date laboratory data package was received: _____
- Has the Immediate Environmental Concern (IEC) Response Action Form notifying the NJDEP of the exceedances been submitted? ☐ Yes ☐ No
- Date: _____

Follow the IEC Technical Guidance at https://dep.nj.gov/srp/guidance/iec/ for required actions and answer the following:

- Was the IEC engineering system response for control implemented for all impacted structures? ☐ Yes ☐ No

Date implemented: _____

NJDEP Immediate Concern Unit Case Manager: _____

10. Were the results of indoor air sampling above the NJDEP Indoor Air Remediation Standards but at, or below, the Rapid Action Levels? ☐ Yes ☐ No

If "**Yes**," answer the following:

- Provide the date laboratory data package was received: _____

- Has the Vapor Concern (VC) Response Action Form notifying the NJDEP of the exceedances been submitted? ☐ Yes ☐ No

  Date: _____

- Has a Vapor Concern Mitigation plan been submitted? ☐ Yes ☐ No

  Date implemented:

- Has the Vapor Concern Mitigation Response Action Report been submitted? ☐ Yes ☐ No

  Date: _____ NJDEP Immediate Concern Unit Case Manager: _____

11. Do one or more buildings have an Indeterminate Vapor Intrusion Pathway status? ☐ Yes ☐ No

    If "**Yes**," attach a list of the building(s) with address(s) block/lot(s), and justification

12. Has the vapor intrusion investigation been completed? ☐ Yes ☐ No

If "**No**", is the vapor intrusion investigation stepping out as part of the site investigation or remedial investigation. (If "No," attach justification) ☐ Yes ☐ No

SECTION G. ECOLOGICAL RECEPTORS

1. Has an Ecological Evaluation been conducted? [N.J.A.C. 7:26E-1.16] ☒ Yes ☐ No

   Date conducted: 05/13/2011

2. Are any site-related contaminants above any Ecological Screening Criteria? ☐ Yes ☒ No
3. Are there any Environmentally Sensitive Natural Resources (ESNRs) on or adjacent to the site, or potentially impacted by site related contamination? [N.J.A.C. 7:26E-1.16] ☐ Yes ☒ No
4. Do any potential or complete migration pathways exist between Contaminant of Potential Ecological Concern (COPECs) and ESNRs, or did historic migration pathways exist? ☐ Yes ☒ No

If you answered "No" to Questions 2, 3, or 4, above <u>Stop Here</u> (form is complete).

5. If site-related free or residual product is/was present, does/did a potential or complete migration pathway exist to an ESNR? ☐ Yes ☐ No

6. Do the results of an Ecological Evaluation trigger a remedial investigation of ecological receptors? [N.J.A.C. 7:26E-4.8] ☐ Yes ☐ No

   If "**Yes**", has a remedial investigation of ecological receptors been conducted? ☐ Yes ☐ No

   Date conducted: _____

7. Do available data indicate a potential impact (COPECs above Ecological Screening Criteria in ESNRs) to ecological receptor(s), surface water, or sediment? ☐ Yes ☐ No

   If "**Yes**,"

   a) Check all ecological receptor(s), ESNRs, or media that apply:

   ☐ Surface water ☐ Sediment ☐ Soil ☐ Wetlands ☐ Threatened/Endangered Species ☐ Other

   b) If this information is not submitted with an ecological evaluation that includes contaminant summary information, attach a brief summary of all currently available data and a description of all actions to be taken to mitigate exposure.

8. Have COPECs been fully delineated to the Ecological Screening Criteria [N.J.A.C. 7:26E-4.8(c)], background concentrations, or Risk-Based Remediation Goals as applicable in:

   a) AOC with contaminant concentrations above the criteria referenced above ☐ Yes ☐ No

   b) Migration pathways ☐ Yes ☐ No

   c) ESNR ☐ Yes ☐ No

9. Has an Ecological Risk Assessment been conducted?..... ☐ Yes ☐ No

If yes, date conducted: _____

Pursuant to N.J.A.C. 7:26E-4.8, the Ecological Risk Assessment is required to be conducted during the RI phase of the remediation and must be completed within the RI Regulatory Timeframe.

10. Provide the following information for any on-site and/or off-site surface water body, which is potentially impacted by the site related discharges:

Surface Water Body Name	Stream Classification	Antidegradation Designation	Trout Production	Trout Maintenance
			☐	☐
			☐	☐
			☐	☐
			☐	☐
			☐	☐
			☐	☐

11. Has a Program Interest (PI) or Permit number been issued for any regulated areas by the Watershed & Land Management Program? (e.g. wetlands, transition areas, flood hazard areas, coastal areas, tidelands, etc.). ..... ☐ Yes ☐ No

If "**Yes**,":

Identify the type(s) of regulated areas: _____

Provide the Watershed & Land Management Program PI or Permit number(s) for the site:

_____

12 Are there any **pending** applications for Watershed & Land Management Program jurisdiction letters or approvals under review by the NJDEP for the remediation?..... ☐ Yes ☐ No

13. Are there any **valid** Watershed & Land Management Program jurisdiction letters or approvals issued for the remediation?..... ☐ Yes ☐ No

Completed forms should be sent to the municipal clerk, designate health department, and:

Srp_submissions@dep.nj.gov

Bureau of Case Assignment & Initial Notice
Contaminated Site Remediation & Redevelopment
NJ Department of Environmental Protection
401-05H
PO Box 420
Trenton, NJ 08625-0420

Attachment A.1
Properties Within 200 Feet of Project Area
PPG, Jersey City, New Jersey

BLOCK	LOT	PROPERTY CLASS	COUNTY	MUNICIPALITY	PROPERTY STREET ADDRESS	OWNER NAME	OWNER STREET ADDRESS	CITY, STATE, ZIP CODE
SENSITIVE RECEPTORS WITHIN 200 FEET								
19901	8	2 - RESIDENTIAL (SENSITIVE)	HUDSON	JERSEY CITY CITY	80-80.5 WOODWARD STREET	VASQUEZ, GILBERTO	80-80.5 WOODWARD ST.	JERSEY CITY, N.J. 07304
19901	39	2 - RESIDENTIAL (SENSITIVE)	HUDSON	JERSEY CITY CITY	103 VAN HORNE ST.	DAVLETSHINA, ALINA F.& PARSHUKOV, L	103 VAN HORNE ST.	JERSEY CITY, NJ 07304
19901	40	2 - RESIDENTIAL (SENSITIVE)	HUDSON	JERSEY CITY CITY	101 VAN HORNE ST.	101 VAN HORNE ST. CONDO.ASSOC., INC	101 VAN HORNE ST.	JERSEY CITY, NJ 07304
19902	29	2 - RESIDENTIAL (SENSITIVE)	HUDSON	JERSEY CITY CITY	187 HALLADAY ST.	BLOCKY, RICHARD	187 HALLADAY ST.	JERSEY CITY, NJ 07304
19902	30	2 - RESIDENTIAL (SENSITIVE)	HUDSON	JERSEY CITY CITY	185 HALLADAY ST.	BARROWS,JAMES & KORZAN,EVA H/W	185 HALLADAY ST.	JERSEY CITY, N.J. 07304
19902	31	2 - RESIDENTIAL (SENSITIVE)	HUDSON	JERSEY CITY CITY	183 HALLADAY ST.	BRADSHAW, TIMOTHY & CARLY	183 HALLADAY ST.	JERSEY CITY, NJ 07304
19902	32	2 - RESIDENTIAL (SENSITIVE)	HUDSON	JERSEY CITY CITY	181 HALLADAY ST.	DWULET, JANET M.	181 HALLADAY ST.	JERSEY CITY, NJ 07304
19902	33	2 - RESIDENTIAL (SENSITIVE)	HUDSON	JERSEY CITY CITY	179 HALLADAY ST.	J & J DBH, LLC	60 E. LINDEN AVE APT. 9A	ENGLEWOOD, NJ 07631
19902	34	2 - RESIDENTIAL (SENSITIVE)	HUDSON	JERSEY CITY CITY	177 HALLADAY ST.	MILLER-WEBB, MARY I.	255 PACIFIC AVENUE	JERSEY CITY, N.J. 07304
19902	35	2 - RESIDENTIAL (SENSITIVE)	HUDSON	JERSEY CITY CITY	175 HALLADAY ST.	DOTY, CECELIA M.	175 HALLADAY ST.	JERSEY CITY, N.J. 07304
19902	37	2 - RESIDENTIAL (SENSITIVE)	HUDSON	JERSEY CITY CITY	171 HALLADAY ST.	PAULINO , DIGNA	3335 DECATUR AVE. #3H	BRONX , NEW YORK 10467
19902	38	2 - RESIDENTIAL (SENSITIVE)	HUDSON	JERSEY CITY CITY	169 HALLADAY ST.	169 HALLADAY LLC.	207 8TH ST.	JERSEY CITY, NJ 07302
19902	11	2 - RESIDENTIAL (SENSITIVE)	HUDSON	JERSEY CITY CITY	110 VAN HORNE ST.	CORNIELLE, AILEEN A.	110 VAN HORNE ST.	JERSEY CITY, N.J. 07304
19902	9	2 - RESIDENTIAL (SENSITIVE)	HUDSON	JERSEY CITY CITY	106 VAN HORNE ST.	RODRIGUEZ, MIRIAM	106 VAN HORNE ST.	JERSEY CITY, NJ 07304
19902	8	2 - RESIDENTIAL (SENSITIVE)	HUDSON	JERSEY CITY CITY	104 VAN HORNE ST.	PHILISTIN, JEAN O. & RENETTE P.	104 VAN HORNE ST.	JERSEY CITY, N.J. 07304
19902	7	2 - RESIDENTIAL (SENSITIVE)	HUDSON	JERSEY CITY CITY	102 VAN HORNE ST.	WANG, ZHI SHAN	25 HIGH ST APT 5	JERSEY CITY, NJ 07306
19902	6	2 - RESIDENTIAL (SENSITIVE)	HUDSON	JERSEY CITY CITY	100 VAN HORNE ST.	HARRIS, ELIZABETH	100 VAN HORNE ST.	JERSEY CITY, N.J. 07304
19902	5	2 - RESIDENTIAL (SENSITIVE)	HUDSON	JERSEY CITY CITY	98 VAN HORNE ST.	98 VAN HORNE STREET CONDO.ASSOC.INC	98 VAN HORNE ST.	JERSEY CITY, NJ 07304
19902	4	2 - RESIDENTIAL (SENSITIVE)	HUDSON	JERSEY CITY CITY	96 VAN HORNE ST.	96 VAN HORNE STREET CONDO.ASSOC.INC	17 FOUR COLUMNS DR	MORGANVILLE, NJ 07751
19902	3	2 - RESIDENTIAL (SENSITIVE)	HUDSON	JERSEY CITY CITY	94 VAN HORNE ST.	94 VAN HORNE STREET CONDO.ASSOC.INC	94 VAN HORNE ST.	JERSEY CITY, NJ 07304
19902	2	2 - RESIDENTIAL (SENSITIVE)	HUDSON	JERSEY CITY CITY	92 VAN HORNE ST.	IQBAL, SUMRA	92 VAN HORNE ST.	JERSEY CITY, NJ 07304
19903	12	2 - RESIDENTIAL (SENSITIVE)	HUDSON	JERSEY CITY CITY	186 HALLADAY ST.	BARNES, ANNA & KOSAKOWSKI, JOSEPH	186 HALLADAY ST.	JERSEY CITY, NJ 07304
19903	13	2 - RESIDENTIAL (SENSITIVE)	HUDSON	JERSEY CITY CITY	188 HALLADAY ST.	350 RANDOLPH, L.L.C.	336 ST.PAULS AVE.	JERSEY CITY, NJ 07306
19902	36	2 - RESIDENTIAL (SENSITIVE)	HUDSON	JERSEY CITY CITY	173 HALLADAY ST.	173 HALLADAY ST.CONDOMINIUM ASSOC.	173 HALLADAY ST.	JERSEY CITY, NJ 07304
19902	36	2 - RESIDENTIAL (SENSITIVE)	HUDSON	JERSEY CITY CITY	173 HALLADAY ST.	173 HALLADAY ST.CONDOMINIUM ASSOC.	173 HALLADAY ST.	JERSEY CITY, NJ 07304
21404	7	2 - RESIDENTIAL (SENSITIVE)	HUDSON	JERSEY CITY CITY	118 CARTERET AVE.	BAAL, SEVERINO & OFELIA	320 LEMBECK AVE	JERSEY CITY, NJ 07305
21404	23	2 - RESIDENTIAL (SENSITIVE)	HUDSON	JERSEY CITY CITY	172 RANDOLPH AVE.	SHAW, DOLORES	172 RANDOLPH AVE.	JERSEY CITY, NJ 07305
21404	8	2 - RESIDENTIAL (SENSITIVE)	HUDSON	JERSEY CITY CITY	122 CARTERET AVE.	MIDNIGHT PUBLISHING LCC.	528 BERGEN AVE., #4434	JERSEY CITY, NJ 07304
21404	11	2 - RESIDENTIAL (SENSITIVE)	HUDSON	JERSEY CITY CITY	144 RANDOLPH AVE.	PERKINS, GLENDA	144 RANDOLPH AVE.	JERSEY CITY, N.J. 07305
21404	12	2 - RESIDENTIAL (SENSITIVE)	HUDSON	JERSEY CITY CITY	146 RANDOLPH AVE.	JC SWB EQUITIES NINE, LLC	7 GLENWOOD AVE., #STE418	EAST ORANGE, NJ 07017
21404	13	2 - RESIDENTIAL (SENSITIVE)	HUDSON	JERSEY CITY CITY	148A RANDOLPH AVE.	JOSEPH, JAMIE	148A RANDOLPH AVENUE.	JERSEY CITY, NJ 07305
21404	16	2 - RESIDENTIAL (SENSITIVE)	HUDSON	JERSEY CITY CITY	154 RANDOLPH AVE.	BURWELL, DEBORAH	154 RANDOLPH AVE.	JERSEY CITY, NJ 07305
21404	17	2 - RESIDENTIAL (SENSITIVE)	HUDSON	JERSEY CITY CITY	156 RANDOLPH AVE.	BHOSALE, RISHIKESH PRAMOD	156 RANDOLPH AVENUE	JERSEY CITY, NJ 07305
21404	18	2 - RESIDENTIAL (SENSITIVE)	HUDSON	JERSEY CITY CITY	158 RANDOLPH AVE.	KOONCE, GERALD	158 RANDOLPH AVE.	JERSEY CITY, NJ 07305
21404	19	2 - RESIDENTIAL (SENSITIVE)	HUDSON	JERSEY CITY CITY	160 RANDOLPH AVE.	FELKER, MYLES L.	160 RANDOLPH AVE.	JERSEY CITY, N.J. 07305
21404	9	2 - RESIDENTIAL (SENSITIVE)	HUDSON	JERSEY CITY CITY	124 CARTERET AVE.	REID, DWAYNE	9 PULASKI AVE	CARTERET, NJ 07008
21404	10	2 - RESIDENTIAL (SENSITIVE)	HUDSON	JERSEY CITY CITY	142 RANDOLPH AVE.	ESTATE OF MARION,R.JR.,&E.%MARION,C	142 RANDOLPH AVE.	JERSEY CITY, N.J. 07305
21404	15	2 - RESIDENTIAL (SENSITIVE)	HUDSON	JERSEY CITY CITY	152 RANDOLPH AVE.	GULIN,IVAN & VOLODIMIR TRUSTEES	152 RANDOLPH AVE.	JERSEY CITY, NJ 07305
21404	20	2 - RESIDENTIAL (SENSITIVE)	HUDSON	JERSEY CITY CITY	166 RANDOLPH AVE.	TORAL, RAFAEL & ROGELIO	PO BOX 8189	JERSEY CITY, NJ 07308
21404	21	2 - RESIDENTIAL (SENSITIVE)	HUDSON	JERSEY CITY CITY	168 RANDOLPH AVE.	TUDELA, LUIS V. & KATHIUSKA	168 RANDOLPH AVE.	JERSEY CITY, NJ 07302
21404	22	2 - RESIDENTIAL (SENSITIVE)	HUDSON	JERSEY CITY CITY	170 RANDOLPH AVE.	LANCASTER REALTY,LLC	3737 WEST AVE #M10	LANCASTER,CA 93536
21404	25	2 - RESIDENTIAL (SENSITIVE)	HUDSON	JERSEY CITY CITY	180 RANDOLPH AVE.	GND RANDOLPH HOLDINGS, LLC	17 FOUR COLUMNS DR.	MORGANVILLE, NJ 07751

Attachment A.1
Properties Within 200 Feet of Project Area
PPG, Jersey City, New Jersey

BLOCK	LOT	PROPERTY CLASS	COUNTY	MUNICIPALITY	PROPERTY STREET ADDRESS	OWNER NAME	OWNER STREET ADDRESS	CITY, STATE, ZIP CODE
21404	27	2 - RESIDENTIAL (SENSITIVE)	HUDSON	JERSEY CITY CITY	184 RANDOLPH AVE.	THOMPSON, ROBERT G. & ADOLPHUS,LENA	184 RANDOLPH AVE.	JERSEY CITY, NJ 07305
21404	28	2 - RESIDENTIAL (SENSITIVE)	HUDSON	JERSEY CITY CITY	186 RANDOLPH AVE.	OKOEGUUALE, ERO- MOSELE	186 RANDOLPH AVE.	JERSEY CITY, NJ 07304
21404	29	2 - RESIDENTIAL (SENSITIVE)	HUDSON	JERSEY CITY CITY	188 RANDOLPH AVE.	MAZUR, ANATOLIY & MARIA	8 RALE PLACE	PALM COAST, FL 32164
21404	30	2 - RESIDENTIAL (SENSITIVE)	HUDSON	JERSEY CITY CITY	190 RANDOLPH AVE.	GULIN,IRYNA & VOLODYMYR	190 RANDOLPH AVE.	JERSEY CITY, NJ 07304
21404	31	2 - RESIDENTIAL (SENSITIVE)	HUDSON	JERSEY CITY CITY	192 RANDOLPH AVE.	ORACH, ROSTYSLAV	711 AMSTERDAM AVE #21L	NEW YORK, NY 10025
21404	32	2 - RESIDENTIAL (SENSITIVE)	HUDSON	JERSEY CITY CITY	194 RANDOLPH AVE.	MAZUR, TARAS	194 RANDOLPH AVE.	JERSEY CITY, NJ 07305
21404	33	2 - RESIDENTIAL (SENSITIVE)	HUDSON	JERSEY CITY CITY	196 RANDOLPH AVE.	196 RANDOLPH LLC	199 VAN HORNE STREET	JERSEY CITY, NJ 07304
21404	34	2 - RESIDENTIAL (SENSITIVE)	HUDSON	JERSEY CITY CITY	198 RANDOLPH AVE.	MALICH,O.,CHAYKIVSKYY,M. & S.	198 RANDOLPH AVE.	JERSEY CITY,N.J. 07305
21404	14	2 - RESIDENTIAL (SENSITIVE)	HUDSON	JERSEY CITY CITY	150 RANDOLPH AVE.	BRUCE CONSTRUCTION CORP.	117-05 89TH AVE.	RICHMOND HILLS, NY 11418
21404	26	2 - RESIDENTIAL (SENSITIVE)	HUDSON	JERSEY CITY CITY	182 RANDOLPH AVE.	182 RANDOLPH AVE.CONDOMINIUM ASSOC.	182 RANDOLPH AVE.	JERSEY CITY, NJ 07305
21404	26	2 - RESIDENTIAL (SENSITIVE)	HUDSON	JERSEY CITY CITY	182 RANDOLPH AVE.	182 RANDOLPH AVE.CONDOMINIUM ASSOC.	182 RANDOLPH AVE.	JERSEY CITY, NJ 07305
21502	7	2 - RESIDENTIAL (SENSITIVE)	HUDSON	JERSEY CITY CITY	145 PACIFIC AVE.	145 PACIFIC AVE PARTNERD, LLC.	317 GROVE ST., STE 5	JERSEY CITY, NJ 07302
21501	9	2 - RESIDENTIAL (SENSITIVE)	HUDSON	JERSEY CITY CITY	141 HALLADAY ST.	KULOZU, BEKIR	285 PACIFIC AVENUE	JERSEY CITY, NJ 07304
21501	5	2 - RESIDENTIAL (SENSITIVE)	HUDSON	JERSEY CITY CITY	149 HALLADAY ST.	CAIN,STELLA & JAMES,LAVAR G	149 HALLADAY ST.	JERSEY CITY, NJ 07304
21501	6	2 - RESIDENTIAL (SENSITIVE)	HUDSON	JERSEY CITY CITY	147 HALLADAY ST.	MENDOZA, DONALD & MARGIE DARYL H.	147 HALLADAY ST.	JERSEY CITY, NJ 07304
21501	7	2 - RESIDENTIAL (SENSITIVE)	HUDSON	JERSEY CITY CITY	145 HALLADAY ST.	MARIE DE CHAVEZ, KATHLEEN	145 HALLADAY ST.	JERSEY CITY, NJ 07304
21501	8	2 - RESIDENTIAL (SENSITIVE)	HUDSON	JERSEY CITY CITY	143 HALLADAY ST.	BONILLA, JULISSA	143 HALLADAY ST.	JERSEY CITY, NJ 07304
22704	1	2 - RESIDENTIAL (SENSITIVE)	HUDSON	JERSEY CITY CITY	140 RANDOLPH AVE.	SECOR, DANIELLE M.	140 RANDOLPH AVE	JERSEY CITY, NJ 07305
22704	10	2 - RESIDENTIAL (SENSITIVE)	HUDSON	JERSEY CITY CITY	2 CLAREMONT AVE.	BASCOM, MALINI	2 CLAREMONT AVENUE	JERSEY CITY, N.J. 07305
22704	14	2 - RESIDENTIAL (SENSITIVE)	HUDSON	JERSEY CITY CITY	10 CLAREMONT AVE.	CHOI, JOHN & KIM, MINA	10 CLAREMONT AVENUE	JERSEY CITY, NJ 07305
22704	15	2 - RESIDENTIAL (SENSITIVE)	HUDSON	JERSEY CITY CITY	12 CLAREMONT AVE.	12 CLAREMONT JC, LLC	54 PEAR TREE LANE	FRANKLIN PARK, NJ 08823
22704	3	2 - RESIDENTIAL (SENSITIVE)	HUDSON	JERSEY CITY CITY	121 CARTERET AVE.	MURILLO, TIFFANY	121 CARTERET AVE	JERSEY CITY, NJ 07305
22704	2	2 - RESIDENTIAL (SENSITIVE)	HUDSON	JERSEY CITY CITY	123 CARTERET AVE.	RUSSELL, EILEEN & VALDEZ & KEVIN	123 CARTERET AVENUE	JERSEY CITY, NJ 07305
22704	41	2 - RESIDENTIAL (SENSITIVE)	HUDSON	JERSEY CITY CITY	138 RANDOLPH AVE.	GLASTER, MICHAEL	319 DEKALB AVE	WOODBRIDGE, NJ 07095
22704	40	2 - RESIDENTIAL (SENSITIVE)	HUDSON	JERSEY CITY CITY	136 RANDOLPH AVE.	ATAKENT, AYDIN & ESER	987 E. GLEN AVE	RIDGEWOOD, NJ 07450
22704	39	2 - RESIDENTIAL (SENSITIVE)	HUDSON	JERSEY CITY CITY	134 RANDOLPH AVE.	134 RANDOLPH, LLC	783 AVENUE C	BAYONNE, NJ 07002
22704	4	2 - RESIDENTIAL (SENSITIVE)	HUDSON	JERSEY CITY CITY	119 CARTERET AVE.	TEAGUE, GARTHELIA A.	119 CARTERET AVE.	JERSEY CITY, N.J. 07305
22704	5	2 - RESIDENTIAL (SENSITIVE)	HUDSON	JERSEY CITY CITY	117 CARTERET AVE.	BRUN, DONALD	117 CARTERET AVE.	JERSEY CITY, N.J. 07305
22704	6	2 - RESIDENTIAL (SENSITIVE)	HUDSON	JERSEY CITY CITY	115 CARTERET AVE.	SEIGLER, KAITLYN	115 CARTERET AVE.	JERSEY CITY, NJ 07305
22704	21	2 - RESIDENTIAL (SENSITIVE)	HUDSON	JERSEY CITY CITY	98 RANDOLPH AVE.	DAVIS, LISA A.	98 RANDOLPH AVE.	JERSEY CITY, NJ 07305
22704	13	2 - RESIDENTIAL (SENSITIVE)	HUDSON	JERSEY CITY CITY	8 CLAREMONT AVE.	ACJO USA, LLC	49-59 HUNTER ST.	NEWARK, NJ 07114
22704	12	2 - RESIDENTIAL (SENSITIVE)	HUDSON	JERSEY CITY CITY	6 CLAREMONT AVE.	BUNBURY, SOPHI	6 CLAREMONT AVE.	JERSEY CITY, NJ 07305
22704	11	2 - RESIDENTIAL (SENSITIVE)	HUDSON	JERSEY CITY CITY	4 CLAREMONT AVE.	VELEZ, DAVID	4 CLAREMONT AE.	JERSEY CITY, N.J. 07305
22704	38	2 - RESIDENTIAL (SENSITIVE)	HUDSON	JERSEY CITY CITY	132 RANDOLPH AVE.	LUYANDO, BEMGIL	132 RANDOLPH AVE.	JERSEY CITY, NJ 07305
22704	37	2 - RESIDENTIAL (SENSITIVE)	HUDSON	JERSEY CITY CITY	130 RANDOLPH AVE.	BERNALES, NAMNAMA & PERKINS, ALEX	130 RANDOLPH AVE.	JERSEY CITY, NJ 07305
22704	36	2 - RESIDENTIAL (SENSITIVE)	HUDSON	JERSEY CITY CITY	128 RANDOLPH AVE.	VERGARA, LUIS E. & DIANE VALENCIA	47 GALLINSON DRIVE	NEW PROVIDENCE, NJ 07974
22704	33	2 - RESIDENTIAL (SENSITIVE)	HUDSON	JERSEY CITY CITY	120 RANDOLPH AVE.	LITTLE, ORALEE J	120 RANDOLPH AVE.	JERSEY CITY, N.J. 07305
22704	22	2 - RESIDENTIAL (SENSITIVE)	HUDSON	JERSEY CITY CITY	98.5 RANDOLPH AVE.	RODRIGUEZ, ROBINSON	98A RANDOLPH AVE.	JERSEY CITY, N.J. 07305
22704	23	2 - RESIDENTIAL (SENSITIVE)	HUDSON	JERSEY CITY CITY	100 RANDOLPH AVE.	O'MARDE, HEIDI	100 RANDOLPH AVE.	JERSEY CITY, N.J. 07305
22704	24	2 - RESIDENTIAL (SENSITIVE)	HUDSON	JERSEY CITY CITY	102 RANDOLPH AVE.	DIONISIO, MICHAEL	102 RANDOLPH AVENUE	JERSEY CITY, NJ 07305
22704	25	2 - RESIDENTIAL (SENSITIVE)	HUDSON	JERSEY CITY CITY	104 RANDOLPH AVE.	ABI, LLC	259 NEWKIRK AVE	BROOKLYN, NY 11230
22704	26	2 - RESIDENTIAL (SENSITIVE)	HUDSON	JERSEY CITY CITY	106 RANDOLPH AVE.	GANNON, DANA	106 RANDOLPH AVE.	JERSEY CITY, NJ 07305
22704	27	2 - RESIDENTIAL (SENSITIVE)	HUDSON	JERSEY CITY CITY	108 RANDOLPH AVE.	ROLLINS, LORRAINE A.	108 RANDOLPH AVE.	JERSEY CITY, NJ 07305

Attachment A.1
Properties Within 200 Feet of Project Area
PPG, Jersey City, New Jersey

BLOCK	LOT	PROPERTY CLASS	COUNTY	MUNICIPALITY	PROPERTY STREET ADDRESS	OWNER NAME	OWNER STREET ADDRESS	CITY, STATE, ZIP CODE
22704	28	2 - RESIDENTIAL (SENSITIVE)	HUDSON	JERSEY CITY CITY	110 RANDOLPH AVE.	110 RANDOLPH AVENUE, LLC	18 PHILLIP DR.	PARSIPPANY-TROY HILLS, NJ 07054
22704	29	2 - RESIDENTIAL (SENSITIVE)	HUDSON	JERSEY CITY CITY	112 RANDOLPH AVE.	WEATHERS, THIMOTHY	112 RANDOLPH AVE.	JERSEY CITY, N.J. 07305
22704	30	2 - RESIDENTIAL (SENSITIVE)	HUDSON	JERSEY CITY CITY	114 RANDOLPH AVE.	SMITH,ARNOLD & REGINA & PEOPLES,MAE	114 RANDOLPH AVE.	JERSEY CITY, NJ 07305
22704	31	2 - RESIDENTIAL (SENSITIVE)	HUDSON	JERSEY CITY CITY	116 RANDOLPH AVE.	RANDOLPH ESTATES, LLC	1274 49TH ST., #STE546	BROOKLYN, NY 11219
22704	32	2 - RESIDENTIAL (SENSITIVE)	HUDSON	JERSEY CITY CITY	118 RANDOLPH AVE.	118 RANDOLPH, LLC	4 FISHER COURT	SPRING VALLEY, NY 10977
23304	12	2 - RESIDENTIAL (SENSITIVE)	HUDSON	JERSEY CITY CITY	1 CLAREMONT AVE.	JACOB KING, LLC	199 LEE AVE., SUITE 571	BROOKLYN, NY 11211
23304	7	2 - RESIDENTIAL (SENSITIVE)	HUDSON	JERSEY CITY CITY	15 CLAREMONT AVE.	KELLER, ROBBIN	15 CLAREMONT AVE.	JERSEY CITY, N.J. 07305
23304	8	2 - RESIDENTIAL (SENSITIVE)	HUDSON	JERSEY CITY CITY	11 CLAREMONT AVE.	GG MEDINA	11 CLAREMONT AVE.	JERSEY CITY, NJ 07305
23304	9	2 - RESIDENTIAL (SENSITIVE)	HUDSON	JERSEY CITY CITY	9 CLAREMONT AVE.	RAY, THERESA	9 CLAREMONT AVE.	JERSEY CITY, NJ 07304
23304	10	2 - RESIDENTIAL (SENSITIVE)	HUDSON	JERSEY CITY CITY	5 CLAREMONT AVE.	YELDELL, DION	7 JUNEGRASS WAY	HACKETTSTOWN, NJ 07840
23304	11	2 - RESIDENTIAL (SENSITIVE)	HUDSON	JERSEY CITY CITY	3 CLAREMONT AVE.	CLAREMONT BH LLC	51 FOREST RD #316-286	MONROE, NY 10950
21404	24	4C - APARTMENT (SENSITIVE)	HUDSON	JERSEY CITY CITY	176 RANDOLPH AVE.	GAME HOLDINGS, LLC	P.O.BOX 38	POMONA, N.Y. 10970
22704	35	4C - APARTMENT (SENSITIVE)	HUDSON	JERSEY CITY CITY	126 RANDOLPH AVE.	126 RANDOLPH HOLDINGS, LLC.	P.O. BOX 630246	MIAMI, FL. 33163
22704	34	4C - APARTMENT (SENSITIVE)	HUDSON	JERSEY CITY CITY	122 RANDOLPH AVE.	122 RANDOLPH AVE. REALTY, LLC.	P.O. BOX 796	MONROE, NY 10949
OTHER PROPERTIES WITHIN 200 FEET								
19901	41	1 - VACANT	HUDSON	JERSEY CITY CITY	99 VAN HORNE ST.	99 VAN HORN, LLC	181 WATER ST., #1914	NEW YORK, NY 10038
19902	10	1 - VACANT	HUDSON	JERSEY CITY CITY	108 VAN HORNE ST.	RODRIQUEZ, MIRIAM	106 VAN HORNE ST.	JERSEY CITY, N.J. 07304
19903	9	1 - VACANT	HUDSON	JERSEY CITY CITY	189 PACIFIC AVE.	LEONARD PARNESS TRUCKING CORP.	181 PACIFIC AVE.	JERSEY CITY NJ 07304
21503	24	1 - VACANT	HUDSON	JERSEY CITY CITY	CENTRAL R R INS	EDEN WOOD REALTY, LLC	1 CROSSROADS DR., STE 303	BEDMINSTER, NJ 07921
21510	1	1 - VACANT	HUDSON	JERSEY CITY CITY	846 GARFIELD AVE.	PPG INDUSTRIES, INC.%TAX ADMIN.DEPT	ONE PPG PLACE	PITTSBURGH, PA 15272
21502	12	1 - VACANT	HUDSON	JERSEY CITY CITY	78 HALLADAY ST.	PPG INDUSTRIES, INC.	ONE PPG PLACE	PITTSBURGH, PA 15272
21509	2	1 - VACANT	HUDSON	JERSEY CITY CITY	51-99 PACIFIC AVENUE	PPG INDUSTRIES, INC.	ONE PPG PLACE	PITTSBURGH, PA 15272
21509	1	1 - VACANT	HUDSON	JERSEY CITY CITY	22 HALLADAY ST.	PPG INDUSTRIES, INC.	ONE PPG PLACE	PITTSBURGH, PA 15272
21502	17	1 - VACANT	HUDSON	JERSEY CITY CITY	104 HALLADAY ST.	PPG INDUSTRIES, INC.	ONE PPG PLACE	PITTSBURGH, PA 15272
21503	19	1 - VACANT	HUDSON	JERSEY CITY CITY	34 CAVEN POINT AVE.	CAVEN POINT PARTNERS LLC	418 WEST SIDE AVE.	JERSEY CITY, N.J. 07305
21501	20.01	1 - VACANT	HUDSON	JERSEY CITY CITY	900 GARFIELD AVE	GARFIELD PHASE 1B URBAN RENEWAL,LLC	120 ALBANY ST., STE.#800	NEW BRUNSWICK, NJ 08901
21510	39	1 - VACANT	HUDSON	JERSEY CITY CITY	800 GARFIELD AVE.	PPG INDUSTRIES INC.	ONE PPG PLACE	PITTSBURG, PA 15272
21509	3	1 - VACANT	HUDSON	JERSEY CITY CITY	33 PACIFIC AVE.	GND PACIFIC HOLDINGS, LLC.	17 FOUR COLUMNS DR.	MORGANVILLE, NJ 07751
21503	23	1 - VACANT	HUDSON	JERSEY CITY CITY	33-47 CARTERET AVE.	EDEN WOOD REALTY, LLC	1 CROSSROADS DR., STE 303	BEDMINSTER, NJ 07921
21502	13	1 - VACANT	HUDSON	JERSEY CITY CITY	94 HALLADAY ST.	PPG INDUSTRIES, INC.	ONE PPG PLACE	PITTSBURGH, PA 15272
21502	14	1 - VACANT	HUDSON	JERSEY CITY CITY	98 HALLADAY ST.	PPG INDUSTRIES, INC.	ONE PPG PLACE	PITTSBURGH, PA 15272
21502	15	1 - VACANT	HUDSON	JERSEY CITY CITY	100 HALLADAY ST.	PPG INDUSTRIES, INC.	ONE PPG PLACE	PITTSBURGH, PA 15272
21502	16	1 - VACANT	HUDSON	JERSEY CITY CITY	102 HALLADAY ST.	PPG INDUSTRIES, INC.	ONE PPG PLACE	PITTSBURGH, PA 15272
21510	5	1 - VACANT	HUDSON	JERSEY CITY CITY	15 HALLADAY ST.	PPG INDUSTRIES, INC.%TAX ADMIN.DEPT	ONE PPG PLACE	PITTSBURGH, PA 15272
21510	3	1 - VACANT	HUDSON	JERSEY CITY CITY	45 HALLADAY ST.	PPG INDUSTRIES, INC.%TAX ADMIN.DEPT	ONE PPG PLACE	PITTSBURGH, PA 15272
21510	4	1 - VACANT	HUDSON	JERSEY CITY CITY	25 HALLADAY ST.	PPG INDUSTRIES, INC.%TAX ADMIN.DEPT	ONE PPG PLACE	PITTSBURGH, PA 15272
21510	11	1 - VACANT	HUDSON	JERSEY CITY CITY	816 GARFIELD AVE.	PPG INDUSTRIES, INC.%TAX ADMIN.DEPT	ONE PPG PLACE	PITTSBURGH, PA 15272
18901	1.01	15C - EXEMPT PUBLIC	HUDSON	JERSEY CITY CITY	1 BERRY ROAD	CITY OF JERSEY CITY	280 GROVE ST	JERSEY CITY, NJ 07302
19903	10	15C - EXEMPT PUBLIC	HUDSON	JERSEY CITY CITY	172 HALLADAY ST.	JERSEY CITY SEWERAGE AUTHORITY	575 STATE HIGHWAY 440	JERSEY CITY, N.J. 07305
19903	1	15C - EXEMPT PUBLIC	HUDSON	JERSEY CITY CITY	136 HALLADAY ST.	JERSEY CITY REDEVELOPMENT AGENCY	39 KEARNEY AVE.	JERSEY CITY, NJ 07302
19903	5	15C - EXEMPT PUBLIC	HUDSON	JERSEY CITY CITY	144 HALLADAY ST.	JERSEY CITY REDEVELOPMENT AGENCY	39 KEARNEY AVE.	JERSEY CITY NJ 07305
21404	1	15C - EXEMPT PUBLIC	HUDSON	JERSEY CITY CITY	207 RANDOLPH AVE.	JERSEY CITY SEWERAGE AUTHORITY	555 ROUTE 440	JERSEY CITY, NJ 07305
21404	2	15C - EXEMPT PUBLIC	HUDSON	JERSEY CITY CITY	923 GARFIELD AVE.	NEW JERSEY TRANSIT	ONE PENN PLAZA EAST	NEWARK, NJ 07105

Attachment A.1
Properties Within 200 Feet of Project Area
PPG, Jersey City, New Jersey

BLOCK	LOT	PROPERTY CLASS	COUNTY	MUNICIPALITY	PROPERTY STREET ADDRESS	OWNER NAME	OWNER STREET ADDRESS	CITY, STATE, ZIP CODE
21501	18.01	15C - EXEMPT PUBLIC	HUDSON	JERSEY CITY CITY	880 GARFIELD AVE.	JERSEY CITY REDEVELOPMENT AGENCY	39 KARNEY AVE.	JERSEY CITY, NJ 07305
21501	1.01	15C - EXEMPT PUBLIC	HUDSON	JERSEY CITY CITY	163 HALLADAY STREET	JERSEY CITY SEWERAGE AUTHORITY	575 STATE HIGHWAY 440	JERSEY CITY, N.J. 07305
21501	16	15C - EXEMPT PUBLIC	HUDSON	JERSEY CITY CITY	2 DAKOTA ST.	JERSEY CITY REDEVELOPMENT AGENCY	39 KEARNEY AVE.	JERSEY CITY, NJ 07305
21501	17	15C - EXEMPT PUBLIC	HUDSON	JERSEY CITY CITY	70 CARTERET AVE.	JERSEY CITY REDEVELOPMENT AGENCY	39 KEARNEY AVE.	JERSEY CITY, NJ 07305
21501	19.01	15C - EXEMPT PUBLIC	HUDSON	JERSEY CITY CITY	884 GARFIELD AVE.	JERSEY CITY REDEVELOPMENT AGENCY	39 KEARNEY AVE.	JERSEY CITY, NJ 07305
21510	2	15C - EXEMPT PUBLIC	HUDSON	JERSEY CITY CITY	824 GARFIELD AVE.	JERSEY CITY REDEVELOPMENT AGENCY	39 KEARNEY AVE.	JERSEY CITY, NJ 07305
24301	1.02	15C - EXEMPT PUBLIC	HUDSON	JERSEY CITY CITY	CAVEN POINT AVE	JESEY CITY REDEVELOPMENT AVE	39 KEARNY AVE	JERSEY CITY, NJ 07305
19802	1	15D - EXEMPT CHARITABLE	HUDSON	JERSEY CITY CITY	935 GARFIELD AVE.	METROPOLITAN FAMILY HEALTH NETWORK	935 GARFIELD AVE.	JERSEY CITY, NJ 07304
21503	22	15D - EXEMPT CHARITABLE	HUDSON	JERSEY CITY CITY	74 PACIFIC AVE	SPECTRUM HEALTH CARE INC.	74 PACIFIC AVENUE	JERSEY CITY, NJ 07304
19902	36	15F - EXEMPT (OTHER)	HUDSON	JERSEY CITY CITY	173 HALLADAY ST.	173 HALLADAY ST.CONDOMINIUM ASSOC.	173 HALLADAY ST.	JERSEY CITY, NJ 07304
21404	26	15F - EXEMPT (OTHER)	HUDSON	JERSEY CITY CITY	182 RANDOLPH AVE.	182 RANDOLPH AVE.CONDOMINIUM ASSOC.	182 RANDOLPH AVE.	JERSEY CITY, NJ 07305
19802	2	4A - COMMERCIAL	HUDSON	JERSEY CITY CITY	947 GARFIELD AVE.	947 GARFIELD AVE. LLC.	14 CASALE DRIVE	WARREN, NJ 07059
19902	1	4A - COMMERCIAL	HUDSON	JERSEY CITY CITY	90 VAN HORNE ST.	90 VAN HORNE STREET	206 RAILROAD STREET	BAYPORT, NY 11705
19903	11	4A - COMMERCIAL	HUDSON	JERSEY CITY CITY	176 HALLADAY STREET	PACIFIC LUXURY CONDOMINIUMS, LLC	176 HALLADAY ST.	JERSEY CITY, NJ 07304
19903	4	4A - COMMERCIAL	HUDSON	JERSEY CITY CITY	142 HALLADAY ST.	LEONARD PARNESS TRUCKING CORP.	181 PACIFIC AVE.	JERSEY CITY, NJ 07304
21404	6	4A - COMMERCIAL	HUDSON	JERSEY CITY CITY	851 GARFIELD AVE.	851 GARFIELD AVENUE, LLC	54 EDGEWATER RD.	CLIFFSIDE, NJ 07010
21404	5	4A - COMMERCIAL	HUDSON	JERSEY CITY CITY	859 GARFIELD AVE.	FRENCHPARK WAREHOUSE CO.	P.O. BOX 280	KENILWORTH, NJ 07033
21510	7	4A - COMMERCIAL	HUDSON	JERSEY CITY CITY	784 GARFIELD AVE.	SEVEN EIGHTY-FOUR, LLC.	511 AVENUE C	BAYONNE, NJ 07002
21502	2	4A - COMMERCIAL	HUDSON	JERSEY CITY CITY	163 PACIFIC AVE.	163 PACIFIC AVE, LLC	163 PACIFIC AVE.	JERSEY CITY, NJ 07304
21502	3	4A - COMMERCIAL	HUDSON	JERSEY CITY CITY	161 PACIFIC AVE.	PACIFIC KATER LLC	210 FAIRMOUNT AVENUE	JERSEY CITY, N.J. 07306
21502	4	4A - COMMERCIAL	HUDSON	JERSEY CITY CITY	159 PACIFIC AVE.	PACIFIC KATER LLC	210 FAIRMOUNT AVENUE	JERSEY CITY, N.J. 07306
21502	5	4A - COMMERCIAL	HUDSON	JERSEY CITY CITY	157 PACIFIC AVE.	PACIFIC KATER LLC	210 FAIRMOUNT AVENUE	JERSEY CITY, NJ 07306
21502	6	4A - COMMERCIAL	HUDSON	JERSEY CITY CITY	149 PACIFIC AVE.	METRICK, STUART & MICHELLE	149 PACIFIC AVE.	JERSEY CITY, NJ 07304
21502	9	4A - COMMERCIAL	HUDSON	JERSEY CITY CITY	131 PACIFIC AVE.	107-123 & 127 PACIFIC AVE ASSO,LLC.	151 NORTH MAIN ST., #400	NEW CITY, NY 10956
21502	10	4A - COMMERCIAL	HUDSON	JERSEY CITY CITY	107 PACIFIC AVE.	107-123 & 127 PACIFIC AVE.ASSOC,LLC	14400 METCALF AVE.	OVERLAND PARK, KS 66223
21502	19	4A - COMMERCIAL	HUDSON	JERSEY CITY CITY	118-126 HALLADAY ST.	HALLADAY MMO CAPITAL, LLC	7 GLENWOOD AVE., #STE418	EAST ORANGE, NJ 07017
21501	13	4A - COMMERCIAL	HUDSON	JERSEY CITY CITY	INSIDE HALLADAY ST.	151 HALLADAY STREET, LLC	181 PACIFIC ST.	JERSEY CITY, NJ 07304
21503	21	4A - COMMERCIAL	HUDSON	JERSEY CITY CITY	24-46 PACIFIC AVE.	ANTONUCCI, ALAN & CHRISTOPHER	P.O. BOX 6466AVE.	JERSEY CITY, N.J. 07306
21503	20	4A - COMMERCIAL	HUDSON	JERSEY CITY CITY	2-22 PACIFIC AVE.	ANTONUCCI,ALAN	P.O. BOX 6466	JERSEY CITY, N J 07306
21501	11	4A - COMMERCIAL	HUDSON	JERSEY CITY CITY	84 FORREST ST.	HALLADAY FOREST LLC.	186 OCEAN AVE.	JERSEY CITY, NJ 07305
22704	7.01	4A - COMMERCIAL	HUDSON	JERSEY CITY CITY	829 GARFIELD AVE.	829 GARFIELD HOLDINGS, LP	101 BROADWAY SUITE 501	BROOKLYN, NY 11249
23305	1	4A - COMMERCIAL	HUDSON	JERSEY CITY CITY	770 GARFIELD AVE.	T & C INVESTMENTS, L.L.C.	770 GARFIELD AVE.	JERSEY CITY, N.J. 07305
23305	2	4A - COMMERCIAL	HUDSON	JERSEY CITY CITY	758 GARFIELD AVE.	T AND C INVESTMENTS, LLC.	758 GARFIELD AVE.	JERSEY CITY, N. J. 07305
23304	13	4A - COMMERCIAL	HUDSON	JERSEY CITY CITY	783 GARFIELD AVE	ATLANTIC TIDES, LLC.	1459 GARRETT DRIVE	WALL, NJ 07719
24301	4	4A - COMMERCIAL	HUDSON	JERSEY CITY CITY	21 CAVEN POINT AVE.	21 CAVEN POINT AVENUE, LLC	28-18 STEINWAY STREET	ASTORIA, NY 11103
24301	3	4A - COMMERCIAL	HUDSON	JERSEY CITY CITY	CAVEN POINT AVE.	RELIABLE RALTY, LLC	ONE CAVEN POINT AVE.	JERSEY CITY, NJ 07305
19903	8	4B - INDUSTRIAL	HUDSON	JERSEY CITY CITY	181 PACIFIC AVE.	LEONARD PARNESS TRUCKING CORP	181 PACIFIC AVE	JERSEY CITY NJ 07304
21404	3	4B - INDUSTRIAL	HUDSON	JERSEY CITY CITY	855 GARFIELD AVE.	FRENCHPARK WAREHOUSE CO.	P.O BOX 280	KENILWORTH, NJ 07033
21404	4	4B - INDUSTRIAL	HUDSON	JERSEY CITY CITY	861 GARFIELD AVE.	FRENCHPARK WAREHOUSE CO.	P.O. BOX 280	KENILWORTH, NJ 07033
21503	27	4B - INDUSTRIAL	HUDSON	JERSEY CITY CITY	150 PACIFIC AVE.	150 PACIFIC AVE. PROPERTIES LLC.	1 CROSSROADS DR., STE 303	BEDMINSTER, NJ 07921
21501	10	4B - INDUSTRIAL	HUDSON	JERSEY CITY CITY	78 FORREST ST.	HALLADAY FOREST LLC	186 OCEAN AVENUE	JERSEY CITY, NJ 07305
21502	8	4B - INDUSTRIAL	HUDSON	JERSEY CITY CITY	133 PACIFIC AVE.	NINE LAWTON ST., INC.	1058 JASSAMINE WAY	FORT LEE , NEW JERSEY 07024
21502	11	4B - INDUSTRIAL	HUDSON	JERSEY CITY CITY	105-101 PACIFIC AVE.	ONE0ONE PACIFIC AVE, LLC	24 ANNETT AVENUE	EDGEWATER, NJ 07020

Attachment A.1
Properties Within 200 Feet of Project Area
PPG, Jersey City, New Jersey

BLOCK	LOT	PROPERTY CLASS	COUNTY	MUNICIPALITY	PROPERTY STREET ADDRESS	OWNER NAME	OWNER STREET ADDRESS	CITY, STATE, ZIP CODE
21502	1	4B - INDUSTRIAL	HUDSON	JERSEY CITY CITY	77 FORREST ST.	77 FORREST ST, LLC	682 GARFIELD AVE.	JERSEY CITY, NJ 07305
21502	18	4B - INDUSTRIAL	HUDSON	JERSEY CITY CITY	106-116 HALLADAY ST.	HALLADAY MMO CAPITAL, LLC	7 GLENWOOD AVE., #STE418	EAST ORANGE, NJ 07017
21501	14.01	4B - INDUSTRIAL	HUDSON	JERSEY CITY CITY	100 FORREST ST.	HALLADAY FOREST LLC.	186 OCEAN AVE.	JERSEY CITY, NJ 07305
21501	4	4B - INDUSTRIAL	HUDSON	JERSEY CITY CITY	151 HALLADAY ST.	E 27 ST, LLC	181 PACIFIC AVE.	JERSEY CITY, N.J. 07304
21501	12	4B - INDUSTRIAL	HUDSON	JERSEY CITY CITY	86 FORREST ST.	HALLADAY FOREST LLC.	186 OCEAN AVE.	JERSEY CITY, NJ 07305
21510	10	4B - INDUSTRIAL	HUDSON	JERSEY CITY CITY	802 GARFIELD AVE.	GARFIELD 802, LLC	682 GARFIELD AVENUE	JERSEY CITY, NJ 07305
24301	2	4B - INDUSTRIAL	HUDSON	JERSEY CITY CITY	55 CAVEN POINT AVE.	55 CAVEN POINT LLC.	55 CAVEN POINT AVE.	JERSEY CITY, NJ 07305
19901	3	Not Found	Not Found	Not Found	Not Found	Not Found	Not Found	Not Found
19901	2	Not Found	Not Found	Not Found	Not Found	Not Found	Not Found	Not Found
19901	7	Not Found	Not Found	Not Found	Not Found	Not Found	Not Found	Not Found
19901	4	Not Found	Not Found	Not Found	Not Found	Not Found	Not Found	Not Found
19901	5	Not Found	Not Found	Not Found	Not Found	Not Found	Not Found	Not Found
19901	42	Not Found	Not Found	Not Found	Not Found	Not Found	Not Found	Not Found
19901	43	Not Found	Not Found	Not Found	Not Found	Not Found	Not Found	Not Found
19901	44	Not Found	Not Found	Not Found	Not Found	Not Found	Not Found	Not Found
19901	6	Not Found	Not Found	Not Found	Not Found	Not Found	Not Found	Not Found
24301	1.01	Not Found	Not Found	Not Found	Not Found	Not Found	Not Found	Not Found

Notes:

1. Block and lot information was sourced from the NJ Office of GIS, last updated December 4, 2024. URL: https://geoapps.nj.gov/njgin/parcel/parcels_shp_dbf_Hudson.zip (Accessed September 30 2025).
2. Owner information sourced from: https://tax1.co.monmouth.nj.us/cgi-bin/prc6.cgi?&ms_user=monm&passwd=&srch_type=0&adv=0&out_type=0&district=0906
NJ - New Jersey

Notes:
1. New Jersey State Plane North American Datum 1983 Coordinates, U.S. Survey Feet.
2. Parcel and land use data obtained from the NJ Office of GIS, last updated December 4, 2024.
URL: https://geoapps.nj.gov/njgin/parcel/parcels_shp_dbf_Hudson.zip (Accessed September 30, 2025).

Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

LEGEND

- GROUNDWATER AREA OF INTEREST
- RAILROAD
- 200-FOOT BUFFER

SURROUNDING LAND USE (WITHIN 200 FEET)

- UNKNOWN
- 1 - VACANT
- 2 - RESIDENTIAL (SENSITIVE)
- 4A - COMMERCIAL
- 4B - INDUSTRIAL
- 4C - APARTMENT (SENSITIVE)
- 15C - EXEMPT, PUBLIC
- 15D - EXEMPT, CHARITABLE
- 15F - EXEMPT, OTHER

N W E S

0 125 250 500 Feet

AECOM

PPG
GARFIELD AVENUE GROUP SITES
JERSEY CITY, NEW JERSEY

DATE: 10/02/2025 | DRWN: IL | CHECKED BY: RS

FIGURE A.1
LAND USE WITHIN 200 FEET

File: C:\Users\Lazarl\AECOM\GDS GIS Services - DCS AMERICAS\WESTERN REGION\PPG\Garfield Ave\Receptor Evaluation Maps\DATABASE\MXD\Figure 1 Land Use.mxd (J = \\Uswtf1fp001\jobs\)

Table B.1
Well Search
PPG, Jersey City, New Jersey

SITE NAME	Hudson County Chromate Sites 114, 132, 133, 135, 137, 143, Al Smith Moving & Storage, Forrest Street Properties, Halsted, Fishbein, Ten West Apparel, Roadways, Site 199
SITE STREET ADDRESS	2 Dakota St.; 70 Carteret Ave; 880, 884, 900 Garfield Ave; 824 Garfield Ave; 15 and 22 Halladay St; 51-99 Pacific Ave; 25 and 45 Halladay St; 846 Garfield Ave; 33 Pacific Ave; 84, 86, 90, 98, 100 Forrest St; 78, 94, 98, 100, 102, 104 Halladay St; 816 Garfield Ave; 800 Garfield Ave
SITE COUNTY (select)	Hudson
SITE MUNICIPALITY (select)	Jersey City
PROGRAM INTEREST (PI) ID # :	G000005480, G000008749, 629345, 025695, 246332, G000008753, G000008759, 775998, 775706, 722429, 629388, 777089, G000044581
SOURCE COORDINATE X	611210
SOURCE COORDINATE Y	683224
GROUNDWATER FLOW DIRECTION USED (if any)	--
WERE APPLICABLE WELL TYPES FOUND? (Yes/No)	Yes
IS THIS SUBMISSION AN UPDATE? (Yes/No)	Yes
AUTHOR (name of company)	AECOM
AUTHOR STREET ADDRESS (include town and zip code)	30 Knightsbridge Road, Piscataway, NJ 08854
LSRP LICENSE NUMBER OVERSEEING WORK	N/A - Direct Oversight
LSRP NAME OVERSEEING WORK	N/A - Direct Oversight
PROFESSIONAL WHO PREPARED SUBMISSION	Jonna Rosenthal
EMAIL CONTACT	jonna.rosenthal@aecom.com
PHONE CONTACT	207-835-9715

Table B.1
Well Search
PPG, Jersey City, New Jersey

Permit Number	Well Use	Potentially Potable	Document	Date (permitted /drilled /sealed)	Physical Address	County	Municipality	Block	Lot	Location Method	Easting (X)	Northing (Y)	Distance (Feet)	Depth (ft)	Capacity (gal/min)
2600001335	Industrial	Yes	Record	4/18/1956	GRAND STREET	Hudson	Jersey City	--	--	Prop Loc - Dig Image	614920	686324	4,834.37	335	0
2600004392	Industrial	Yes	Record	4/27/1971	MORRISPESIN	Hudson	Jersey City	--	--	Prop Loc - Hard Copy	613468	678828	--	180	0
2600004995	Industrial	Yes	Permit	2/24/1981		Hudson	Jersey City	1880	12B	Prop Loc - Hard Copy	607255	689626	--	400	50
2600012777	Domestic	Yes	Record	4/25/1988	FOOT OF CHAPEL AVENUE	Hudson	Jersey City	1500	7	Prop Loc - Hard Copy	606312	677478	--	22	--
2600043694	Industrial	Yes	Record	10/15/1996	37 MALLORY AVE.	Hudson	Jersey City	1296.5	1.8	Prop Loc - Hard Copy	606261	688306	--	205	40
2600049931	Industrial	Yes	Permit	2/3/1998	758 GARFIELD AVE.	Hudson	Jersey City	1487	11A,11B	Prop Loc - Hard Copy	610374	681545	--	300	65
2600056260	Industrial	Yes	Record	5/4/2000	757 OCEAN AVE.	Hudson	Jersey City	19.74	27	Prop Loc - Hard Copy	609277	685588	--	855	--
A1805041	Industrial	Yes	Decommissioning	9/24/2019	80 Water Street	Hudson	Jersey City	21701	1	GPS	604777	686537	7,235.98	--	--
E201503280	Industrial	Yes	Record	5/13/2015	Martin Luther King Jr. Drive	Hudson	Jersey City	21201	17	GPS	609575	684261	1,936.13	450	40
E201605261	Irrigation	Yes	Record	6/3/2016	100 Caven Point Road	Hudson	Jersey City	27401	16	GPS	609444	678650	4,903.08	300	--
E202010565	Non-Public	Yes	Record	11/4/2020	176 Wegman Pkwy	Hudson	Jersey City	24002	93	GPS	607562	682330	3,755.95	420	--
E202112643	Industrial	Yes	Permit	12/23/2021	386 Martin Luther King Drive	Hudson	Jersey City	21201	17.01	Digital Image	609586	684247	1,919.35	600	65

2600004995
2600043694
A1805041
2600001335
2600056260
E201503280
E202112643
E202010565
2600049931
2600004392
E201605261
2600012777

1. New Jersey (NJ) State Plane North American Datum 1983 Coordinates (NAD83), U.S. Survey Feet.
2. NJ aerial imagery sourced from: Maxar 03-03-2024
3. Well search completed on September 30, 2025, using the NJDEP SRP Data Miner XY Well Search Tool.
4. Wells are labeled with their well permit numbers.

CEA = Classification Exception Area
NJDEP = New Jersey Department of Environmental Protection
SRP = Site Remediation Program
WRA = Well Restriction Area

Jersey City, NJ

LEGEND

- GROUNDWATER AREA OF INTEREST
- PROJECT AREA CEA/WRA 100000008
- HALF MILE BUFFER
- 1 MILE BUFFER
- RAILROAD

WELLS WITHIN ONE MILE

- DOMESTIC
- INDUSTRIAL
- IRRIGATION
- NON-PUBLIC

N
W E
S

0 750 1,500 3,000 Feet

AECOM

PPG
GARFIELD AVENUE GROUP SITES
JERSEY CITY, NEW JERSEY

DATE: 10/02/2025 | DRWN: IL | CHECKED BY: RS

FIGURE B.1
WELL SEARCH RESULTS
SEPTEMBER 30, 2025

File: C:\Users\Lazar\AECOM\GDS GIS Services - DCS AMERICAS\WESTERN REGION\PPG\Garfield Ave\Receptor Evaluation Maps\DATABASE\MXD\Figure 2 Well Search.mxd (J = \\Uswtf1fp001\jobs\)

AECOM

Prepared for:
PPG
Jersey City, NJ

Prepared by:
AECOM
Piscataway, NJ
60723693
December 2025

Addendum to Groundwater Remedial Investigation Report for Bedrock Water-Bearing Zone

PPG Garfield Avenue Group
Hudson County Chromium Sites
Jersey City, New Jersey

GW-105

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List of Acronyms

bgs	below ground surface
°C	degree(s) Celsius
CCPW	chromate chemical production waste
CEA	Classification Exception Area
CID	Case Inventory Document
COCs	contaminants of concern
COPR	Chromite Ore Processing Residue
Cr	total chromium
Cr(III)	trivalent chromium
Cr(VI)	hexavalent chromium
CSM	Conceptual Site Model
EDD	electronic data deliverable
ft/sec	feet per second
FLUTe	Flexible Liner Underground Technologies
FSPM	Field Sampling Procedures Manual
FSP-QAPP	Field Sampling Plan-Quality Assurance Program Plan
ft	foot/feet
GA Group	Garfield Avenue Group
GGM	green-gray mud
gpm	gallon(s) per minute
GWQS	Groundwater Quality Standard(s)
HASP	Health and Safety Plan
HCC	Hudson County Chromate
HPT	Hydraulic Profiling Tool
ICP-AES	inductively coupled plasma atomic emission spectroscopy
ISAB	*In situ* Anaerobic Bioprecipitation
LCS	laboratory control sample
LCSD	laboratory control sample duplicate
µg/L	micrograms per liter
MGP	manufactured gas plant
MS/MSD	Matrix Spike/Matrix Spike Duplicate
N.J.A.C.	New Jersey Administrative Code
NAD83	North American Datum of 1983
NAVD88	North American Vertical Datum of 1988
NJ	New Jersey
NJDEP	New Jersey Department of Environmental Protection
ORP	oxidation-reduction potential
PSEG	Public Service Electric & Gas Company
PVC	polyvinyl chloride
QA	quality assurance
QC	quality control
RA	Remedial Action
RAP	Remedial Action Permit
RAR	Remedial Action Report
RI	Remedial Investigation

RIR	Remedial Investigation Report
RPD	relative percent difference
SOP	standard operating procedure
SVOCs	Semi-volatile organic compounds
TRSR	Technical Requirements for Site Remediation
USEPA	United States Environmental Protection Agency
VAP	vertical aquifer profiling
VOCs	volatile organic compounds
WRA	Well Restriction Area

List of Definitions

Chromate Chemical Production Waste (CCPW): A by-product generated from the production of sodium bichromate, including chromite ore processing residue, green-gray mud, and fill mixed with chromite ore processing residue or green-gray mud.

Chromite Ore Processing Residue (COPR): A specific type of CCPW generally characterized as a reddish brown, coarse to fine, gravel with varying amounts of sand and silt particles. The gravel portion of the matrix is typically defined as nodules from the chromate manufacturing process that range in size from ⅛- to ¾-inch in diameter. However, nodules have been infrequently detected at diameters of over an inch. Different sized nodules may be found cemented together to form larger clusters. The matrix of these clusters may consist of cement-like silt. These nodules can be disintegrated easily with a hammer. Occasionally when detected in the saturated zone, COPR nodules may appear as a fine-grained material that has been weathered. The permeability of this material is variable. The inner matrix of COPR nodules typically contains higher concentrations of hexavalent chromium than the surface of the nodules but lower concentrations than green-gray mud.

Chromium: An element found in nature that is commonly used in manufacturing activities. Chromium may be present in soil or water as trivalent chromium and hexavalent chromium. Trivalent chromium is an essential nutrient at trace concentrations. Hexavalent chromium can be present in many forms, some of which are carcinogenic at high concentrations. Total chromium (Cr), as measured in soil or groundwater, is the sum of trivalent and hexavalent chromium.

Green-Gray Mud (GGM): Generally lime green dense silt, with minor amounts of fine sand and clay. When found in the saturated zone, the grain size of this material may have been affected further due to weathering processes. This can give the material a wet, clayey silt or silty clay appearance with little or no physical or structural integrity. This material has a low permeability. The pH of this material is generally 11 to 12 standard units.

Executive Summary

AECOM, on behalf of PPG, has prepared this addendum to the New Jersey Department of Environmental Protection (NJDEP)-approved *Groundwater Remedial Investigation Report* (RIR) (AECOM, 2022) for the Garfield Avenue Group (GA Group) part of the Hudson County Chromate (HCC) Sites in Jersey City, Hudson County, New Jersey (the Project Area). This addendum presents the results, findings, and conclusions associated with investigations conducted within the bedrock water-bearing zone since the GA Group groundwater RIR was submitted to the NJDEP in 2022.

Bedrock groundwater investigation activities have been conducted in the Project Area since 2006. This addendum presents the additional data collected as part of groundwater Remedial Investigation (RI) field activities conducted from October 2021 to February 2025 for the bedrock water-bearing zone (i.e., data not included in the January 2022 GA Group groundwater RIR) and integrates these data with results from previous bedrock investigations to update the conceptual site model (CSM) for the bedrock water-bearing zone. The CSM presents the shape of the bedrock surface, infers the contact between the diabase and the Lockatong Formation, and characterizes the structural aspects of the bedrock that affect groundwater flow and contaminant fate and transport. In addition, the extent of total chromium (Cr)-impacted groundwater within the bedrock water-bearing zone is delineated and the basis for the delineation is presented in the Report.

Groundwater in the Project Area is found within four hydrostratigraphic units, which include the shallow zone (fill material), intermediate zone (estuarian “meadow mat” deposits underlain by fluvial sand, silt, and clay with lenses of gravel), the deep zone (sand and gravel with lenses of clay or silt underlain by basal glacial till), and bedrock (Lockatong Formation, Stockton Formation, and diabase).

The sources of chromium-related impacts to bedrock groundwater in the Project Area are unconsolidated overburden soils containing Chromate Chemical Production Waste (CCPW)-impacted groundwater. The sources of CCPW-related impacts to groundwater in overburden soils include:

- The former chromite ore processing facility on Site 114;
- The former stockpiles of CCPW, which consisted of:
    - A stockpile of chromite ore processing residue (COPR) extending from the eastern portion of Site 114 southward onto Site 137 (north and south of Carteret Avenue); and
    - A stockpile of green-gray mud (GGM) immediately south of the former processing facility (the Light Toned Pile);
- Fill materials impacted with CCPW; and
- Fill materials used to abandon the former Morris Canal, which included CCPW.

Chromium leached from these source areas infiltrated into the subsurface and migrated downward through the unsaturated zone. Once within the saturated zone, migration occurred primarily along the prevailing direction of groundwater flow, either horizontally or vertically, depending on hydraulic conditions via either advection or diffusion based on soil type. Between 2010 and 2022, PPG completed excavation of Cr-impacted soils and CCPW from the GA Group Sites and roadways.

Flow of Cr-impacted groundwater within bedrock in the Project Area follows the structural elements of the rock. In the weathered bedrock, migration occurs via the interconnected portions of the weathered bedrock. Within competent bedrock, migration occurs along bedding plane partings and

interconnected fractures, cracks, or voids in the rock, primarily along bedding plane fractures and with the prevailing direction of groundwater flow parallel to bedding strike. A secondary migration component occurs along bedding dip; however, down-dip migration along bedding or fractures is limited by decreasing permeability with depth and the presence of the diabase along the western edge of the Project Area. Migration does not occur in the rock matrix due to its low effective porosity.

The only portion of bedrock groundwater that exhibits chromium-related impacts is situated in the southwestern quadrant of Site 114 and northern portions of Site 132 and Site 143, with Cr at concentrations greater than the NJDEP groundwater quality standard (GWQS) of 70 micrograms per liter (µg/L) residing primarily within the Lockatong Formation. Over time, migration of Cr-impacted groundwater through overburden soils resulted in accumulation of impacted groundwater within the deep water-bearing zone and eventual migration into the bedrock in this portion of the Project Area.

In the southwestern quadrant of Site 114, the prevailing directions of groundwater flow within the competent portion of the Lockatong Formation are to the south/southwest along bedding strike and to the west down bedding dip due to the anisotropy in the bedrock. Groundwater flow in the weathered portion of the Lockatong Formation is controlled by the shape of the bedrock valley in the southwestern quadrant of Site 114, with the dominant flow direction within the valley from northwest to southeast. East of the bedrock valley, the direction of groundwater flow in the weathered rock of the Lockatong and Stockton formations is to the east-southeast.

The generally low hydraulic conductivity of the Lockatong Formation and the lack of permeability in the rock matrix limit the migration of Cr-impacted groundwater within the bedrock, with the extent remaining localized despite the amount of time that has passed since the CCPW waste stockpiles were removed (1958) and the chromate ore processing facility was decommissioned (1966). This indicates significant attenuation stemming from the natural processes that affect the fate and transport of Cr in groundwater and plume stability.

The primary objective of the bedrock groundwater RI is to delineate the horizontal and vertical extent of Cr-related impacts to the bedrock water-bearing zone. To achieve this objective, this RIR addendum includes extrapolation in lieu of single point compliance to complete vertical delineation of the Cr plume in the vicinity of select monitoring wells and a variance request from the technical requirement at 7:26E-4.3 (a) (4) to delineate the horizontal extent of Cr in groundwater in the Lockatong Formation downgradient of well 114-MW72D.

The groundwater RI was implemented using a phased approach and was conducted in parallel with ongoing soil and groundwater remediation activities within the Project Area. Based on the findings of the Groundwater RIR (AECOM, 2022), the findings of the bedrock water-bearing zone investigations presented herein, the variance request for horizontal delineation downgradient of 114-MW72D, and as per recent discussions with NJDEP related to the groundwater RI, the groundwater RI is complete as the following conditions have been met:

- there is sufficient information to know the nature and extent of contamination both on site and off site,
- there is sufficient information to know that receptors have not been impacted by the discharge being remediated, and
- collection of additional data or information is not needed to confirm that a Remedial Action (RA) is needed or to evaluate possible RAs.

No further investigation of bedrock groundwater is needed for the purposes of the RI in the Project Area.

1.0 Introduction

AECOM, on behalf of PPG, has prepared this addendum to the New Jersey Department of Environmental Protection (NJDEP)-approved Groundwater Remedial Investigation Report (RIR) (AECOM, 2022) for the Garfield Avenue Group (GA Group) part of the Hudson County Chromate (HCC) Sites in Jersey City, Hudson County, New Jersey. The GA Group Sites include Sites 114, 132, 133, 135, 137, and 143, the Roadways (Carteret Avenue, Forrest Street, Garfield Avenue, Caven Point Avenue, Pacific Avenue, Halladay Street North, and Halladay Street South), and the Off-Site Properties (Al Smith Moving, Halsted Corporation, Fishbein, Forrest Street Properties, and Ten West Apparel). This RIR also includes HCC Site 199, which is not part of the GA Group Sites but is immediately adjacent to the GA Group sites to the north. Hereinafter, these sites, collectively, are referred to as "the Site" or the "Project Area" (**Figure 1-1**).

This RIR Addendum:

- Presents the additional data collected since October 2021 as part of groundwater Remedial Investigation (RI) field activities for the bedrock water-bearing zone in the Project Area (i.e., data not included in the January 2022 GA Group groundwater RIR) and integrates these data with results from previous bedrock investigations to delineate the horizontal and vertical extent of chromium-related[1] impacts to bedrock groundwater within the Project Area;
- Presents a Conceptual Site Model (CSM) for the bedrock water-bearing zone; and
- Provides the conclusion that, based on the data collected, the RI is complete for the bedrock water-bearing zone.
-

1.1 Previous Bedrock Groundwater Investigations

Bedrock groundwater investigation activities have been conducted in the Project Area since 2006. Four bedrock wells (114-MW4D, 114-MW6D, 114-MW7D, and 114-MW16B) were installed during RI activities conducted in 2006 and 2007 and four bedrock wells (114-MW52D, 114-MW57D, 114-MW61D, and 114-MW66D) were installed during RI activities conducted in 2020 and 2021. These well locations are shown on **Figure 1-2**. Historical monitoring activities at these wells included groundwater elevation gauging and collection of samples for analysis of chromate chemical production waste (CCPW) metals (antimony, chromium, nickel, thallium, vanadium) and hexavalent chromium (Cr[VI]). In addition, borehole geophysical logging was conducted in the open borehole portions of wells 114-MW4D, 114-MW6D, 114-MW52D, 114-MW57D, 114-MW61D, and 114-MW66D in 2020 and 2021 to characterize bedrock structures and the flow regime at these wells. Historic groundwater analytical results and findings of the borehole geophysical logging conducted in 2020 and 2021 at these wells

[1] Delineation of other chromate chemical production waste (CCPW) metals (antimony, nickel, thallium, vanadium) is not required as these constituents were not detected at concentrations greater than the New Jersey Groundwater Quality Standards (GWQS) in bedrock groundwater (AECOM, 2022).

are included in the January 2022 Groundwater RIR (AECOM, 2022), which is included in **Appendix A**. Boring logs and well construction details for these wells are provided in **Appendix B**.

1.2 Classification Exception Area/Well Restriction Area

A Classification Exception Area and Well Restriction Area (CEA/WRA) serves as an institutional control and provides notification to the public that concentrations of contaminants of concern (COCs) remain at concentrations greater than the NJDEP Groundwater Quality Standard (GWQS). Three CEA/WRAs currently exist for the Project Area:

- **CEA/WRA for Project Area Groundwater:** A CEA/WRA for Site 114 was established by the NJDEP on March 2, 2022. The CEA/WRA encompasses an area of approximately 35 acres, extends vertically to a depth of approximately 114 feet (ft) below ground surface (bgs), and includes the shallow, intermediate, and deep water-bearing zones, as well as a portion of the bedrock water-bearing zone where chromium-related contamination was observed. The vertical and horizontal extent of the CEA will be revised at the time of the submittal of the Remedial Action Report for the GA Group Sites so that it reflects groundwater conditions at that time.
- **CEA for Historic Fill-related COCs:** A virtual CEA for historic fill-related impacts to groundwater for the GA Group Sites was established by the NJDEP on March 8, 2022.
- **CEA/WRA for Manufactured Gas Plant (MGP) impacts:** A CEA/WRA was established by the NJDEP on July 25, 2014 for groundwater contamination relating to the operation of the former MGP on Site 114. The Public Service Electric & Gas Company (PSEG) is responsible for investigating and remediating impacts related to the operation of the former MGP located within the Project Area. The CEA/WRA associated with the former MGP remediation encompasses an area of approximately 76 acres and extends vertically to a depth of 100 ft bgs.

1.3 Report Organization

As stated above, this addendum does not repeat information already reported in the GA Group Groundwater RIR; rather, this addendum focuses on additional information or updates to this document since NJDEP approval was received. This addendum includes the following sections relevant to the bedrock water-bearing zone:

- Section 2.0 – Environmental Setting;
- Section 3.0 – Remedial Investigation Activities;
- Section 4.0 – Remedial Investigation Results; and
- Section 5.0 – References.

Per the New Jersey Administrative Code (N.J.A.C.) 7:26E-1.6, the following regulatory forms are included with this submission; these are the only forms requiring updates from the January 2022 GA Group Groundwater RIR and RAWP:

- Cover/Certification Form; and
- Case Inventory Document (CID).

2.0 Environmental Setting

Descriptions of the physical setting, historical and industrial and regional development, topography, and regional and Project Area geology and hydrogeology are presented in the *Updated Conceptual Site Model for the Garfield Group Avenue* (AECOM, 2025a). The focus of this RI addendum is the bedrock geology and hydrogeology, as presented in the sections below.

2.1 Bedrock Geology

A description of the Regional and Project Area bedrock geology is presented below.

2.1.1 Regional Bedrock Geology

Jersey City is located within the upper portion of the drainage basin for Newark Bay and lies within a glaciated section of the northeast-southwest trending Newark Basin. The bedrock is principally composed of Upper Triassic to Lower Jurassic age sedimentary rocks, known collectively as the Newark Supergroup (Drake, Jr. et al., 1997). In New Jersey, the sedimentary rocks of the Newark Supergroup are composed of reddish-brown arkosic sandstone, mudstone, siltstone, conglomerate, and dark gray argillite (Volkert, 2016). The Newark Supergroup is divided into three formations based on lithology, including:

- a lower unit identified as the Stockton Formation,
- a middle unit identified as the Lockatong Formation, and
- an upper unit identified as the Passaic Formation.

These sedimentary units have been intruded by igneous rock, principally diabase, in the form of sills and dikes, with the intrusions now generally forming ridges such as the Palisades and the Heights in Jersey City. More detailed descriptions of each of these bedrock units are provided in USGS Open File Map OFM-110 (Volkert, 2016). The regional bedrock geology is illustrated on **Figure 2-1**.

The beds of the Newark Supergroup in the Jersey City area generally strike to the northeast and dip at approximately 16 degrees to the west-northwest. A prominent set of vertical joints strikes north 45 degrees east, approximately parallel to the strike of the beds. A secondary set of nearly vertical joints strikes north 75 degrees west, subparallel to the dip of the bedding.

2.1.2 Project Area Bedrock Geology

Bedrock in the Project Area was characterized by rock cores, borehole geophysical logging, and a seismic refraction survey. Based on these investigations and available information for the regional bedrock units, bedrock within the Project Area includes the following (Volkert, 2016):

- **Diabase:** Dark-greenish-gray to black, fine-grained, massive, hard diabase; contacts are aphanitic and display chilled, sharp margins with enclosing sedimentary rocks.
- **Lockatong Formation:** Cyclically deposited sequences of siltstone, silty argillite, shale, mudstone, and arkosic sandstone; this unit may be thermally metamorphosed along contact with diabase.

- **Stockton Formation:** Interbedded sequences of medium to fine grained, poorly sorted to clast imbricated conglomerate, arkosic sandstone, and clayey fine-grained, sandstone, siltstone and mudstone.

The Project Area is underlain in the eastern portion by the Stockton Formation and in the western portion by the Lockatong Formation. A diabase sill intruded into the Lockatong Formation along the western edge of the Project Area along present-day Garfield Avenue. The diabase causes the bedrock surface west of the Project Area to rise abruptly creating a topographic high. Alternating transitions from the diabase into the Lockatong Formation were identified at wells 114-MW4D, 114-MW61D, 14-MW71D, 114-MW76D, and 132-P3-MW001D, indicating that these units are interfingered along the contact between the diabase and the Lockatong Formation.

Based on borehole geophysical logging data collected at bedrock wells 114-MW4D, 114-MW6D, 114-MW52D, 114-MW57D, 114-MW61D, 114-MW66D, 114-MW71D, 114-MW72D, 114-MW73D, 114-MW74D, 114-MW76D, and 114-MW81D, strike and dip of bedding and primary fractures in the Lockatong Formation within the Project Area are as follows:

- The strike direction of the bedding planes is northeast-southwest. The mean dip azimuth for the bedding is to the northwest, with mean dip angles ranging from 13 to 18 degrees.
    - The dip angle of Lockatong Formation in the Project Area is best characterized at well 114-MW6D, as bedding at this well is unaffected by intrusion of the diabase. Based on borehole geophysical logging, the mean dip angle for bedding at this location is 13.72 degrees.
    - Steeper bedding or fracture dip angles were identified at wells 114-MW61D, 114-MW71D, and 114-MW76D. At 114-MW61D, Lockatong Formation observed from 117 ft bgs to the bottom of the borehole exhibited fracture dips ranging from 19 to 69 degrees, with a mean dip of 44 degrees. At 114-MW71D, the mean bedding dip angle from 132 ft bgs to the bottom of the borehole was 62 degrees. At 114-MW76D, Lockatong Formation observed from 99 ft bgs to the bottom of the borehole exhibited fracture dips ranging from 12 to 77 degrees, with a mean dip of 48 degrees. All three of these wells are at the contact between the diabase and the Lockatong Formation, with the bedding and fracture dip angles within the Lockatong altered by intrusion of the diabase into the Lockatong.
- The strike direction of the predominant fracture set is northeast-southwest. The mean dip azimuth for the predominant fracture set is to the northwest, with the prominent dip angle parallel to bedding. A secondary set of joints in the rock dip more steeply to the southeast; however, these joints are truncated at the more gently dipping bedding plane partings and fractures.

The bedrock surface in the Project Area was shaped by various factors, including weathering, erosion, and glacial activity. **Table 2-1** presents a summary of the borings at which bedrock was encountered and includes the inferred top of bedrock elevation and a determination of the bedrock type for each boring where possible. The explorations listed on **Table 2-1** include borings advanced during various investigations conducted by PPG and PSEG. These data were integrated with the seismic refraction survey data to prepare the bedrock surface elevation map presented on **Figure 2-2**.

The interpretation of seismic refraction data relies on a contrast in seismic velocity between materials to allow for detection of the bedrock surface. The method does not differentiate between weathering and lithology, only velocity. On a site with one bedrock lithology, the observed changes in bedrock velocity can be used as a guide to weathering. For the Project Area, the determination of weathered versus competent bedrock via the seismic survey is complicated by the three bedrock types present

(i.e., Lockatong Formation, Stockton Formation, diabase) and the overlap in velocities of these bedrock types. Where the observed velocities are very low, weathered rock is likely present. Conversely, where bedrock velocity is very high, only a thin layer of weathered bedrock may be present (too thin to be detected by the method) or weathered bedrock may be absent (i.e., only competent rock is present). In addition, in areas where highly weathered bedrock is overlain by a dense material such as glacial till, the velocity range of the weathered rock might overlap or approach the velocity range of the till, and the two materials cannot be distinguished seismically. In such cases, the depth to rock determined by seismic refraction is the depth of competent bedrock, which might be located at some depth below the geologic contact. As a result, the top of bedrock surface map provided in **Figure 2-2** may represent weathered bedrock in some areas of the site, and competent bedrock in other areas of the site, and the seismic survey cannot be used to discriminate between weathered and competent bedrock.

Seismic velocity data and boring log information were integrated to estimate the contacts between the Lockatong Formation, the diabase, and the Stockton Formation, as illustrated on **Figure 2-3**. The determination of geologic boundaries for the three bedrock types was developed using two lines of evidence, including seismic velocity data and logs from borings that were advanced into bedrock. Based on published data, the compressional wave velocity of mudstone (i.e., Lockatong Formation) varies from about 9,000 feet per second (ft/sec) to 14,000 ft/sec, sandstone (i.e., Stockton Formation) varies from 10,000 ft/sec to about 16,500 ft/sec, and diabase varies from 14,500 ft/sec to more than 22,000 ft/sec. The variations in velocity are related to mineralogy, depositional environment, and degree of weathering of the rock types, and measured velocities can be outside of these reported ranges. As there is significant overlap in the ranges of compressional wave velocity for the three rock types identified at the Site, compressional wave velocity can only be used as a guide in distinguishing lithology and cannot be used as the sole method for discrimination. Therefore, **Figure 2-3** includes the locations of soil borings advanced into bedrock and the rock type observed at each boring, if determinable from the boring log. The contact between the Lockatong and Stockton formations was inferred based solely on the rock type observed at borings. The contact between the diabase and the Lockatong Formation was inferred based on observed rock types at borings and the assumption that areas of bedrock exhibiting compressional wave velocities greater than approximately 20,000 ft/sec are indicative of diabase.

The bedrock surface is characterized by two bedrock valleys (or channels) with a bedrock high separating these features in the central portion of Site 114. The bedrock surface rises to the north, east, and west of these features, resulting in a northeast-southwest trending trough with its highest elevations in the northwestern portion of the Project Area and its lowest elevations in the southeastern portion of the Project Area. The elevation of the top of the bedrock surface ranges from 0 feet North American Vertical Datum of 1988 (NAVD88) to the northwest (west of Garfield Avenue) to -115 feet NAVD88 to the southeast (along Halladay Street). These bedrock features have a significant effect on groundwater flow patterns and the fate and transport of groundwater impacts in the southwestern quadrant of Site 114.

Based on observations from boring logs and borehole geophysical logs, segments of weathered bedrock exist across the Project Area. Weathered bedrock forms via physical and chemical processes which alter the structure of the rock, leaving residual materials derived from the original bedrock matrix. The degree of weathering of the bedrock in the Project Area is variable, with some borings exhibiting sections of highly weathered rock while others exhibit only slightly weathered rock. The weathered rock is not continuous across the Project Area.

The thickness of the weathered bedrock ranges from 1 to approximately 12 ft in the sedimentary formations and from 1.5 to 11 ft in the diabase. However, 46 and 42 ft of weathered diabase was

observed at wells 114-MW61D and 114-MW71D, respectively. In addition, 28.5 ft of weathered Lockatong Formation was observed at 114-MW81D. These three wells are located near the contact between the Lockatong Formation and the diabase where additional weathering of the rock occurred due to thermal fracturing, thereby increasing the secondary porosity and hydraulic conductivity of the diabase and hosting sedimentary rock (Matter, et. al, 2005). **Table 2-1** includes the thickness of weathered bedrock for borings at which bedrock was encountered, and **Figure 2-4** depicts an isopach map for the weathered bedrock in the Lockatong and Stockton formations.

2.2 Bedrock Hydrogeology

Groundwater flow in bedrock is controlled by the structural elements of the rock (Heath, 1983). In competent bedrock, groundwater is stored and transmitted along fractures, bedding planes, and interconnected cracks or voids in the rock. Depending on the effective porosity of the rock matrix, flow may or may not occur within the rock matrix itself. In weathered bedrock, groundwater flow occurs via the interconnected portions of the weathered rock. The permeability of the residual materials comprising the weathered rock depends on various factors, including the mineral composition of the parent rock, the type of weathering, the duration of weathering processes, and the interconnectivity between the weathered rock elements. Groundwater flow within weathered bedrock is controlled by the degree of weathering, which affects the permeability of the weathered rock, the continuity of the weathered rock horizon, and the shape of the underlying competent rock surface, which has a lower permeability than the weathered rock.

In the sedimentary Lockatong and Stockton Formations, groundwater flow occurs primarily along bedding plane fractures with the prevailing direction parallel to bedding strike and a secondary flow component along bedding dip (Herman, 2001). Steeply dipping secondary fractures (joints) serve as potential pathways for leakage between the bedding plane fractures, with the vertical extent of leakage between bedding plane fractures inhibited by the termination of these joints at bedding plane boundaries. Groundwater flow does not occur within the matrix of these sedimentary formations. The diabase has little to no matrix permeability and, although fractured, serves as a no-flow boundary.

Synoptic water level measurements were collected using an electronic water level meter on December 13, 2021, March 21, 2022, and November 11-12, 2024, to characterize groundwater potentiometry within the bedrock. The December 2021 gauging event was conducted at open borehole bedrock wells and associated monitoring well and piezometer clusters while the March 2022 event was conducted at bedrock wells completed with FLUTe® liners and associated monitoring well and piezometer clusters. Groundwater gauging data and calculated vertical hydraulic gradients for these gauging events are presented on **Table 2-2**. The November 2024 gauging event provides a synoptic dataset representative of prevailing conditions for the weathered bedrock in the Project Area at that time (**Table 2-3**).

A figure presenting the potentiometric surface for the competent bedrock groundwater flow system in the Project Area could not be developed because there are very few wells within the Lockatong Formation that intersect the same fracture zone and are hydraulically connected. However, the direction of groundwater flow within the competent portion of the Lockatong Formation in the southwestern quadrant of Site 114 (near well 114-MW66D) was evaluated via targeted bedrock well installation and hydraulic testing, as discussed in **Section 3**. A potentiometric surface map for the weathered bedrock groundwater flow system based on the synoptic gauging event conducted in November 2024 is presented in **Figure 2-5**. It is important to note that the potentiometric surface for the weathered bedrock depicted on **Figure 2-5** represents prevailing conditions during active injections into the bedrock.

Evaluations of horizontal and vertical groundwater flow in bedrock within the Project Area indicate the following regarding groundwater levels, horizontal groundwater flow, and vertical hydraulic gradients:

- The prevailing directions of groundwater flow within the Lockatong Formation in the southwestern quadrant of Site 114 are to the south/southwest along bedding strike and to the west down bedding dip due to the anisotropy in the bedrock.
- Horizontal groundwater flow within weathered bedrock occurs generally from northwest to southeast.
- Seasonal variability in vertical hydraulic gradient directions is evident in overburden and bedrock, as indicated by occasional reversals in the direction of vertical hydraulic gradients at certain locations.
- At the basal till/bedrock interface, upward vertical hydraulic gradients are dominant from the underlying bedrock except in the southwestern quadrant of Site 114 where downward gradients from the basal till into the bedrock were observed.
- Water levels in the bedrock water-bearing zone are affected by implementation of the groundwater remedies.

Aquifer testing was performed to derive estimated values of hydraulic conductivity for the bedrock water-bearing zone. Based on these evaluations, a summary of estimated hydraulic conductivity values for bedrock is presented in the following table.

Zone	**Estimated Hydraulic Conductivity** (feet/day)
Weathered Bedrock (Lockatong Formation)	28.57 – 52.11
Competent Bedrock (Lockatong Formation)	0.00155 – 0.0831
Diabase	0.06

2.3 Receptor Evaluation

An updated Receptor Evaluation was submitted with the September 8, 2023 *Draft Groundwater Remedial Action Report* (RAR, AECOM, 2023). At the request of the NJDEP, an updated Receptor Evaluation is provided with this RIR Addendum. The updated Receptor Evaluation includes the following components:

- Receptor Evaluation Form
- Attachment A: Property Search:
  - Table A.1: Properties within 200 feet of Project Area
  - Figure A.1: Land Use Within 200 Feet
- Attachment B: Well Search
  - Table B.1: Well Search
  - Figure B.1: Well Search Results

Conclusions from the receptor evaluation are summarized below:

- Groundwater beneath the Project Area is not used as a source of potable water, as the area is served by the municipal water supply system.
- Land use surrounding the Project Area includes predominantly commercial and industrial properties (e.g., warehouses, garages, etc.).
- Residential properties are located to the west of the Project Area, between Garfield Avenue and Randolph Avenue, and to the north-northeast between Forrest Street and Site 199, and between Halladay Street and Van Horne Street (upgradient of the groundwater plume).
- No schools or childcare centers are present within 200 feet of the Project Area.
- No sensitive receptors are present within 200 ft downgradient of the 70 µg/L Cr isopleth in the shallow, intermediate, or deep water-bearing zones. In addition, the results of the well search included in the updated receptor evaluation show that no irrigation or domestic supply wells are located within a half-mile of the Project Area.

3.0 Remedial Investigation Activities

The following subsections provide a description of the activities performed from October 2021 through February 2025 during implementation of the bedrock RI within the Project Area. The field program was completed in accordance with the bedrock investigation scopes of work dated April 22, 2021, and January 25, 2022 (included in **Appendix A**), and as per discussions held with NJDEP on the following dates:

- February 2, 2022: Discussion regarding the January 25, 2022 scope of work. An email from NJDEP providing comments on the January 25, 2022 scope of work and on the materials discussed during the February 2, 2022 meeting is included in **Appendix A**.
- October 19, 2023: Discussion regarding the location and scope of work for installation, development, packer testing, and borehole geophysics at two new bedrock test boreholes (114-MW73D and 114-MW74D) to characterize the groundwater flow regime within the Lockatong Formation in the vicinity of well 114-MW66D. Discussion regarding the location and scope of work for installation, development, and sampling of one new weathered bedrock monitoring well (114-MW75WR) to complete delineation of the Cr plume. Meeting notes documenting the proposed scope of work are included in **Appendix A**.
- October 25, 2023: Follow-up discussion regarding the proposed locations of wells 114-MW73D, 114-MW74D, and 114-MW75WR during which agreement on the well locations was achieved. An email documenting this discussion is included in **Appendix A**.
- December 5 and 21, 2023: Discussion (12/5/23) regarding decommissioning of four weathered bedrock monitoring wells (114-MW55C, 114-MW58C, 114-MW60C, and 114-MW64C) and proposed locations for two replacement weathered bedrock monitoring wells (114-MW58C-R and 114-MW60C-R). An email with approval of the proposed well locations dated 12/21/23 is included in **Appendix A**.
- April 4, 2024: Discussion regarding the location and scope of work for installation, development, pump testing, borehole geophysics, and sampling at one new bedrock well (114-MW76D[2]) downgradient of 114-MW72D to complete delineation of the Cr plume along Lockatong formation strike downgradient of 114-MW72D. In addition, during this meeting NJDEP provided approval for decommissioning of test boreholes 114-MW73D and 114-MW74D. An email documenting the proposed scope of work is included in **Appendix A**.
- September 4, 2024: Discussion regarding the location and scope of work for installation of one new bedrock well (114-MW81D) downgradient of 114-MW72D and upgradient of 114-MW76D to complete delineation of the Cr plume along Lockatong formation strike downgradient of 114-MW72D. Discussion regarding the use of extrapolation underneath 114-MW72D to complete vertical delineation in the area of this well for the purposes of the RI. Discussion regarding the potential need for a variance from single point compliance in the

[2] In the email documenting this meeting, the proposed new bedrock well is identified as 114-MW75D. The actual well that was installed at this location is identified as 114-MW76D.

area downgradient of well 114-MW72D. An email documenting this discussion is included in **Appendix A**.

- November 20, 2024: Discussions regarding the scope of work for installation, development, pump testing, packer testing, and borehole geophysics at well 114-MW81D, followed by additional discussion via email. An email documenting these discussions is included in **Appendix A**.
- January 2, 2025: Discussion (via email) regarding borehole geophysical results and proposed sampling intervals at well 114-MW81D. An email documenting this discussion is included in **Appendix A**.

A data usability assessment is also included in this section. Unless otherwise noted, field investigation procedures were consistent with the methods and procedures described in the following documents:

- Field Sampling Plan/Quality Assurance Project Plan (FSP-QAPP) (AECOM, 2010);
- Health and Safety Plan (HASP) (AECOM, 2020); and
- NJDEP Field Sampling Procedures Manual (FSPM) (NJDEP, 2005).

3.1 Subcontractors

The following subcontractors provided services during implementation of the bedrock groundwater RI field activities:

- Aquifer Drilling and Testing (ADT) of Mineola, New York, a NJ-licensed driller, provided drilling services including advancement of soil borings, monitoring well installation, soft-dig utility clearance, well development, pump testing, and packer testing.
- Borbas Surveying and Mapping of Boonton, New Jersey, a NJ-licensed surveyor, provided surveying services (horizontal locations and vertical elevations) for boring and well locations.
- SGS North America of Dayton, New Jersey and Eurofins Environment Testing of Edison, New Jersey, both NJDEP-certified analytical laboratories, provided laboratory analytical services.
- Hager-Richter Geoscience, Inc. of Fords, New Jersey provided borehole and surface geophysical services.
- Flexible Liner Underground Technologies (FLUTe®) of Alcalde, New Mexico provided installation of FLUTe® liners in open borehole bedrock wells. FLUTe® also assisted with installation and data interpretation for air-coupled pressure transducers installed at wells with FLUTe® liners during packer testing and pump testing activities.

3.2 Drilling Program

Five bedrock monitoring wells (114-MW71D, 114-MW72D, 114-MW75WR, 114-MW76D, and 114-MW81D), two bedrock test boreholes (114-MW73D and 114-MW74D), and ten nested piezometers (114-PZ-52I/D/WR, 114-PZ-57I/D/T, 114-PZ-66I/D/T/WR) were installed during bedrock RI activities conducted from October 2021 to November 2024. In addition, existing bedrock wells 114-MW4D, 114-MW61D, and 114-MW66D were modified by deepening the open borehole interval at these locations. Four weathered bedrock monitoring wells were decommissioned (114-MW55C, 114-MW58C, 114-MW60C, and 114-MW64C) and two replacement weathered bedrock monitoring wells were installed (114-MW58C-R and 114-MW60C-R). Lastly and separate from RI activities, five bedrock monitoring wells (114-MW76WR, 114-MW77WR, 114-MW78WR, 114-MW79WR, and 114-MW80WR) and nine

bedrock injection wells (114-PW-01WR, 114-PW-02WR, 114-PW-03WR, 114-PW-04WR, 114-PW-05WR, 114-PW-06WR, 114-PW-07WR,114-PW-09WR, and 114-PW-10WR) were installed in April, May, and June of 2024 for implementation and monitoring of the bedrock remedial action.

A summary of the completed wells and piezometers, and previously installed bedrock wells, is provided in **Table 3-1**. Well locations are presented on **Figure 1-2.** Boring logs and well construction details are provided in **Appendix B**. Well documentation (well permits, NJDEP Form A, and NJDEP Form B) are presented in **Appendix C**. Drilling, well installation, and well decommissioning activities were performed in accordance with N.J.A.C. 7:9D by a NJ-licensed driller. Upon installation, monitoring wells, piezometers, and test boreholes were developed in accordance with the FSP-QAPP (AECOM, 2010).

3.2.1 Installation of Bedrock Monitoring Wells and Test Boreholes

Two bedrock monitoring wells (114-MW71D and 114-MW72D) were installed in October and November of 2021. Two test boreholes (114-MW73D and 114-MW74D) and three weathered bedrock monitoring wells (114-MW58C-R, 114-MW60C-R, and 114-MW75WR) were installed in December 2023 and January of 2024. Open borehole bedrock monitoring well 114-MW76D was installed in June 2024 and open borehole bedrock monitoring well 114-MW81D was installed in November 2024. At each well location, continuous soil logging from the ground surface to the top of bedrock was completed using sonic drilling. Upon reaching bedrock, 6-inch steel casing was installed into the bedrock and continuous logging of the bedrock was performed to terminal depth. Boring logs and well construction details are presented in **Appendix B**.

3.2.2 Deepening of Existing Bedrock Wells

Existing open borehole bedrock wells 114-MW4D and 114-MW61D were deepened by extending each borehole to complete horizontal delineation of groundwater impacts at the contact between the diabase and the Lockatong Formation and within the Lockatong Formation. In addition, existing open borehole bedrock well 114-MW66D was deepened to complete vertical delineation of groundwater impacts within the Lockatong Formation at this location. At each deepened well, continuous logging of the bedrock was performed to terminal depth. Well modification activities were conducted in November 2021. Boring logs and well construction details are presented in **Appendix B**.

3.2.3 Installation of Piezometer Clusters

A total of 10 nested piezometers (114-PZ-52I/D/WR, 114-PZ-57I/D/T, 114-PZ-66I/D/T/WR) were installed within three separate boreholes to assist in the evaluation of vertical hydraulic gradients between the intermediate, deep (including the basal till), weathered bedrock, and competent bedrock zones. Piezometers were paired with existing bedrock wells 114-MW52D, 114-MW57D, and 114-MW66D, and existing wells 114-MW52C (screened in basal till) and 114-MW57C (screened in weathered bedrock). For each piezometer cluster, continuous logging of soils and bedrock (as applicable) from the ground surface to terminal depth was completed using sonic drilling techniques. Drilling activities were conducted in November 2021. Boring logs and well construction details are presented in **Appendix B**.

3.2.4 Well Decommissioning

Well decommissioning activities included the following:

- 114-MW55C, 114-MW58C, 114-MW60C, and 114-MW64C: Decommissioned in August 2023.

- 114-MW73D and 114-MW74D: Decommissioned in May 2024.

Available well decommissioning records are provided in **Appendix C**. Decommissioning records for wells 114-MW73D and 114-MW74D are awaiting pin access from NJDEP prior to submittal and will be included in the next milestone report.

3.3 114-MW52D Packer Installation

In November 2021, a single inflatable packer was installed at well 114-MW52D by a NJ-licensed drilling subcontractor at a depth of 100 ft below the top of the well steel casing to isolate the lowest interval of the 105-ft-deep open borehole. After packer installation, the isolated interval was purged of three volumes and allowed to recharge. Once recharged, a groundwater sample was collected from the isolated interval via low-flow sampling protocols using a bladder pump. Following sample collection, the inflatable packer was removed by a NJ-licensed drilling subcontractor.

Samples were submitted to a NJ-certified analytical laboratory for analysis of total phase Cr and Cr(VI). The analytical samples were bottled in certified containers provided by the laboratory and labeled with the sample identification, depth, date of collection, and analysis to be performed. Analytical samples were collected, handled, and shipped in accordance with chain-of-custody protocols described in the FSP-QAPP. Samples were analyzed using methods with adequate sensitivity to accurately measure concentrations to the GWQS. Samples collected for Cr(VI) were also analyzed in the laboratory for pH and oxidation-reduction potential (ORP). Quality Assurance (QA)/Quality Control (QC) samples were collected, including a field blank, a field duplicate, and matrix spike/matrix spike duplicates.

3.4 Surveying

Upon completion of the drilling programs, horizontal locations and vertical elevations at the completed explorations were surveyed by a NJ-licensed surveyor. Horizontal locations were surveyed in both latitude and longitude and in the New Jersey State Plane Coordinate System (ft) in North American Datum of 1983 (NAD83). Elevations were surveyed to nearest 0.01 ft in the North American Vertical Datum of 1988 (NAVD88). During deepening of bedrock wells 114-MW4D and 114-MW61D, the existing well steel casings were cut down to the ground surface to facilitate setup of the drill rig over the existing borehole. Upon completion of the drilling program, the casings were repaired and resurveyed**.** NJDEP Form Bs (Location Certification) for each monitoring well, test borehole, and piezometer cluster installed or modified as part of the bedrock RI are provided in **Appendix C.**

3.5 Hydraulic Testing

Hydraulic testing was conducted in December 2021 at monitoring wells 114-MW52C, 114-MW52D, 114-MW53C, 114-MW56C, 114-MW57C, 114-MW57D, 114-MW61C, 114-MW65C, and 114-MW66D to characterize permeability of the screened formations (basal till, weathered bedrock, competent bedrock) and to evaluate for hydraulic connection between wells. A description of the completed field activities, presentation of the collected data, and discussion of the associated findings are presented in a Technical Memorandum included as **Appendix D**.

3.6 Pump Testing and Packer Testing

Pump testing and packer testing were conducted at select wells to evaluate for hydraulic connection between the wells and to allow for evaluation of the direction of groundwater flow within the Lockatong Formation in the area around well 114-MW66D, as follows:

- Wells 114-MW73D and 114-MW74D were developed on January 11 and 12, 2024. Groundwater elevation data collected from the FLUTe ports at 114-MW66D during well development at 114-MW73D and 114-MW74D were used to evaluate for hydraulic connection between 114-MW66D and 114-MW73D, and between 114-MW66D and 114-MW74D, respectively.
- Packer testing was performed from January 16 to 24, 2024 at wells 114-MW73D and 114-MW74D to evaluate for hydraulic connection between 114-MW73D and wells 114-MW61D, 114-MW66D, and 114-MW74D, and to evaluate for hydraulic connection between 114-MW74D and wells 114-MW61D, 114-MW66D, and 114-MW73D.
- Well 114-MW76D was developed on June 19, 2024. Groundwater elevation data collected from the FLUTe ports at 114-MW72D during well development at 114-MW76D were used to evaluate for hydraulic connection between 114-MW76D and 114-MW72D.
- Well 114-MW81D was developed on November 22, 2024, and a pump test was performed at well 114-MW81D on November 25, 2024. Groundwater elevation data collected from the FLUTe ports at 114-MW72D and from the open borehole at 114-MW76D during well development and pump testing at 114-MW81D were used to evaluate for hydraulic connection between 114-MW72D and 114-MW81D and between 114-MW76D and 114-MW81D, respectively.
- Packer testing was performed from December 4 to December 6, 2024 at well 114-MW81D to evaluate for hydraulic connection between 114-MW81D and wells 114-MW76D and 114-MW72D.

A description of the completed field activities, presentation of the collected data, and discussion of the associated findings are presented in two Technical Memoranda included as **Appendix E**.

3.7 Borehole Geophysics and Seismic Survey

Borehole geophysical logging and a seismic refraction survey were conducted by Hager-Richter Geoscience, Inc., an AECOM subcontractor. Borehole geophysical logging was completed as follows:

- 114-MW4D, 114-MW61D, and 114-MW66D: Geophysical logging at 114-MW4D, 114-MW61D, and 114-MW66D was conducted in two phases, with the first phase of logging at 114-MW4D conducted in September 2020 and the first phase of logging at 114-MW61D and 114-MW66D conducted in January 2021 (AECOM, 2022). After the first phase of logging, each of these boreholes was deepened and a second phase of logging was conducted in November 2021.
- 114-MW71D and 114-MW72D: Borehole geophysical logging was conducted in November 2021.
- 114-MW73D and 114-MW74D: Borehole geophysical logging was conducted in February 2024.
- 114-MW76D: Borehole geophysical logging was conducted in July 2024.
- 114-MW81D: Borehole geophysical logging was conducted in December 2024.

The subcontractor's borehole geophysical reports and transmittal summaries for logging conducted from November 2021 to December 2024 are included in **Appendix F**.

A seismic refraction survey was conducted in the Project Area in November and December 2021 to map the bedrock surface and to refine the location of the contact between the diabase and the Lockatong Formation. The seismic refraction survey report is included in **Appendix G**.

3.8 FLUTe® Liners and Multiport System Installation

Installation of FLUTe liners and multiport samples systems were conducted by Flexible Liner Underground Technologies, an AECOM subcontractor. Installations included:

- 114-MW4D and 114-MW66D: The deepening of open borehole bedrock wells 114-MW4D and 114-MW66D in November 2021 yielded open borehole sections greater than 25 ft in length, which is the limit of open borehole or well screen length allowed in a monitoring well by NJDEP (N.J.A.C. 7:09D). Therefore, blank FLUTe® liners were installed at these two wells in January 2022 to isolate the boreholes.
- 114-MW52D, 114-MW66D, and 114-MW72D: Following evaluation of analytical results from groundwater samples collected at discrete intervals within the open boreholes for these wells in November and December 2021, FLUTe® multiport systems were installed at these wells in March 2022 to vertically delineate Cr impacts within the Lockatong Formation. The blank FLUTe® liner at 114-MW66D was removed prior to installation of the multiport system. Sample port depth intervals were determined for the FLUTe® multiport systems based on downhole geophysical survey data, boring logs, and groundwater analytical results from samples collected at discrete intervals within each well. During installation, the FLUTe® liners did not readily enter the boreholes and the standing water in the boreholes had to be pumped out, indicating that bedrock transmissivity at these wells is very low.
- 114-MW4D and 114-MW57D: FLUTe® multiport systems were installed at these wells in April 2023. The blank FLUTe® liner at 114-MW4D was removed prior to installation of the multiport system. Sample port depth intervals were determined for the FLUTe® multiport systems based on downhole geophysical survey data, boring logs, and groundwater analytical results from samples collected at discrete intervals within each well. During installation, the FLUTe® liners did not readily enter the boreholes and the standing water in the boreholes had to be pumped out, indicating that bedrock transmissivity at these wells is very low. After installation, the FLUTe® liner at 114-MW4D was found to be leaking due to a tear in the liner incurred during installation of the multiport sample system. Therefore, the FLUTe® liner was filled with grout to seal the liner while maintaining the integrity of the individual sample ports.

Following installation, and prior to sampling, the FLUTe® multiport systems in each well were purged as recommended by the manufacturer to obtain groundwater representative of the formation. Details regarding FLUTe® multiport system purging are presented in the logs included in **Appendix H**. In general, recharge of the FLUTe® multiport systems was slow (on the order of days), providing further evidence of the low permeability of the targeted bedrock intervals.

3.9 Groundwater Elevation Gauging

Synoptic water level measurements were collected using an electronic water level meter on December 13, 2021 and March 21, 2022 to characterize groundwater potentiometry within the bedrock investigation area. The December 2021 gauging event was conducted at open borehole bedrock wells and associated monitoring well and piezometer clusters while the March 2022 event was conducted at bedrock wells completed with FLUTe® liners and associated monitoring well and piezometer clusters. Groundwater gauging data and calculated vertical hydraulic gradients are presented on **Table 2-2**.

A synoptic round of depth to groundwater readings was collected at wells 114-MW66D, 114-MW73D, and 114-MW74D on February 15, 2024. The depth to groundwater readings were used to calculate potentiometric heads for each well to interpolate the direction of groundwater flow within the Lockatong Formation (**Appendix E**).

A Project Area-wide groundwater elevation gauging event inclusive of wells completed in bedrock was conducted from November 11-12, 2024 (**Table 2-3**). Data from this gauging event were used to develop the potentiometric surface map for the weathered bedrock groundwater flow system presented in **Figure 2-5**.

3.10 Groundwater Sampling

3.10.1 Low-Flow Groundwater Sample Collection

Low-flow protocol sampling of monitoring wells was conducted to characterize groundwater quality within the bedrock in the Project Area. **Table 3-2** summarizes the wells sampled and provides details regarding the collected samples and requested analyses. Low-flow sampling was conducted in accordance with the FSP-QAPP and the NJDEP FSPM using bladder pumps. Field parameters (pH, ORP, dissolved oxygen [DO], specific conductivity, turbidity, temperature, and depth to water) were recorded and monitored to determine stabilization. Groundwater low-flow sample collection records are provided in **Appendix I**.

Samples were submitted to a NJ-certified analytical laboratory for analysis. Samples were bottled in certified containers provided by the laboratory and clearly labeled with the sample identification, depth, date of collection, and analysis to be performed. Analytical samples were collected, handled, and shipped in accordance with chain-of-custody protocols described in the FSP-QAPP. Samples were analyzed using methods with adequate sensitivity to accurately measure concentrations to the GWQS. Samples collected for Cr(VI) were also analyzed in the laboratory for pH and ORP. QA/QC samples were collected, including field blanks, field duplicates, and matrix spike/matrix spike duplicates (**Table 3-3**).

3.10.2 FLUTe® Multiport Well Sampling

Collection of groundwater samples from the FLUTe® multiport systems installed in wells 114-MW52D, 114-MW66D, and 114-MW72D was conducted in April, May, June, July, and August of 2022. In May and June of 2022, additional volume was purged from each FLUTe® port at these wells to clear the targeted intervals of groundwater introduced into the formation during drilling and well installation and to obtain groundwater samples that are representative of the formation. Subsequent collection of groundwater samples from the FLUTe® multiport systems installed in wells 114-MW4D, 114-MW52D, 114-MW57D, 114-MW66D, and 114-MW72D was conducted on a quarterly basis from June 2023 to December 2024. **Table 3-2** summarizes the wells sampled and provides details regarding the collected samples and requested analyses.

For the sampling events conducted from June 2023 to December 2024, the FLUTe® ports were purged to remove stagnant water and allowed to recharge a few days prior to each sampling event. During each sampling event, water level readings were collected from the ports prior to sampling to document that the port had recharged, and sample aliquot removal was conducted in accordance with the manufacturer's standard operating procedure (included in **Appendix H**). During sample collection, the sample aliquot removed from each port was collected in a clean, laboratory-certified, 1-gallon container and homogenized by gently swirling the container. Once homogenization was complete, the sample aliquot was poured into certified containers provided by the laboratory and clearly labeled with

the sample identification, depth, date of collection, and analysis to be performed. If sufficient sample volume remained, field parameters (pH, ORP, DO, specific conductivity, turbidity, and temperature) were measured and recorded for the sample. FLUTe® sample collection records are provided in **Appendix H**.

Samples were submitted to a NJ-certified analytical laboratory for analysis. Analytical samples were collected, handled, and shipped in accordance with chain-of-custody protocols described in the FSP-QAPP. Samples were analyzed using methods with adequate sensitivity to accurately measure concentrations to the GWQS. Samples collected for Cr(VI) were also analyzed in the laboratory for pH and ORP. QA/QC samples were collected, including field blanks, field duplicates, and matrix spike/matrix spike duplicates (**Table 3-3**).

3.11 Deviations from Scopes of Work or NJDEP Guidance

The following deviations from scopes of work discussed with NJDEP, or from NJDEP Guidance, occurred during implementation for the field activities described herein:

- The January 25, 2022 scope of work included installation of one new bedrock well (114-MW73D) on Site 132 to provide horizontal delineation of the Cr plume in the Lockatong Formation along bedding plane strike downgradient of well 114-MW72D. This proposed bedrock well was not installed during implementation of the January 25, 2022 scope of work. Instead, wells 114-MW76D and 114-MW81D were installed in June 2024 and November 2024, respectively, to complete the delineation downgradient of 114-MW72D.
- For the December 2021 sampling event conducted at wells 114-MW4D, 114-MW61D, 114-MW66D, 114-MW71D, and 114-MW72D, and for all sampling events conducted at wells 114-MW76D and 114-MW81D, a single low-flow sample was collected at each fracture where flow was identified via borehole geophysical logging to characterize groundwater quality within the open boreholes. This sampling protocol deviates from the guidance presented in Appendix C of the Site Remediation Program Groundwater Technical Guidance (NJDEP, 2012), which recommends collecting samples above and below fractures in an open-hole section of bedrock rather than directly at the fracture. These deviations were discussed with NJDEP during technical meetings held on December 7, 2021, June 12, 2024, and November 20, 2024. NJDEP concurred with the proposed sampling approach.

3.12 Data Validation and Data Usability

Data validation was performed by AECOM to evaluate whether the analytical data collected to support this addendum were scientifically defensible, properly documented, of known quality, and met objectives. Data validation included the review of analytical procedures, QC results, calibration procedures, data reduction, and completeness of the laboratory data packages as specified in the FSP-QAPP (AECOM, 2010). Deficiencies noted were communicated to the laboratory and resolutions were documented in the data validation reports. If appropriate, data were qualified for use as described later in this section.

The laboratory analytical data packages (**Appendix L**) were reviewed in accordance with the FSP-QAPP (AECOM, 2010), the NJDEP validation standard operating procedures (SOPs) for Cr(VI) and inorganic data, and United States Environmental Protection Agency (USEPA) Region 2 metals validation guidelines. The following NJDEP validation guidelines served as the basis for the actions taken during validation:

- NJDEP Office of Data Quality SOP 5.A.10, Rev 3 (September 2009), SOP for Analytical Data Validation of Hexavalent Chromium – for USEPA SW-846 Method 3060A, USEPA SW-846 Method 7196A and USEPA SW-846 Method 7199 (NJDEP, 2009); and
- NJDEP Office of Data Quality SOP 5.A.16, Rev 1 (May 2002), Quality Assurance Data Validation of Analytical Deliverables for Inorganics (based on USEPA SW-846 Methods) (NJDEP, 2002).
- RSKSOP-175 Rev. 0, 8/11/94, Sample preparation and Calculations for Dissolved Gas Analysis in Water Samples Using a GC Headspace Equilibration Technique;
- ICP-MS Data Validation, SOP No. HW-3b Revision 1 (September 2016);
- Method 300.0, Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.
- SM 5310B Total Organic Carbon by High-Temperature Combustion Method, Standards Methods for the Examination of Water and Wastewater.

Where USEPA Region 2 inorganic validation guidelines were also used in assessing metals, the most current guidance in effect at the time of validation was used; the specific revision used is listed in each data validation memorandum provided in **Appendix J**[3].

The level of validation ranged from a comprehensive validation according to the NJDEP guidelines to a limited validation based on QC summary information or completeness reviews, depending on the analyte and matrix. The validation procedures for the Cr(VI) data included full validation, which involved a comprehensive review of both summary forms and raw data, whereas the remaining parameters received limited validation. Limited validation data was based on information provided by the laboratory on its QC summary forms and did not include raw data review. At a minimum, limited validation included validation of the following data elements:

- Agreement of analyses conducted with chain-of-custody requests;
- Holding times and sample preservation;
- Method blanks/field equipment blanks/trip blanks;
- Laboratory control samples (LCS) or equivalent results;
- Matrix Spike (MS)/Matrix Spike Duplicate (MSD) results;
- Laboratory duplicate results;
- Field duplicate results; and
- Quantitation limits and sample results (limited to evaluating dilutions and re-analyses).

Full validation was conducted on the Cr(VI) data. Full validation included each of the data elements listed for limited validation along with review of calibration data and raw data, and spot checks for verification of calculations.

[3] The link to Region 2 validation guidance on the USEPA website is shown below: https://www.epa.gov/quality/region-2-quality-assurance-guidance-and-standard-operating-procedures (last accessed in September 2022).

Validation reports were prepared for each data package that was validated. The validation reports are provided in **Appendix J**. **Appendix K** provides a summary of the electronic data deliverables (EDDs) for the data packages included in this RIR addendum. The reports summarize the samples reviewed, parameters reviewed, nonconformance with the established criteria, and validation actions (including application of data qualifiers) presented in accordance with the NJDEP "hit list" format. Validation data qualifiers were based on the USEPA Region 2 validation guidelines for organic data and the NJDEP validation SOPs for Cr(VI) and inorganic data. The following qualifiers are used in data validation:

J Indicates the result was an estimated value; the associated numerical value was an approximate concentration of the analyte in the sample. J+ or J- is used when the direction of bias can be determined.

U Indicates the analyte was not detected in the sample above the sample reporting limit.

UJ Indicates the analyte was not detected above the reporting limit and the reporting limit was approximate.

UB The analyte concentration is less than or equal to three (3) times the concentration in the associated method/preparation blank. The presence of the analyte in the sample is negated due to laboratory blank contamination.

JB The analyte concentration is greater than three (3) times, but less than or equal to ten (10) times the concentration in the associated method/preparation blank. The presence of that analyte in the sample is considered "real" but the concentration is quantitatively estimated due to method blank contamination.

R The sample result was rejected due to serious deficiencies; the presence or absence of the analyte could not be confirmed.

RA The sample result was rejected due to NJ-specific data validation QC requirements; however, the result is usable for project objectives. Refer to the Data Quality and Usability section of the data validation report for further information.

3.13 Data Usability Assessment

Groundwater samples collected for the additional bedrock remedial investigation were sent to NJ-certified laboratories. The specific laboratories are detailed in each data validation report. The analyses were performed in accordance with USEPA- and NJDEP-approved analytical protocols in place at the time the analyses were performed. Quality assurance analytical measures were implemented in accordance with the NJDEP TRSR (N.J.A.C. 7:26E) (NJDEP, 2018a) and complied with the requirements for a NJDEP-certified laboratory specified in *Regulations Governing the Certification of Laboratories and Environmental Measurements* (NJDEP, 2018b). Specific quality control issues identified during validation are documented in the individual data validation reports provided in **Appendix J**. Results of the data validation indicated that, in general, the analytical data were of adequate quality to meet the project objectives. However, there were some QA/QC issues identified during data validation that resulted in qualification of data as estimated.

Data usability was evaluated using the data quality indicators of precision, accuracy, representativeness, comparability, completeness, and sensitivity. Data that were estimated during validation are regarded as usable.

3.13.1 Precision

Precision is the measure of agreement among repeated measurements of the same property under identical or substantially similar conditions and includes both field and analytical components. The information used to evaluate precision included results for field duplicates, matrix duplicates, and laboratory duplicates. For the data set presented in this addendum, relative percent difference (RPD) non-conformances were observed for field duplicates associated with Cr(VI) and metals (chromium, manganese and iron), total organic carbon (TOC) and sulfate results.

Field precision was assessed through the collection and analysis of field duplicates and expressed as the RPD of the sample and field duplicate pair results. Approximately 0.64% of the TOC results included field duplicate precision as a reason for qualification. No remaining parameters required qualification for field precision in this data set.

Laboratory precision was assessed through the RPD results for MS/MSDs, LCS/laboratory control sample duplicate (LCSD) pairs, and duplicate sample analyses. Approximately 3.2% of the sulfate results and 5.3% of the methane results included laboratory precision as a reason for qualification. No remaining parameter results were qualified on the basis of laboratory precision in this data set.

3.13.2 Accuracy

Accuracy is the degree of agreement between an observed value and an accepted reference or true value. The results of LCS data, method blanks, and MS/MSDs were used as the primary indicators of accuracy; information such as sample container type, preservation, and holding time was also considered impacting analytical accuracy. Some of this information was assessed by the laboratory at the time of receipt (container type and preservation); other parameters were evaluated during the validation process.

Qualification of data as estimated for accuracy was related to issues such as field or laboratory blank contamination, MS results, and holding time. A summary of the validation findings is presented by QC parameter type below.

The presence of target analytes in blanks related to field activities (i.e., field blanks) was cited as the reason for qualification of seven chromium results (approximately 1.6% of reported values), two iron results (approximately 2.0% of reported values), eight sulfate results (approximately 2.0% of reported values), and 17 TOC results (approximately 5.4% of reported values). For those blanks in which contaminants were detected, action levels were established per the NJDEP or USEPA Region 2 validation guidance documents. Associated sample results were qualified accordingly. No Cr(VI), manganese or methane results were qualified for contamination detected in field blanks.

The presence of target analytes in blanks related to laboratory activities (i.e., method blanks) was cited as the reason for qualification of four sulfate results (approximately 1.3 % of reported values)

In this dataset, three of the Cr(VI) results (approximately 0.67% of reported values) and 21 of the TOC results (approximately 6.7% of the reported values) were flagged as estimated based on the results of matrix spike recoveries outside the acceptable range for aqueous samples. Data points impacted by MS and/or MSD recoveries within this range were flagged as estimated UJ/J+,J-; individual validation memoranda address the potential for directional bias to sample results based on matrix interferences. No Cr results were qualified on the basis of MS or MSD recoveries.

Eleven pairs of Cr/Cr(VI) results were qualified as estimated (J/UJ) because the Cr(VI) result was greater than the Cr result. This can be a result of the different analytical methods used to test these two analytes. Total chromium was analyzed using an inductively coupled plasma atomic emission spectroscopy (ICP-AES) method, while Cr(VI) was analyzed using a colorimetric method. Differences can result from the analytical error associated with each method, which can become more significant at lower concentration levels. The filtration step can also introduce error, which can impact the final results. The colorimetric procedure can be prone to interferences from other sample constituents, which impacts color development; the Cr determination by ICP-AES is generally considered a more reliable measurement. There is no NJDEP GWQS for Cr(VI). Therefore, these results are used for informational purposes only. The analysis for Cr is considered accurate and was used for comparison with the NJDEP GWQS.

3.13.3 Representativeness

The representativeness of any field program is a function of the planning and procedures used to collect the samples, and the locations and density of samples collected. Sampling and preservation methods were based on established methods and SOPs outlined in the FSP-QAPP (AECOM, 2010), which are known to minimize error associated with the disturbance of environmental samples from their natural setting.

Factors to be considered in evaluating representativeness are the use of standard analytical procedures, sample preservation, and the use of the appropriate sample container. The analytical methods, preservation procedures, holding times, and containers used in this program were as specified in the FSP-QAPP.

Environmental samples are generally shipped so that the samples are maintained at a temperature of approximately 4 degrees Celsius (°C). The sample receipt temperatures were compliant and no discrepancies in sample containment were noted.

The final pH for one Cr(VI) result exceeded the acceptable limit of 1.5-2.5 and was qualified as estimated (UJ).

Eight Cr(VI) results were qualified as estimated (UJ, J-. RA) and six TOC results were qualified as estimated (J-) based on holding time exceedances.

3.13.4 Comparability

Comparability of the data in this data set was maximized by using standard methods for sampling, analysis, and data validation.

3.13.5 Completeness

Completeness is the measure of the amount of valid data obtained from a measurement system; valid data are defined as those data judged to be usable (i.e., not rejected as a result of the validation process). For this addendum, 156 individual data points were generated. One hundred percent of the reported values generated are considered usable for project decisions.

3.13.6 Sensitivity

Analytical dilutions were necessary for certain samples due to the sample matrix or elevated concentrations of target or non-target analytes. In some cases, analyses may have been performed using less than the nominal sample volume due to insufficient sample volume. The detection limits

reported by the laboratory were adjusted to reflect the actual volume used and any dilution factors. Limitations in analytical methodologies, sample dilutions, lower sample volume, or the presence of substances that interfere with detection of specific analytes can result in detection limits that exceed the GWQS. No non-detect results had detection limits greater than the GWQS.

3.13.7 Data Quality/Data Usability Conclusions

The findings of this Data Quality Assessment and Data Usability Evaluation indicate that the data reported in this addendum are sufficiently representative of actual conditions and may be used to support decisions.

Data qualifiers and reason codes were applied by the data validator to identify data limitations found in the validation process. Specific details regarding analytes and samples can be found in the individual data validation reports in **Appendix J**.

4.0 Remedial Investigation Results

This section presents analytical results for samples collected during bedrock groundwater RI activities conducted from November 2021 through February 2025 and integrates these data with results from previous bedrock investigations (AECOM, 2022, AECOM, 2024a, AECOM, 2024b). **Section 4.1** provides a narrative discussing important elements that should be considered while reviewing and evaluating the data presented in this report. **Section 4.2** provides the most current understanding of Project Area geology, hydrogeology, source areas, and nature and extent of chromium-related impacts to groundwater in the bedrock water-bearing zone. The conclusions and recommendations from the groundwater RI for the bedrock water-bearing zone are presented in **Section 4.3** and **Section 4.4**, respectively.

4.1 Data Narrative

The groundwater RI analytical data were used to assess groundwater quality within the bedrock of the Project Area by comparing results to the NJDEP GWQS in accordance with N.J.A.C. 7:9C (NJDEP, 2020). Currently, there is no GWQS for Cr(VI). A table with bedrock groundwater analytical results for samples collected from November 2021 through February 2025 is presented in **Table 4-1**. Field blanks were collected for each sampling event in accordance with the FSP-QAPP, as described in **Section 3**. Analytical results from the quality assurance samples are presented in **Table 4-2**. For reference, **Table 4-3** presents groundwater analytical results for samples collected from bedrock wells prior to November 2021 and **Table 4-4** presents groundwater analytical results for samples collected from bedrock injection wells prior to implementation of the bedrock remedy. On each of these tables, concentrations greater than the applicable NJDEP GWQS are shown in bold font and shaded gray.

The following sections discuss specific considerations regarding the data presented herein as they relate to:

- the introduction of chromium-related impacts into bedrock during drilling, and
- the movement of chromium-related impacts within bedrock during implementation of the groundwater remedy.

4.1.1 Introduction of Chromium-related Impacts into Bedrock During Drilling

Based on a review of historical (samples collected before 2018) and more recent (samples collected after 2018, during groundwater RI activities) groundwater analytical results, several bedrock wells (e.g., 114-MW4D, 114-MW16B, 114-MW52D, 114-MW66D, and 114-MW72D) exhibited elevated concentrations of Cr during initial sampling events followed by significant decreases in Cr concentrations during subsequent sampling events. This is indicative of introduction of chromium-related impacts into the bedrock during drilling activities followed by clearing of the impacts via natural groundwater flow (given sufficient time) or purging of the wells. This is best exemplified by the data collected at well 114-MW52D, where sampling of the well while it was an open borehole suggested that chromium-related impacts extended throughout the length of the well based on samples collected in February 2021 from 81 to 105 ft below top of well casing, which exhibited Cr concentrations ranging from 42,200 micrograms per liter (µg/L) to 46,500 µg/L (**Table 4-3**). However, geophysical logging indicated that flow into the borehole occurs primarily near the top of the open borehole, suggesting that lower intervals may not be impacted. Therefore, a single inflatable packer was installed in the

open borehole at 100 ft below the top of well casing to isolate the deeper portion of the borehole. The deeper interval was then purged several times and sampled in November 2021. The concentration of Cr in the sample collected from the isolated interval was 5,630 µg/L (**Table 4-1**), demonstrating significantly lower Cr levels compared to the sample collected from the open borehole at a similar depth. Subsequently, a FLUTe® multiport system was installed in this well and the individual FLUTe® ports were purged and sampled. Based on data from April 2022, the concentration of Cr in the FLUTe® ports ranged from 79.7 µg/L to 878 µg/L (**Table 4-1**), demonstrating significantly lower Cr levels compared to previous samples collected at 114-MW52D. Based on this finding, it was evident that the FLUTe® ports needed additional purging to provide groundwater samples representative of the formation. Additional purging was conducted in May and June and groundwater samples were collected in June 2022, and July 2022, and quarterly thereafter starting in June 2023. Based on data from June 2022 through June 2023, the concentration of Cr in the FLUTe® ports ranged from not detected to 66.6 µg/L, demonstrating compliance with the GWQS. Similar conditions were observed at wells 114-MW4D, 114-MW16B, 114-MW66D, and 114-MW72D. Based on these observations, the most recent groundwater analytical results from the FLUTe® port sampling program at wells 114-MW52D, 114-MW66D, and 114-MW72D should be considered representative of groundwater quality within the bedrock water-bearing zone (i.e., only samples collected after April 2022).

4.1.2 Movement of Chromium-related Impacts within Bedrock During Implementation of the Groundwater Remedy

As noted in **Section 2.2**, water levels in the bedrock water-bearing zone are affected by implementation of the groundwater remedies in the overburden and bedrock. The overburden groundwater remedy has been implemented in a phased approach since 2017. Phases I and II were completed in April 2020 and May 2024, respectively. Phase III was initiated in September 2021 and is ongoing. The overburden groundwater remedy includes reagent injection to provide a degradable source of organic carbon substrate (i.e., molasses and emulsified vegetable oil) to establish a reactive zone for in situ anaerobic bioprecipitation (ISAB) and extraction (for Phases I and II only). A total of approximately 38.8 million gallons of fluids (reagents and potable water) have been delivered into 354 injection wells across the Project Area, encompassing an area of approximately 20 acres. Extraction operations on Site 114 removed over 34 million gallons of groundwater from 45 extraction wells. The bedrock groundwater remedy consisted of reagent injection to provide a degradable source of organic carbon substrate (i.e., molasses) to establish a reactive zone for ISAB in the southwestern quadrant of Site 114. Nine injection wells were installed in Q2 2024 to provide a means for reagent delivery into the bedrock. Reagent injections were conducted from July 11, 2024 to January 3, 2025 and a total of 412,200 gallons of fluid were injected during the operational period of the remedy.

Injections into bedrock affected wells screened within the deep water-bearing zone (i.e., the basal till and Lower Deep Zone) as demonstrated by reagent breakthrough at wells 114-PZ-57T, 114-PZ-66D, 114-PZ-66T, 114-MW54C, and 114-MW61C observed during operation of the bedrock remedy (AECOM, 2025b). In addition, wells completed in bedrock responded to bedrock injections as demonstrated by reagent breakthrough at wells 114-MW57C, 114-MW76WR, 114-MW79WR, 114-MW53C, 114-PZ-66WR, 114-MW52D-Port2, 114-MW57D-Port1, 114-MW57D-Port2, 114-MW57D-Port3, and 114-MW57D-Port4 observed during operation of the bedrock remedy. Lastly, some bedrock wells demonstrated reagent breakthrough during injections into the overburden and then subsequently during injections into bedrock (114-PZ-52WR, 114-MW4D-Port3, 114-MW4D-Port4, 114-MW52D-Port1, 114-MW52D-Port3).

Based on these observations, changes in the concentrations of Cr can be expected to occur at wells completed within the bedrock in response to the injection programs implemented in the overburden and in the bedrock. During implementation of the bedrock remedy, this condition was evident at wells

114-MW52D and 114-MW57D (**Table 4-1**). At 114-MW52D, samples collected from the Flute® ports since June 2022 have consistently exhibited Cr concentrations that are less than the NJDEP GWQS of 70 µg/L, except for samples collected from the 80-83' depth interval in September and December of 2024. The elevated concentrations of Cr at this interval in September and December 2024 are attributed to movement of the Cr plume in response to bedrock injections, as suggested by the detection of Cr(VI) at the 80-83' interval in September and December 2024 and the observation that Cr(VI) was never detected at this interval previously, and the detection of elevated levels of TOC in these samples. Similarly at 114-MW57D, samples collected from the Flute® ports since June 2022 have consistently exhibited Cr concentrations that are less than the NJDEP GWQS of 70 µg/L, except for one sample collected from the 104'-108' depth interval in September 2023 and samples collected from the 87.5'-91.5', 104'-108', and 109'-113' depth intervals in December 2024. The elevated concentrations of Cr observed in December 2024 are attributed to movement of the Cr plume in response to bedrock injections, as suggested by the detection of elevated levels of TOC in these samples. These observations (i.e., detections of Cr at concentrations greater than the NJDEP GWQS of 70 µg/L in response to implementation of the bedrock remedy) should not preclude the conclusion that delineation of the Cr plume has been achieved at wells 114-MW52D and 114-MW57D for the purposes of the groundwater RI.

4.2 Conceptual Site Model for the Bedrock Water-Bearing Zone

The CSM for the Project Area integrates data collected during the groundwater RI with data from other investigations to provide the most current understanding of Project Area geology, hydrogeology, source areas, and nature and extent of chromium-related impacts to groundwater in the bedrock water-bearing zone. The CSM presents the shape of the bedrock surface, infers the contact between the diabase and the Lockatong Formation, and characterizes the structural aspects of the bedrock that affect groundwater flow and contaminant fate and transport. In addition, the extent of Cr-impacted groundwater within the bedrock water-bearing zone is delineated and the basis for the delineation is presented. This CSM was prepared in accordance with the NJDEP guidance document *Technical Guidance for Preparation and Submission of a Conceptual Site Model* (NJDEP, 2019). A comprehensive CSM integrating both overburden and bedrock was previously submitted to NJDEP and is incorporated herein by reference (AECOM, 2025a).

4.2.1 Geology and Hydrogeology

Comprehensive discussions of the Project Area geology and hydrogeology are presented in **Sections 2.1** and **2.2**, respectively. Additional discussion related to geology, hydrogeology, groundwater flow, and Cr fate and transport specific to bedrock is provided in **Sections 4.2.3** and **4.2.4**.

4.2.2 Source Areas

The sources of chromium-related impacts to bedrock groundwater in the Project Area are unconsolidated overburden soils containing CCPW-impacted groundwater. The sources of chromium-related groundwater impacts within overburden soils are described in the Groundwater RIR (AECOM, 2022) and include:

- The former chromite ore processing facility on Site 114;
- The former stockpiles of CCPW, which consisted of:
    - A stockpile of Chromite Ore Processing Residue (COPR) extending from the eastern portion of Site 114 southward onto Site 137 (north and south of Carteret Avenue); and

  - A stockpile of green-gray mud (GGM) immediately south of the former processing facility, known as the Light Toned Pile;
- Fill materials impacted with CCPW; and
- Fill materials used to abandon the former Morris Canal, which included CCPW.

The former chromite ore processing facility operated on the northwestern portion of the Project Area from approximately 1909 to 1963. Waste materials produced at the facility included CCPW. Some CCPW was reprocessed, but the majority was stockpiled on portions of the Project Area. Historical information shows that the waste stockpiles were gone by 1958, and the chromite ore processing facility structures were demolished by 1966 (AECOM, 2009). While the above-grade structures associated with the former chromite ore processing facility were demolished, some residual source materials associated with this facility remained in the subsurface, including Cr-impacted soils. Soil remedial actions consisting of source material excavation and off-site disposal have been completed. Other than the chromite ore processing operation and the related CCPW metals, there have been no other metals processing operations on Site 114.

Operations at the former chromite ore processing facility included extraction of Cr from Transvaal chromite ore to produce aluminum hydrate, sodium chromate, sodium bichromate, sodium sulfate, vanadium pentoxide, and potassium bichromate in solid form (ENSR, 2003). The liquid generated in the process (via leaching the roasted ore) contained chromate, aluminate, and vanadate among other ionic species. The ionic species in the liquid were separated, purified, dried, and packaged for sale using a variety of chemical and physical processes such as acid addition, precipitation, evaporation, filtration, crystallization, and drying. No liquid effluents (wastes) were generated from these processes. The residue remaining after the leaching of the roast (COPR) and GGM constituted the only wastes generated at the former plant.

4.2.3 Extent of Chromium Related Impacts to Bedrock Groundwater

This section describes the extent of chromium-related impacts to bedrock groundwater within the Project Area. The extent of chromium-related groundwater impacts within overburden soils is described in the Groundwater RIR (AECOM, 2022). Groundwater analytical results are compared to the NJDEP GWQS in accordance with N.J.A.C. 7:9C (NJDEP, 2020) to delineate the extent of bedrock groundwater impacts.

As per discussions held with NJDEP on April 4, 2024 and on September 12, 2024 (**Appendix A**), use of extrapolation to complete vertical delineation of the Cr plume in bedrock to the 70 µg/L NJDEP GWQS is appropriate for the purposes of the RI. Therefore, extrapolation was used in lieu of single point compliance to complete vertical delineation of the Cr plume in the vicinity of wells 114-MW72D, 114-MW76WR, and 114-MW79WR. This is consistent with N.J.A.C. 7:26E-4.3(a)4, which states that the person responsible for conducting remediation may delineate the horizontal and vertical extent of contamination to the remediation standard, ensuring that receptors are fully evaluated, in each environmental medium at a contaminated site by demonstrating compliance with a remediation standard or delineating soil and groundwater by: (1) extrapolation or modeling, based on existing data; (2) application of conceptual site models; or (3) other means for determining the extent of the contamination. If necessary, the extrapolated extent will be confirmed as part of the RA.

Figures 4-1 and **4-2** depict the horizontal extent of Cr in bedrock groundwater. Four cross-sections were developed for the western portion of the Project Area to illustrate the vertical extent of Cr in bedrock groundwater (**Figure 4-3**). Cross-section alignment locations are depicted on **Figure 2-2**. Cross-section A-A’ runs along strike of the bedding of the Lockatong Formation and cross-sections B-

B', C-C', and D-D' run perpendicular to strike of the bedding of the Lockatong Formation. The cross-sections are drawn with no vertical exaggeration and include the following:

- Current ground surface and bedrock surface along the alignments,
- Bedrock formations beneath the Project Area (Lockatong, Stockton, and diabase) and inferred contacts between the formations,
- Dip angle of the bedding and primary fractures in the Lockatong Formation,
- Select monitoring wells and remediation wells situated along the alignments,
- Thicknesses of weathered and competent bedrock observed at borings situated along the alignments,
- Direction of the prevailing horizontal groundwater flow direction,
- Direction of vertical hydraulic gradients,
- Total Cr concentrations at monitoring wells completed in weathered and competent bedrock, and
- Total Cr isoconcentration contours based on the total Cr data.

The data in **Table 4-1** includes information through December 2024. The Cr results for each sampled depth according to **Table 4-1** are shown in **Figures 4-1**, **4-2**, and **4-3**. In addition, for well 114-MW57D data from sampling conducted in June 2024 are presented as these results are representative of RI-complete conditions and demonstrate delineation was achieved at this location prior to implementation of the groundwater remedy (see discussion in **Section 4.1.2**). Based on these data, Cr concentrations greater than the 70 µg/L NJDEP GWQS for Cr were observed at wells 114-MW52D, 114-PZ-52WR, 114-MW53C, 114-MW57C, 114-MW57D (only in the December 2024 dataset), 114-MW66D, 114-PZ-66WR, 114-MW72D 114-MW76WR, 114-MW79WR.

The purpose of **Figures 4-1**, **4-2**, and **4-3** is to depict the horizontal and vertical extent of the chromium plume in bedrock. Based on these figures, the Cr plume within the bedrock water-bearing zone is limited horizontally to an area of approximately 120,000 square feet (2.75 acres) in the southwestern quadrant of Site 114 and the northern portions of Site 132 and Site 143 and extends up to 50 ft below the top of the bedrock surface (approximately 140 ft bgs). The overall extent of Cr-impacted groundwater in bedrock is within the Project Area CEA.

4.2.4 Fate and Transport of Chromium in Bedrock Groundwater

Fate and transport processes consider the source of contamination and the changes that take place in constituents and their concentrations as they move through environmental media. An extensive discussion of the fate and transport of Cr in overburden soils is presented in the Groundwater RIR (AECOM, 2022). In summary, Cr leached from source areas infiltrated into the subsurface and migrated downward through the unsaturated zone. Once within the saturated zone, migration occurred primarily along the prevailing direction of groundwater flow, either horizontally or vertically, depending on hydraulic gradients. This migration was also affected by relative soil permeability, with migration occurring via advection in higher permeability soils and diffusion-based transport occurring in lower permeability soils. When low-permeability soils were encountered, chromium-impacted groundwater spread laterally along the permeability contrast and/or diffused into the lower permeability soil interface given sufficient residence time. Diffusion of Cr into or out of lower-permeability soils also occurred over time, depending on concentration gradients or hydraulic conditions. The presence of natural (meadow mat) and anthropogenic (MGP residuals) organic matter

within soils may have impacted the mobility of Cr in groundwater by acting as sources of electron donor to induce anoxic groundwater conditions.

The only portion of bedrock groundwater that exhibits chromium-related impacts is situated in the southwestern quadrant of Site 114 and northern portions of Site 132 and Site 143 (**Figures 4-1** and **4-2**). This is the area where the concentrated stockpile of GGM (the Light Toned Pile) was formerly situated and is the area of the bedrock valley identified on Site 114 (**Figure 2-2**). Over time, the restricted groundwater flow regime within the bedrock valley allowed for vertical migration of Cr-impacted groundwater through the deep water-bearing zone into bedrock, as evidenced by the elevated Cr concentrations initially observed at several bedrock wells. Migration of groundwater impacts from overburden into the bedrock in this area occurred along downward vertical hydraulic gradients[4], such as in the vicinity of wells 114-MW57D and 114-MW66D (**Table 2-2**). Cr-impacted groundwater also entered the bedrock horizontally in areas where the elevation of the bedrock fluctuates significantly, thereby placing bedrock in lateral contact with adjacent overburden water-bearing zones, such as in the vicinity of wells 114-PZ52WR, 114-MW53C, 114-MW57D, 114-PZ66WR, 114-MW66D, 114-MW77WR, and 114-MW79WR (**Figure 2-2**).

Flow of Cr-impacted groundwater within bedrock in the Project Area follows the structural elements of the rock. In the weathered bedrock, migration occurs via the interconnected portions of the weathered bedrock. Within competent bedrock, migration occurs along bedding plane partings and interconnected fractures, cracks, or voids in the rock, primarily along bedding plane fractures and with the prevailing direction of groundwater flow parallel to bedding strike. A secondary migration component occurs along bedding dip; however, down-dip migration along bedding or fractures is limited by decreasing permeability with depth and the presence of the diabase along the western edge of the Project Area. Migration does not occur in the rock matrix due to its low effective porosity.

In the southwestern quadrant of Site 114, the prevailing directions of groundwater flow within the competent portion of the Lockatong Formation are to the south/southwest along bedding strike and to the west down bedding dip due to the anisotropy in the bedrock (**Appendix E**). Groundwater flow in the weathered portion of the Lockatong Formation is controlled by the shape of the bedrock valley in the southwestern quadrant of Site 114, with the dominant flow direction within the valley from northwest to southeast (i.e., from 114-MW79WR to 114-MW57C) (**Figure 2-5**). East of the bedrock valley, the direction of groundwater flow in the weathered rock of the Lockatong and Stockton formations is to the east-southeast.

Based on hydraulic testing data, the estimated values of hydraulic conductivity in the weathered Lockatong Formation in the vicinity of wells 114-MW53C and 114-MW57C are on the order of tens of feet per day (**Appendix D**). For competent portion of the Lockatong Formation, permeability of the bedding and fractures in the vicinity of wells 114-MW52D, 114-MW57D, and 114-MW66D is very low, averaging approximately 0.03 ft per day (**Appendix D**). This is supported by the results of borehole geophysical logging, which recorded flows ranging from 0.01 to 0.05 gpm within the open borehole intervals of logged wells. Based on this information, groundwater flow within competent portions of the Lockatong Formation occurs at very slow rates. The generally low hydraulic conductivity of the bedrock and the lack of permeability in the rock matrix limit the migration of Cr-impacted groundwater within bedrock, with the extent of the chromium plume remaining localized despite the amount of time

[4] Based on the groundwater elevation data presented on Table 3-2, vertical hydraulic gradients are variable over time in this area.

that has passed since the CCPW waste stockpiles were removed (1958) and the chromate ore processing facility was decommissioned (1966); i.e., demonstrating plume stability.

4.3 Variance from 7:26E-4.3 (a) (4)

In accordance with N.J.A.C 7:26C-1.2(a) General Requirements, this section summarizes the rationale for a variance from the technical requirement at 7:26E-4.3 (a) (4)[5] to delineate the horizontal extent of Cr in groundwater in the competent portion of the Lockatong Formation south/southwest of well 114-MW72D via clean point delineation. Groundwater analytical results from well 114-MW72D indicate variable low-level concentrations of Cr above and below the 70 µg/L NJDEP GWQS, with concentrations for samples collected from June 2022 to December 2024 ranging from 12.8 µg/L to 517 µg/L (**Table 4-1**). Delineation south/southwest of 114-MW72D is necessary because the primary direction of groundwater flow within the competent portion of the Lockatong Formation is to the south/southwest along bedding strike; therefore, delineation must be demonstrated in downgradient areas.

Two competent bedrock wells (114-MW76D and 114-MW81D) were installed to delineate the chromium plume downgradient of 114-MW72D. As per NJDEP, to be viable delineation points, the wells downgradient of 114-MW72D would need to meet two requirements:

- exhibit Cr concentrations that are less than the 70 µg/L NJDEP GWQS for Cr, and
- exhibit hydraulic connection with well 114-MW72D.

Both 114-MW76D and 114-MW81D exhibit Cr concentrations that are less than the 70 µg/L NJDEP GWQS for Cr (**Table 4-1**); however, aquifer testing suggests neither well is hydraulically connected to 114-MW72D (**Appendix E**). Therefore, a variance is requested to complete the RI for the bedrock water-bearing zone. The potential need for this variance was discussed with NJDEP during a meeting held on September 4, 2024. During this meeting, the Department indicated that the request would be approved if installation of 114-MW81D (the second well installed downgradient of 114-MW72D) did not provide a viable delineation point as per the requirements specified above, as documented in the July 28, 2025 email correspondence from the Department which is included in **Appendix A**.

This variance request is justified for the groundwater RI because the data collected from the bedrock water-bearing zone provide verifiable and reproducible results which achieve the objectives of the cited technical requirements as they provide sufficient information to know the nature and extent of contamination within bedrock in the Project Area. Furthermore, based on the findings of the receptor evaluation for the Project Area, there are no receptors related to the bedrock groundwater COCs (AECOM, 2023). Continued groundwater monitoring will be conducted to demonstrate plume stability and, ultimately, compliance with the NJDEP GWQS for the bedrock water-bearing zone downgradient of 114-MW72D. PPG expects that the requirement to delineate the horizontal extent of Cr in

[5] On October 21, 2024, the NJDEP proposed to amend portions of the Technical Requirements for Site Remediation (N.J.A.C. 7:26E), among other Rules. As part of these amendments the NJDEP is proposing to modify N.J.A.C. 7:26E-4.3(a)4 and allow for the use of "(1) extrapolation or modeling, based on existing data; (2) application of conceptual site models; or (3) other means" for determining the extent of contamination. It is expected that this modification will be incorporated into Rule. While a Variance is required at this time, once the proposed amendment is incorporated into Rule, the Variance to N.J.A.C. 7:26E-4.3(a)4 would not be required.

groundwater in bedrock downgradient of 114-MW72D will be achieved prior to applying for an Active Category Groundwater Remedial Action Permit (Active Category RAP-GW).

4.4 Conclusions

The groundwater RI was implemented using a phased approach and was conducted in parallel with ongoing soil and groundwater remediation activities within the Project Area. The primary objective of this groundwater RIR addendum is to delineate the horizontal and vertical extent of Cr-related impacts to the bedrock water-bearing zone. Constituents of concern in groundwater for the Project Area include Cr(VI) and the CCPW metals (antimony, chromium, nickel, thallium, and vanadium). Delineation of CCPW metals other than chromium is not required for the bedrock water-bearing zone as antimony, nickel, thallium, and vanadium were not detected at concentrations greater than the NJDEP GWQS in bedrock groundwater (AECOM, 2022).

Based on the findings of the Groundwater RIR (AECOM, 2022), the findings of the bedrock water-bearing zone investigations presented herein, the variance request presented in **Section 4.3**, and as per recent discussions with NJDEP related to the groundwater RI, the groundwater RI is complete as the following conditions have been met:

- there is sufficient information to know the nature and extent of contamination both on site and off site,
- there is sufficient information to know that receptors have not been impacted by the discharge being remediated, and
- collection of additional data or information is not needed to confirm that a Remedial Action (RA) is needed or to evaluate possible RAs.

4.5 Recommendations

Based on the findings of investigations conducted to date, and on recent discussions with NJDEP, no further investigation of bedrock groundwater is needed for the purposes of the RI in the Project Area.

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Tables

Table 2-1
Top of Bedrock Elevation Data
Addendum to Groundwater Remedial Investigation Report
Garfield Avenue Group Sites
PPG, Jersey City, New Jersey

Location	Easting (ft NAD83)	Northing (ft NAD83)	Ground Surface Elevation (ft NAVD88)	Depth to Bedrock (ft bgs)	Bedrock Elevation[2] (ft NAVD88)	Notes	Rock Type	Thickness of Weathered Bedrock[3] (ft)
114-BSB-01	611145.10	683901.80	14.7	63	-48.3	Sonic, drilled 5 ft into bedrock	Igneous - Diabase	0
114-BSB-02	611029.00	683757.30	13.5	61.5	-48.0	Sonic, drilled 11.5 ft into bedrock	Igneous - Diabase	5
114-BSB-03	611026.80	683530.40	13.9	76	-62.1	Sonic, drilled 5 ft into bedrock	Sedimentary	0
114-MW15A	610888.50	683851.50	13.44	6	7.4	HSA/Mud rotary, refusal	Indeterminate	--
114-MW16B	610610.20	683366.40	16.1	19	-2.9	HSA/Air rotary, drilled 16.5 ft into bedrock	Igneous - Diabase	--
114-MW19C	611263.30	682737.30	10.94	101	-90.1	HSA/Mud rotary, refusal with observed weathered bedrock	Indeterminate	--
114-MW20C	611555.60	683020.20	12.4	84	-71.6	Mud rotary, refusal	Indeterminate	--
114-MW22B	610693.50	683254.90	12.6	35.5	-22.9	HSA/Mud rotary, refusal	Sedimentary	--
114-MW25C	611795.80	683600.40	10.4	55	-44.6	Sonic, drilled 3 ft into bedrock	Indeterminate	>/=3
114-MW45C	611411.80	683675.00	11.5	71	-59.5	Sonic, drilled 5 ft into bedrock	Sedimentary - Lockatong	0
114-MW48C	611163.80	683919.40	15	58	-43.0	Sonic, drilled 6 ft into bedrock	Igneous - Diabase	0
114-MW49C	611378.10	683872.00	14.6	70	-55.4	Sonic, drilled 5 ft into bedrock	Sedimentary - Lockatong	>/=5
114-MW4D	610821.80	683258.90	12.91	87	-74.1	Mud and air rotary, drilled 20 ft into bedrock. Sonic, extended boring additional 18 ft into bedrock.	Igneous - Diabase, Sedimentary - Lockatong	33
114-MW50C	611043.10	683769.80	13.4	62	-48.6	Sonic, drilled 5 ft into bedrock	Igneous - Diabase	0
114-MW51C	611633.30	683637.40	12.2	77	-64.8	Sonic, drilled 5 ft into bedrock	Sedimentary - Stockton	0
114-MW52C	611034.70	683527.70	14	73	-59.0	Sonic, drilled 5 ft into bedrock	Sedimentary - Lockatong	1
114-MW52D	611077.50	683544.40	13.9	68	-54.1	Sonic & rock core, drilled 37 ft into bedrock	Sedimentary - Lockatong	2
114-MW53C	611157.60	683435.60	13.9	45.5	-31.6	Sonic, drilled 9.5 ft into bedrock	Sedimentary - Lockatong	2.5
114-MW54C	611214.90	683276.50	10.8	77	-66.2	Sonic, drilled 7 ft into bedrock	Sedimentary - Stockton	0
114-MW55C	611439.10	683519.80	11.1	68	-56.9	Sonic, drilled 7 ft into bedrock	Sedimentary - Stockton	2
114-MW56C	610934.80	683324.40	14	72	-58.0	Sonic, drilled 8 ft into bedrock	Sedimentary - Lockatong	0
114-MW57C	610949.90	683210.40	12.9	68	-55.1	Sonic, drilled 7 ft into bedrock	Sedimentary - Lockatong	4.5
114-MW57D	610903.90	683215.50	12.7	67	-54.3	Sonic & rock core, drilled 45.5 ft into bedrock	Sedimentary - Lockatong	0
114-MW58C	611371.20	683296.60	11.2	74	-62.8	Sonic, drilled 6 ft into bedrock	Sedimentary - Stockton	3.5
114-MW58C-R	611383.10	683303.40	10.8	77	-66.2	Sonic, drilled 13 ft into bedrock	Sedimentary - Stockton/Lockatong	10
114-MW59C	611255.20	683079.60	12.1	92.5	-80.4	Sonic, drilled 7.5 ft into bedrock	Sedimentary - Stockton	0
114-MW60C	611340.10	682895.50	11.0	119.5	-108.5	Sonic, drilled 5.5 ft into bedrock	Sedimentary - Stockton	>/=5.5
114-MW60C-R	611335.50	682857.60	10.6	114	-103.4	Sonic, drilled 11 ft into bedrock	Sedimentary - Stockton	>/=6
114-MW61C	610879.40	683478.60	14.0	63	-49.0	Sonic, drilled 12 ft into bedrock	Igneous - Diabase	11
114-MW61D	610873.20	683470.02	14.4	63	-48.6	Sonic & rock core, drilled 46 ft into bedrock. Sonic, extended boring additional 26 ft into bedrock.	Igneous - Diabase, Sedimentary - Lockatong	46
114-MW62C	611139.00	683749.80	13.0	71	-58.0	Sonic, drilled 9 ft into bedrock	Sedimentary - Lockatong	2
114-MW63C	611437.00	683762.10	15.5	66	-50.5	Sonic, drilled 6 ft into bedrock	Sedimentary - Lockatong	0
114-MW64C	611381.90	683046.00	10.8	93	-82.2	Sonic, drilled 7 ft into bedrock	Sedimentary - Stockton	3
114-MW65C	611291.70	683583.00	12.4	66	-53.6	Sonic, drilled 5 ft into bedrock	Sedimentary - Lockatong	0
114-MW66D	610941.20	683423.40	14.1	77	-62.9	Sonic & rock core, drilled 38 ft into bedrock. Sonic, extended boring additional 25 ft into bedrock.	Sedimentary - Lockatong	3
114-MW67C	611022.24	683616.07	13.2	83	-69.8	Sonic, drilled 2 ft into bedrock	Sedimentary - Lockatong	>/=2
114-MW68C	610851.13	683321.17	14.1	73	-58.9	Sonic, drilled 7 ft into bedrock	Igneous - Diabase	4
114-MW69C	611145.23	683213.16	10.8	68	-57.2	Sonic, drilled 7 ft into bedrock	Sedimentary - Stockton	0
114-MW6D	611298.40	683683.30	12.66	77	-64.3	Mud and air rotary, drilled 34 ft into bedrock	Sedimentary - Lockatong	--
114-MW71D	610955.05	683613.58	14.2	66	-51.8	Sonic, drilled 75 ft into bedrock	Igneous - Diabase, Sedimentary - Lockatong	>/=42
114-MW72D	610826.97	683100.23	12.3	85	-72.7	Sonic, drilled 40 ft into bedrock	Sedimentary - Lockatong	10
114-MW73D	610916.60	683379.70	13.9	81	-67.1	Sonic, drilled 37 ft into bedrock	Sedimentary - Lockatong	4
114-MW74D	610897.50	683447.60	14.2	76	-61.8	Sonic, drilled 56 ft into bedrock	Sedimentary - Lockatong	8
114-MW75WR	611142.90	682659.50	11.5	110	-98.5	Sonic, drilled 20 ft into bedrock	Sedimentary - Stockton/Lockatong	12
114-MW76D	610739.00	682957.00	12.0	69	-57.0	Sonic, drilled 55 ft into bedrock	Igneous - Diabase, Sedimentary - Lockatong	1
114-MW76WR	611052.10	683389.80	14.0	54	-40.0	Sonic, drilled 11 ft into bedrock	Sedimentary - Lockatong	0.5
114-MW77WR	611023.40	683307.50	14.2	54	-39.8	Sonic, drilled 11 ft into bedrock	Sedimentary - Lockatong	1
114-MW78WR	610979.70	683145.30	12.5	73	-60.5	Sonic, drilled 11 ft into bedrock	Sedimentary - Lockatong	1
114-MW79WR	610899.40	683455.90	14.2	70	-55.8	Sonic, drilled 11 ft into bedrock	Igneous - Diabase	>/=11
114-MW7D	611189.20	683329.10	12.44	76.5	-64.1	Air rotary, drilled 13.5 ft into bedrock	Indeterminate	--
114-MW80WR	611129.30	683132.30	11.2	83	-71.8	Sonic, drilled 11 ft into bedrock	Sedimentary - Stockton	2
114-MW81D	610795.90	683046.50	12.2	71.5	-59.3	Sonic, drilled 53.5 ft into bedrock	Sedimentary - Lockatong	28.5
114-PMW-01T	610921.40	683329.90	14.0	73	-59.0	Sonic, drilled 5 ft into bedrock	Sedimentary - Lockatong	>/=5
114-PMW-02T	610940.50	683338.20	14.1	72	-57.9	Sonic, drilled 6 ft into bedrock	Sedimentary - Lockatong	>/=6
114-PMW-03T	611274.20	683581.40	13.8	69.5	-55.7	Sonic, drilled 5.5 ft into bedrock	Sedimentary - Lockatong	2.5
114-PMW-04T	611302.20	683596.60	12.8	73	-60.2	Sonic, drilled 5 ft into bedrock	Sedimentary - Lockatong	2
114-PW-01T	610919.80	683324.70	13.9	75	-61.1	Sonic, drilled 5 ft into bedrock	Sedimentary - Lockatong	>/=5
114-PW-01WR	610908.20	683443.70	13.9	80	-66.1	Sonic, drilled 15 ft into bedrock	Sedimentary - Lockatong	10
114-PW-02T	610932.70	683339.40	14.0	71.5	-57.5	Sonic, drilled 4.5 ft into bedrock	Sedimentary - Lockatong	3
114-PW-02WR	610933.80	683486.30	14.9	82	-67.1	Sonic, drilled 11 ft into bedrock	Sedimentary - Lockatong	2
114-PW-03T	611276.50	683586.30	13.6	69	-55.4	Sonic, drilled 5 ft into bedrock	Sedimentary - Lockatong	1
114-PW-03WR	610958.50	683529.80	14.9	80	-65.1	Sonic, drilled 11 ft into bedrock	Sedimentary - Lockatong	1
114-PW-04T	611297.90	683599.50	13.3	75	-61.7	Sonic, drilled 5 ft into bedrock	Sedimentary - Lockatong	>/=5
114-PW-04WR	611148.40	683452.90	14.0	42	-28.0	Sonic, drilled 12 ft into bedrock	Sedimentary - Lockatong	2
114-PW-05WR	610886.60	683398.90	14.0	80	-66.0	Sonic, drilled 11 ft into bedrock	Sedimentary - Lockatong	6
114-PW-06WR	610895.70	683311.60	14.0	78	-64.0	Sonic, drilled 11 ft into bedrock	Sedimentary - Lockatong	1

Table 2-1
Top of Bedrock Elevation Data
Addendum to Groundwater Remedial Investigation Report
Garfield Avenue Group Sites
PPG, Jersey City, New Jersey

Location	Easting (ft NAD83)	Northing (ft NAD83)	Ground Surface Elevation (ft NAVD88)	Depth to Bedrock (ft bgs)	Bedrock Elevation[2] (ft NAVD88)	Notes	Rock Type	Thickness of Weathered Bedrock[3] (ft)
114-PW-07WR	610923.20	683228.80	14.8	66	-51.2	Sonic, drilled 11 ft into bedrock	Sedimentary - Lockatong	6
114-PW-09WR	611100.40	683183.20	12.4	70	-57.6	Sonic, drilled 11 ft into bedrock	Sedimentary - Stockton	3
114-PW-10WR	611132.30	683261.00	12.6	75	-62.4	Sonic, drilled 11 ft into bedrock	Sedimentary - Stockton	0.5
114-PZ52	611062.95	683542.02	13.9	70	-56.1	Sonic, drilled 5 ft into bedrock	Sedimentary - Lockatong	4
114-PZ57	610922.52	683223.43	14.4	71	-56.6	Sonic, drilled 4 ft into bedrock	Sedimentary - Lockatong	3
114-PZ66	610929.92	683430.17	13.9	80	-66.1	Sonic, drilled 5 ft into bedrock	Sedimentary - Lockatong	4
132-MW2B	610555.00	682811.80	14.6	31	-16.4	HSA/Mud rotary, refusal	Indeterminate	--
132-P3-IRM-008I-B	610869.40	682916.70	13.39	88	-74.6	Sonic, drilled 2 ft into bedrock	Igneous - Diabase	--
132-P3-IRM-009I-B	610934.30	682998.80	12.31	78	-65.7	Sonic, drilled 2 ft into bedrock	Sedimentary - Lockatong	--
132-P3-MW001D	610786.20	682809.00	15.15	88	-72.9	Sonic, drilled 12 ft into bedrock	Igneous - Diabase, Sedimentary - Lockatong	--
133-MW1C	610670.80	682283.10	11.86	77	-65.1	HSA/Mud rotary, refusal	Indeterminate	--
133-MW2C	610792.70	682151.10	10.31	99	-88.7	HSA/Mud rotary, refusal	Indeterminate	--
135-MW1C	610951.30	682131.10	9.90	103	-93.1	HSA/Mud rotary, refusal	Indeterminate	--
137-MW1C	611036.70	683020.30	13.47	73	-59.5	HSA/Mud rotary, refusal	Indeterminate	--
137-MW2C	610918.50	682801.10	14.38	85	-70.6	HSA, refusal	Indeterminate	--
143-P3-IRM-001I	610711.70	683190.50	12.14	48	-35.9	Sonic, drilled 2 ft into bedrock	Sedimentary - Lockatong	--
143-P3-IRM-004I-B	610764.80	683098.20	12.12	61	-48.9	Sonic, drilled 4 ft into bedrock	Igneous - Diabase	--
143-P3-MW001I	610679.30	683098.60	11.96	48	-36.0	Sonic, drilled 2 ft into bedrock	Igneous - Diabase	--
199-P3-IRM-001I-B	611236.90	683939.90	16.6	58	-41.4	Sonic, drilled 2 ft into bedrock	Sedimentary - Lockatong	--
199-P3-IRM-003I-B	611345.90	683900.30	15.8	59	-43.2	Sonic, drilled 1ft into bedrock	Sedimentary - Lockatong	--
199-P3-IRM-004D	611373.00	683887.10	15.7	67	-51.3	Sonic, drilled 3 ft into bedrock	Sedimentary - Lockatong	--
AE-2	611239.05	683932.09	15.063	63.3	-48.2	HSA, cored approximately 9 ft into bedrock	Igneous - Diabase	>/=8.75
CAR-P3-IRM-009I	610946.70	683123.40	11.88	67	-55.1	Sonic, drilled 3 ft into bedrock	Sedimentary - Lockatong	--
CAR-P3-IRM-014I	611081.00	683053.00	11.83	79	-67.2	Sonic, drilled 1 ft into bedrock	Indeterminate	--
CAR-P3-MW001D	610825.80	683188.20	12.03	67	-55.0	Sonic, drilled 3 ft into bedrock	Sedimentary - Lockatong	--
CAR-P3-MW003D	611057.60	683087.30	11.74	70	-58.3	Sonic, drilled 2.5 ft into bedrock	Indeterminate	--
EF-37	610679.53	683445.78	12.93	16.5	-3.6	Geoprobe, refusal on observed weathered bedrock	Igneous - Diabase	--
EW-P3-MW001I-B	611561.10	682577.10	10.45	74	-63.6	Sonic, drilled 1 ft into bedrock	Sedimentary	0
FS-P3-IRM-001I	611669.30	683644.40	9.81	67	-57.2	Sonic, drilled 3 ft into bedrock	Indeterminate	--
FS-P3-IRM-003I	611739.10	683585.30	9.84	58	-48.2	Sonic, drilled 2 ft into bedrock	Indeterminate	--
GT-10A	611023.04	683257.89	13.606	68	-54.4	HSA, refusal	Indeterminate	--
GT-14	610731.51	683345.66	11.327	34	-22.7	HSA/Mud rotary, drilled 11 ft into bedrock	Indeterminate	--
GT-15	610798.01	683454.83	11.156	50	-38.8	HSA, refusal with observed weathered bedrock	Indeterminate	--
GT-9C	611129.51	683317.36	13.476	67	-53.5	HSA, refusal on weathered bedrock	Indeterminate	>/=1
HAL-P3-IRM-006I-B	611543.40	683053.80	11.87	84	-72.1	Sonic, drilled 1 ft into bedrock	Sedimentary - Stockton	--
HSTD-P3-IRM-005I-B	611576.20	682948.40	12.49	66	-53.5	Sonic, drilled 4 ft into bedrock	Sedimentary - Stockton	--
MW-4F	611637.00	683326.50	12.88	77	-64.1	HSA/Mud rotary, refusal on bedrock	Indeterminate	--
MW-7F	611837.52	682964.08	11.05	49	-38.0	HSA/Mud rotary, drilled 7 ft into bedrock then cored 5 ft into bedrock	Sedimentary	>/=10
N15	611134.65	683561.10	13.61	53	-39.4	Sonic, drilled 3 ft into bedrock	Sedimentary - Lockatong	--
S7	610973.37	683303.01	14.12	60.5	-46.4	Sonic, drilled 2 ft into bedrock	Sedimentary - Lockatong	--
SB-23	611381.08	683099.76	15.05	88	-73.0	HSA/roller bit, drilled 3 ft into bedrock	Sedimentary	--
SB-24A	611600.92	683591.80	12.75	80	-67.3	No boring log available. Data taken from Table 5-3 of PSEG 2007 RIR[1]	Indeterminate	--
SB-25	611476.89	682936.23	11.67	92.5	-80.8	HSA/roller bit, drilled 2.5 ft into bedrock	Sedimentary	--
SB-26	611718.13	683020.72	14.83	72	-57.2	HSA/roller bit, drilled 6 ft into bedrock	Sedimentary	--
SB-30	611570.48	682885.34	11.31	77	-65.7	HSA/mud rotary/roller bit, drilled 1 ft into bedrock	Sedimentary	--
SB-33	612010.49	683282.29	14.92	56.5	-41.6	HSA/mud rotary/roller bit, drilled 3 ft into bedrock	Sedimentary	--
SB-34	611847.36	683458.68	12.05	55	-43.0	HSA, refusal	Indeterminate	--
SB-57	611376.60	683257.40	12.18	73.5	-61.3	No boring log available. Data taken from Table 5-3 of PSEG 2007 RIR[1]	Indeterminate	--
SB-58	611677.40	683213.90	14.15	70	-55.9	No boring log available. Data taken from Table 5-3 of PSEG 2007 RIR[1]	Indeterminate	--

Notes:
[1]PSEG, 2007. *Remedial Investigation Report - Former Halladay Street Gas Works* , Jersey City, New Jersey, December 2007.
[2]Blue shading denotes locations at which bedrock elevation is inferred based on refusal encountered during drilling.
[3]Wells 114-MW61D, 114-MW71D, and 114-MW81D are located near the contact between the Lockatong Formation and the diabase where additional weathering of the rock occurred due to thermal fracturing.
-- indicates that thickness of weathered bedrock could not be determined from boring log
bgs - below ground surface
ft - feet
HSA - Hollow stem auger
NAD83 - North American Datum of 1983
NAVD88 - North American Vertical Datum of 1988
PSEG - Public Service Electric and Gas Company
RIR - Remedial investigation report

Table 2-2
Groundwater Elevation Gauging Data - December 2021 and March 2022
Addendum to Groundwater Remedial Investigation Report
Garfield Avenue Group Sites
PPG, Jersey City, New Jersey

Well ID	Screened Zone	Screen Reference	Top of Screen (feet below reference)	Bottom of Screen (feet below reference)	Top of Screen Elevation (feet)	Bottom of Screen Elevation (feet)	Screen Midpoint Elevation (feet)	Screen Reference Elevation (feet)	Water Level Reference Point	Water Level Reference Point Elevation[1] (Riser or Inner Casing) (feet)	Groundwater Gauging Data		Is Screen Saturated?	Saturated Screen Midpoint Elevation (feet)	Distance Between Saturated Screen Midpoints (feet)	Vertical Hydraulic Gradient[2]	Vertical Groundwater Flow Direction
											DTW (feet btc)	Groundwater Elevation (feet)					
December 13, 2021																	
114-MW16A	Shallow	Ground Surface	2	17	14.1	-0.9	6.60	16.10	Top of PVC	15.81	7.26	8.55	N	3.825	21.30	-0.0394	Shallow to BR
114-MW16B	BR - Diabase	Top of Casing	30.5	35.5	-14.97	-19.97	-17.47	15.53	Top of PVC	15.53	7.82	7.71	Y	-17.47	-	-	-
114-MW45C	Basal Till	Ground Surface	67	71	-55.50	-59.50	-57.50	11.50	Top of PVC	13.22	4.84	8.38	Y	-57.5	28.35	0.1432	BR to Basal Till
114-MW6D	BR (open borehole) - Lockatong	Top of Casing	86	111	-73.35	-98.35	-85.85	12.65	Top of Casing	12.69	0.25	12.44	Y	-85.85	-	-	-
114-P1B-MW103S	Shallow	Ground Surface	7	17	7.6	-2.4	2.6	14.60	Top of PVC	14.24	4.48	9.76	Y	2.6	42.60	-0.0347	Shallow to Deep
114-P1B-MW103D	Deep	Ground Surface	51	56	-37.5	-42.5	-40	13.50	Top of PVC	16.73	8.45	8.28	Y	-40	-	-	-
114-MW61C	Basal Till/Weathered BR	Ground Surface	62.5	67.5	-48.50	-53.50	-51.00	14.00	Top of PVC	16.67	9.69	6.98	Y	-51	57.37	NC	-
114-MW61D	BR - Diabase, Lockatong	Ground Surface	110	135	-95.87	-120.87	-108.37	14.13	Top of PVC	17.12	17.02	NC[3]	Y	-108.37	-	-	-
114-PZ-52I	Intermediate	Ground Surface	28	33	-14.10	-19.10	-16.6	13.90	Top of PVC	15.99	8.24	7.75	Y	-16.6	12	-0.0883	Intermediate to Deep
114-PZ-52D	Deep	Ground Surface	40	45	-26.10	-31.10	-28.6	13.90	Top of PVC	15.89	9.20	6.69	Y	-28.6	27.9	0.0194	Basal Till to Deep
114-MW52C	Basal Till	Ground Surface	68	73	-54.00	-59.00	-56.50	14.00	Top of PVC	15.85	8.62	7.23	Y	-56.5	1.6	NC	-
114-PZ-52WR	Weathered BR - Lockatong	Ground Surface	70	74	-56.10	-60.10	-58.1	13.90	Top of PVC	15.93	14.03	NC[3]	Y	-58.1	20.5	NC	-
114-MW52D	BR (open borehole) - Lockatong	Ground surface	80	105	-66.10	-91.10	-78.60	13.90	Top of Casing	15.64	15.92	NC[3]	Y	-78.6	-	-	-
114-PZ-57I	Intermediate	Ground Surface	26	31	-11.60	-16.60	-14.1	14.40	Top of PVC	16.13	8.17	7.96	Y	-14.1	27	0.0393	Deep to Intermediate
114-PZ-57D	Deep	Ground Surface	53	58	-38.60	-43.60	-41.1	14.40	Top of PVC	16.39	7.37	9.02	Y	-41.1	10	-0.0310	Deep to Basal Till
114-PZ-57T	Basal Till	Ground Surface	63	68	-48.60	-53.60	-51.1	14.40	Top of PVC	16.42	7.71	8.71	Y	-51.1	5.25	-0.0057	Basal Till to Weathered BR
114-MW57C	Weathered BR - Lockatong	Ground Surface	68.5	70	-55.60	-57.10	-56.35	12.90	Top of PVC	14.55	5.87	8.68	Y	-56.35	29.7	-0.0539	Weathered BR to BR
114-MW57D	BR (open borehole) - Lockatong	Ground Surface	85	112.5	-72.30	-99.80	-86.05	12.70	Top of Casing	14.70	7.62	7.08	Y	-86.05	-	-	-
114-PZ-66I	Intermediate	Ground Surface	35	40	-21.10	-26.10	-23.6	13.90	Top of PVC	16.19	8.28	7.91	Y	-23.6	8.5	-0.0365	Intermediate to Deep
114-PZ-66D	Deep	Ground Surface	45	47	-31.10	-33.10	-32.1	13.90	Top of PVC	16.15	8.55	7.60	Y	-32.1	21.5	-0.0433	Deep to Basal Till
114-PZ-66T	Basal Till	Ground Surface	65	70	-51.10	-56.10	-53.6	13.90	Top of PVC	16.17	9.50	6.67	Y	-53.6	14.5	-0.0041	Basal Till to Weathered BR
114-PZ-66WR	Weathered BR - Lockatong	Ground Surface	80	84	-66.10	-70.10	-68.1	13.90	Top of PVC	15.85	9.24	6.61	Y	-68.1	33	0.0179	BR to Weathered BR
114-MW66D	BR (open borehole) - Lockatong	Ground Surface	90	140	-76.10	-126.10	-101.1	13.90	Top of Casing	16.20	9.00	7.20	Y	-101.1	-	-	-
114-MW68C	Deep	Ground Surface	50	56	-35.9	-41.9	-38.9	14.10	Top of PVC	15.75	7.74	8.01	Y	-38.9	16.60	-0.0301	Deep to Basal Till
114-MW56C	Basal Till	Ground Surface	67	72	-53.00	-58.00	-55.50	14.00	Top of PVC	16.04	8.53	7.51	Y	-55.5	-	-	-
114-MW54C	Basal Till	Ground Surface	72	77	-61.20	-66.20	-63.70	10.80	Top of PVC	12.71	5.44	7.27	Y	-63.7	11.38	0.1344	BR to Basal TIll
114-MW7D	BR - Indeterminate	Top of Casing	85	90	-72.58	-77.58	-75.08	12.42	Top of PVC	11.92	3.12	8.80	Y	-75.08	-	-	-
114-MW4D	BR (open borehole) - Diabase, Lockatong	Ground Surface	87	125	-73.90	-111.90	-92.9	13.10	Top of Casing	15.77	8.53	7.24	-	-	-	-	-
114-MW67C	Deep	Ground Surface	50	56	-36.7	-42.7	-39.7	13.30	Top of PVC	14.67	7.03	7.64	-	-	-	-	-
114-MW71D	BR (open borehole) - Diabase, Lockatong	Ground Surface	115	141	-100.80	-126.80	-113.8	14.20	Top of Casing	15.96	8.40	7.56	-	-	-	-	-
114-MW72D	BR (open borehole) - Lockatong	Ground Surface	100	125	-87.70	-112.70	-100.2	12.30	Top of Casing	14.41	5.02	9.39	-	-	-	-	-

Table 2-2
Groundwater Elevation Gauging Data - December 2021 and March 2022
Addendum to Groundwater Remedial Investigation Report
Garfield Avenue Group Sites
PPG, Jersey City, New Jersey

Well ID	Screened Zone	Screen Reference	Top of Screen (feet below reference)	Bottom of Screen (feet below reference)	Top of Screen Elevation (feet)	Bottom of Screen Elevation (feet)	Screen Midpoint Elevation (feet)	Screen Reference Elevation (feet)	Water Level Reference Point	Water Level Reference Point Elevation[1] (Riser or Inner Casing) (feet)	Groundwater Gauging Data		Is Screen Saturated?	Saturated Screen Midpoint Elevation (feet)	Distance Between Saturated Screen Midpoints (feet)	Vertical Hydraulic Gradient[2]	Vertical Groundwater Flow Direction
											DTW (feet btc)	Groundwater Elevation (feet)					
March 21, 2022																	
114-MW61C	Basal Till/Weathered BR	Ground Surface	62.5	67.5	-48.50	-53.50	-51.00	14.00	Top of PVC	16.67	11.32	5.35	Y	-51	57.37	0.0012	BR to Basal Till/Weathered BR
114-MW61D	BR - Diabase, Lockatong	Ground Surface	110	135	-95.87	-120.87	-108.37	14.13	Top of PVC	17.12	11.70	5.42	Y	-108.37	-	-	-
114-PZ-52I	Intermediate	Ground Surface	28	33	-14.10	-19.10	-16.6	13.90	Top of PVC	15.99	10.78	5.21	Y	-16.6	12	-0.0217	Intermediate to Deep
114-PZ-52D	Deep	Ground Surface	40	45	-26.10	-31.10	-28.6	13.90	Top of PVC	15.89	10.94	4.95	Y	-28.6	27.9	0.0100	Basal Till to Deep
114-MW52C	Basal Till	Ground Surface	68	73	-54.00	-59.00	-56.50	14.00	Top of PVC	15.85	10.62	5.23	Y	-56.5	1.6	-0.1125	Basal Till to Weathered BR
114-PZ-52WR	Weathered BR - Lockatong	Ground Surface	70	74	-56.10	-60.10	-58.1	13.90	Top of PVC	15.93	10.88	5.05	Y	-58.1	7.76	0.2603	BR to Weathered BR
114-MW52D	BR (FLUTe Port) - Lockatong	Top of Casing	80	83	-64.36	-67.36	-65.86	15.64	Top of Tubing	16.17	9.10	7.07	Y	-65.86	7.00	0.0143	Upward within BR
114-MW52D	BR (FLUTe Port) - Lockatong	Top of Casing	87	90	-71.36	-74.36	-72.86	15.64	Top of Tubing	16.15	8.98	7.17	Y	-72.86	15.00	0.0233	Upward within BR
114-MW52D	BR (FLUTe Port) - Lockatong	Top of Casing	102	105	-86.36	-89.36	-87.86	15.64	Top of Tubing	16.16	8.64	7.52	Y	-87.86	-	-	-
114-PZ-57I	Intermediate	Ground Surface	26	31	-11.60	-16.60	-14.1	14.40	Top of PVC	16.13	9.00	7.13	Y	-14.1	27	-0.0096	Intermediate to Deep
114-PZ-57D	Deep	Ground Surface	53	58	-38.60	-43.60	-41.1	14.40	Top of PVC	16.39	9.52	6.87	Y	-41.1	10	-0.0070	Deep to Basal Till
114-PZ-57T	Basal Till	Ground Surface	63	68	-48.60	-53.60	-51.1	14.40	Top of PVC	16.42	9.62	6.80	Y	-51.1	5.25	-0.3600	Basal Till to Weathered BR
114-MW57C	Weathered BR - Lockatong	Ground Surface	68.5	70	-55.60	-57.10	-56.35	12.90	Top of PVC	14.55	9.64	4.91	Y	-56.35	29.7	0.0798	BR to Weathered BR
114-MW57D	BR (open borehole) - Lockatong	Ground Surface	85	112.5	-72.30	-99.80	-86.05	12.70	Top of Casing	14.70	7.42	7.28	Y	-86.05	-	-	-
114-PZ-66I	Intermediate	Ground Surface	35	40	-21.10	-26.10	-23.6	13.90	Top of PVC	16.19	10.90	5.29	Y	-23.6	8.5	-0.0047	Intermediate to Deep
114-PZ-66D	Deep	Ground Surface	45	47	-31.10	-33.10	-32.1	13.90	Top of PVC	16.15	10.90	5.25	Y	-32.1	21.5	-0.0028	Deep to Basal Till
114-PZ-66T	Basal Till	Ground Surface	65	70	-51.10	-56.10	-53.6	13.90	Top of PVC	16.17	10.98	5.19	Y	-53.6	14.5	0.0055	Weathered BR to Basal Till
114-PZ-66WR	Weathered BR - Lockatong	Ground Surface	80	84	-66.10	-70.10	-68.1	13.90	Top of PVC	15.85	10.58	5.27	Y	-68.1	9.7	0.1402	BR to Weathered BR
114-MW66D	BR (FLUTe Port) - Lockatong	Top of Casing	91	97	-74.80	-80.80	-77.8	16.20	Top of Tubing	16.72	10.09	6.63	Y	-77.8	15.00	0.0020	Upward within BR
114-MW66D	BR (FLUTe Port) - Lockatong	Top of Casing	107	111	-90.80	-94.80	-92.8	16.20	Top of Tubing	16.70	10.04	6.66	Y	-92.8	11.5	0.00173913	Upward within BR
114-MW66D	BR (FLUTe Port) - Lockatong	Top of Casing	118	123	-101.80	-106.80	-104.3	16.20	Top of Tubing	16.71	10.03	6.68	Y	-104.3	6	0.00166667	Upward within BR
114-MW66D	BR (FLUTe Port) - Lockatong	Top of Casing	124	129	-107.80	-112.80	-110.3	16.20	Top of Tubing	16.72	10.03	6.69	Y	-110.3	12	-0.0008333	Downward within BR
114-MW66D	BR (FLUTe Port) - Lockatong	Top of Casing	137	140	-120.80	-123.80	-122.3	16.20	Top of Tubing	16.71	10.03	6.68	Y	-122.3	-	-	-
114-MW72D	BR (FLUTe Port) - Lockatong	Top of Casing	102	106	-87.59	-91.59	-89.59	14.41	Top of Tubing	14.76	7.76	7.00	Y	-89.59	8.00	-0.0063	Downward within BR
114-MW72D	BR (FLUTe Port) - Lockatong	Top of Casing	110	114	-95.59	-99.59	-97.59	14.41	Top of Tubing	14.79	7.84	6.95	Y	-97.59	5.50	-0.0309	Downward within BR
114-MW72D	BR (FLUTe Port) - Lockatong	Top of Casing	116	119	-101.59	-104.59	-103.09	14.41	Top of Tubing	14.76	7.98	6.78	Y	-103.09	7.00	0.0014	Upward within BR
114-MW72D	BR (FLUTe Port) - Lockatong	Top of Casing	123	126	-108.59	-111.59	-110.09	14.41	Top of Tubing	14.79	8.00	6.79	Y	-110.09	-	-	-

[1]Reference elevation at time of water level gauging.
[2]Negative value indicates downward vertical groundwater flow direction.
[3]Groundwater elevation not calculated as water level had not yet recovered from well development activities.
Vertical Elevation Datum = feet in the North American Vertical Datum of 1988 (NAVD88).
- = Not Applicable
BR = Bedrock
btc = Below top of casing
DTW = Depth to groundwater
N = No
NC = Not calculated
PVC = polyvinyl chloride
Y = Yes

Table 2-3
Groundwater Elevation Gauging Data - November 2024
Addendum to Groundwater Remedial Investigation Report
Garfield Avenue Group Sites
PPG, Jersey City, New Jersey

AECOM

Well ID	Water Bearing Zone	Easting (ft NAD83)	Northing (ft NAD83)	Total Well Depth (ft)	Water Level Reference Point Elevation[1] (Riser or Inner Casing) (feet)	Groundwater Gauging Data	
						DTW (feet btc)	Groundwater Elevation (ft NAVD88)
November 11-12, 2024							
114-MW53C	WEATHERED BEDROCK	611157.6	683435.6	47.5	15.08	8.10	6.98
114-MW57C	WEATHERED BEDROCK	610949.9	683210.4	70	14.55	5.82	8.73
114-MW58C-R	WEATHERED BEDROCK	611383.1	683303.4	87	10.87	4.71	6.16
114-MW60C-R	WEATHERED BEDROCK	611335.5	682857.6	119	10.09	5.00	5.09
114-MW62C	WEATHERED BEDROCK	611139	683749.8	73	15.04	8.25	6.79
114-MW75WR	WEATHERED BEDROCK	611142.9	682659.5	121	11.17	5.85	5.32
114-MW76WR	BEDROCK	611052.1	683389.8	65	13.61	6.20	7.41
114-MW78WR	BEDROCK	610979.7	683145.3	84	12.10	5.51	6.59
114-MW79WR	BEDROCK	610899.4	683455.9	81	13.93	3.39	10.54
114-MW80WR	BEDROCK	611129.3	683132.3	94	10.95	4.34	6.61
114-PZ-52WR	WEATHERED BEDROCK	611063	683542	74	15.93	7.65	8.28
114-PZ-66WR	WEATHERED BEDROCK	610929.9	683430.2	84	15.85	5.97	9.88

[1]Reference elevation at time of water level gauging.
[3]Groundwater elevation not calculated as water level had not yet recovered from well development activities.
Vertical Elevation Datum = feet in the North American Vertical Datum of 1988 (NAVD88).
BR = Bedrock
btc = Below top of casing
DTW = Depth to groundwater
ft = feet

Table 3-1
Monitoring and Remediation Well Network and Construction Details
Addendum to Groundwater Remedial Investigation Report
Garfield Avenue Group Sites
PPG, Jersey City, New Jersey

Well ID	Easting (ft NAD83)	Northing (ft NAD83)	Water-Bearing Zone	Well Permit Number	Well Installation/Modification Date	Status	Well Use	Total Boring Depth (ft bgs)	Open Borehole/ Screened Interval/ FLUTe Port Intervals[5]	Ground Surface Elevation (ft NAVD88)	Top of Inner Casing Elevation (ft NAVD88)	Inner Casing Material	Inner Casing Diameter (inches)
114-MW16B	610610.2	683366.4	Bedrock[3] - Diabase	26-00081-301	1/5/2007	Active	Monitoring	35.5	30.5-35.5	16.1	15.53	PVC	2
114-MW4D	610821.8	683258.9	Bedrock (Open Borehole)[1,2] - Diabase, Lockatong	E202110740	11/11/2021	Active	Monitoring	125	90-94, 98-102, 111-115, 121-125	13.1	15.77	Steel	6
114-MW6D	611298.4	683683.3	Bedrock (Open Borehole) - Lockatong	26-00081-167	12/14/2006	Active	Monitoring	111	86-111	12.6	12.69	Steel	6
114-MW7D	611189.2	683329.1	Bedrock[3] - Indeterminate	26-00081-207	12/15/2006	Active	Monitoring	90	85-90	12.4	11.92	PVC	6
114-MW52D	611077.5	683544.4	Bedrock (Open Borehole)[1] - Lockatong	E202012657	12/11/2020	Active	Monitoring	105	80-83, 87-90, 102-105	13.9	15.64	Steel	6
114-MW53C	611157.6	683435.6	Weathered Bedrock - Lockatong	E202002720	7/13/2020	Active	Monitoring	55	46-47.5	13.9	15.08	PVC	2
114-MW55C	611439.1	683519.8	Weathered Bedrock - Stockton	E202002722	3/27/2020	Decommissioned	Monitoring	75	68-69	11.1	13.23	PVC	2
114-MW57C	610949.9	683210.4	Weathered Bedrock - Lockatong	E202002724	7/1/2020	Active	Monitoring	75	68.5-70	12.9	14.55	PVC	2
114-MW57D	610903.9	683215.5	Bedrock (Open Borehole)[1] - Lockatong	E202012660	1/4/2021	Active	Monitoring	112.5	87.5-91.5, 96.5-100.5, 104-108, 109-113	12.7	14.70	Steel	6
114-MW58C	611371.2	683296.6	Weathered Bedrock - Stockton	E202002725	6/18/2020	Decommissioned	Monitoring	80	72.5-76	11.2	12.51	PVC	2
114-MW58C-R	611383.1	683303.4	Weathered Bedrock[3] - Stockton, Lockatong	E202312356	1/30/2024	Active	Monitoring	90	82-87	10.8	10.43	PVC	2
114-MW60C	611340.1	682895.5	Weathered Bedrock - Stockton	E202002727	6/29/2020	Decommissioned	Monitoring	125	119.5-121.5	11.0	12.87	PVC	2
114-MW60C-R	611335.5	682857.6	Weathered Bedrock[3] - Stockton	E202312354	1/23/2024	Active	Monitoring	125	115-119	10.6	10.20	PVC	2
114-MW61D	610873.2	683469.8	Bedrock (Open Borehole)[2,3] - Diabase, Lockatong	E202110645	11/29/2021	Active	Monitoring	135	110-135	14.3	17.12	PVC	2
114-MW62C	611139.0	683749.8	Weathered Bedrock - Lockatong	E202002717	6/16/2020	Active	Monitoring	80	69-73	13.0	15.04	PVC	2
114-MW64C	611381.9	683046.0	Weathered Bedrock - Stockton	E202002937	6/24/2020	Decommissioned	Monitoring	100	93-96	10.8	12.30	PVC	2
114-MW66D	610941.4	683423.4	Bedrock (Open Borehole)[1,2] - Lockatong	E202110646	11/8/2021	Active	Monitoring	140	91-97, 107-111, 118-123, 124-129, 137-140	13.9	16.20	Steel	6
114-MW71D	610955.0	683613.6	Bedrock (Open Borehole) - Diabase, Lockatong	E202109567	10/19/2021	Active	Monitoring	141	115-141	14.2	15.96	Steel	6
114-MW72D	610827.0	683100.2	Bedrock (Open Borehole)[1] - Lockatong	E202109568	11/1/2021	Active	Monitoring	125	102-106, 110-114, 116-119, 123-126	12.3	14.41	Steel	6
114-MW73D	610916.6	683379.7	Bedrock (Open Borehole) - Lockatong	E202312362	12/26/2023	Decommissioned	Test Borehole	118	88-118	13.9	14.99	Steel	6
114-MW74D	610897.5	683447.6	Bedrock (Open Borehole) - Lockatong	E202312357	1/4/2024	Decommissioned	Test Borehole	132	97-132	14.2	15.23	Steel	6
114-MW75WR	611142.9	682659.5	Weathered Bedrock[3] - Lockatong, Stockton	E202312353	12/14/2023	Active	Monitoring	130	116-121	11.5	11.17	PVC	2
114-MW76D	610739.0	682957.0	Bedrock (Open Borehole) - Diabase,Lockatong	E202405808	6/11/2024	Active	Monitoring	124	99-124	12.0	14.90	Steel	6
114-MW81D	610795.9	683046.5	Bedrock (Open Borehole) - Lockatong	E202411518	11/14/2024	Active	Monitoring	125	100-125	12.2	15.45	Steel	6
114-PZ-52I[4]	611063.0	683542.0	Intermediate	E202110384	11/29/2021	Active	Monitoring	75	28-33	13.9	15.99	PVC	1.5
114-PZ-52D[4]	611063.0	683542.0	Deep (Lower)	E202110385	11/29/2021	Active	Monitoring	75	40-45	13.9	15.89	PVC	1.5
114-PZ-52WR[4]	611063.0	683542.0	Weathered Bedrock - Lockatong	E202109828	11/29/2021	Active	Monitoring	75	70-74	13.9	15.93	PVC	2
114-PZ-57I[4]	610922.5	683223.4	Intermediate	E202110386	11/22/2021	Active	Monitoring	75	26-31	14.4	16.13	PVC	1.5
114-PZ-57D[4]	610922.5	683223.4	Deep (Lower)	E202109829	11/22/2021	Active	Monitoring	75	53-58	14.4	16.39	PVC	1.5
114-PZ-57T[4]	610922.5	683223.4	Basal Till	E202110387	11/22/2021	Active	Monitoring	75	63-68	14.4	16.42	PVC	1.5
114-PZ-66I[4]	610929.9	683430.2	Intermediate	E202109830	11/18/2021	Active	Monitoring	85	35-40	13.9	16.19	PVC	1.5
114-PZ-66D[4]	610929.9	683430.2	Deep (Lower)	E202110391	11/18/2021	Active	Monitoring	85	45-47	13.9	16.15	PVC	1.5
114-PZ-66T[4]	610929.9	683430.2	Basal Till	E202110390	11/18/2021	Active	Monitoring	85	65-70	13.9	16.17	PVC	1.5
114-PZ-66WR[4]	610929.9	683430.2	Weathered Bedrock - Lockatong	E202110392	11/18/2021	Active	Monitoring	85	80-84	13.9	15.85	PVC	2
114-MW76WR	611052.10	683389.80	Bedrock - Lockatong	E202404422	4/29/2024	Active	Monitoring	65	55-65	14.0	13.61	PVC	4
114-MW77WR	611023.40	683307.50	Bedrock - Lockatong	E202404423	5/3/2024	Active	Monitoring/Injection	65	55-65	14.2	13.71	PVC	4
114-MW78WR	610979.70	683145.30	Bedrock - Lockatong	E202404424	5/7/2024	Active	Monitoring	84	74-84	12.5	12.10	PVC	4
114-MW79WR	610899.40	683455.90	Bedrock - Diabase	E202404491	5/23/2024	Active	Monitoring	81	71-81	14.2	13.90	PVC	4
114-MW80WR	611129.30	683132.30	Bedrock - Stockton	E202404496	6/5/2024	Active	Monitoring	94	84-94	11.2	10.95	PVC	4
114-PW-01WR	610908.20	683443.70	Bedrock - Lockatong	E202404320	5/13/2024	Active	Injection	95	81-91	13.9	17.43	PVC	4
114-PW-02WR	610933.80	683486.30	Bedrock - Lockatong	E202404322	5/16/2024	Active	Injection	93	83-93	14.9	18.25	PVC	4
114-PW-03WR	610958.50	683529.80	Bedrock - Lockatong	E202404324	5/24/2024	Active	Injection	91	81-91	14.9	18.14	PVC	4
114-PW-04WR	611148.40	683452.90	Bedrock - Lockatong	E202404492	5/30/2024	Active	Injection	54	44-54	14.0	17.43	PVC	4
114-PW-05WR	610886.60	683398.90	Bedrock - Lockatong	E202404427	5/15/2024	Active	Injection	91	81-91	14.0	17.43	PVC	4
114-PW-06WR	610895.70	683311.60	Bedrock - Lockatong	E202404425	5/13/2024	Active	Injection	89	79-89	14.0	17.46	PVC	4
114-PW-07WR	610923.20	683228.80	Bedrock - Lockatong	E202404426	5/22/2024	Active	Injection	77	66-76	14.8	18.12	PVC	4
114-PW-09WR	611100.40	683183.20	Bedrock - Stockton	E202404494	5/30/2024	Active	Monitoring/Injection	81	71-81	12.4	15.61	PVC	4
114-PW-10WR	611132.30	683261.00	Bedrock - Stockton	E202404495	6/3/2024	Active	Monitoring/Injection	86	76-86	12.6	15.96	PVC	4

Notes:
[1]Open borehole converted to FLUTe multi-port system
[2]Deepening of existing borehole
[3]Open borehole completed with 2-inch PVC screen and casing
[4]Nested piezometers installed at discrete depth intervals within the same borehole; one borehole each for PZ-52, PZ-57, and PZ-66
[5]FLUTe port intervals are listed in feet blow top of steel casing. Open borehole and screened intervals are listed in feet below ground surface
bgs - below ground surface
ft - feet
NAD83 - North American Datum of 1983 (Horizontal)
NAVD88 - North American Vertical Datum of 1988 (Vertical)
PVC - polyvinyl chloride

Table 3-2
Groundwater Sampling Summary
Addendum to Groundwater Remedial Investigation Report
Garfield Avenue Group Sites
PPG, Jersey City, New Jersey

Well ID	Sample ID	Sample Type	Fraction	SDG	Date Collected	Chromium	Chromium (Hexavalent)	Field Measurements	Iron	Iron (Ferric)	Iron (Ferrous)	Manganese	Methane	Oxidation-Reduction Potential (ORP)	pH	Sulfate	Temperature	Total Organic Carbon
114-MW4D	114-MW-4D-106.3-20211216	N	T	4602492741	12/16/2021	X	X							X	X		X	
114-MW4D	114-MW-4D-112.3-20211216	N	T	4602492741	12/16/2021	X	X							X	X		X	
114-MW4D	114-MW4D-118.8-20211217	N	T	4602493661	12/17/2021	X	X							X	X		X	
114-MW4D	114-MW4D-122.3-20211217	N	T	4602493661	12/17/2021	X	X							X	X		X	
114-MW4D	114-MW4D-123.8-20211217	N	T	4602493661	12/17/2021	X	X							X	X		X	
114-MW4D-Port1	114-MW4D-90.0-94.0-20230926	N	D	4602890021	9/26/2023				X	X	X							
114-MW4D-Port1	114-MW4D-90.0-94.0-20230926	N	T	4602890021	9/26/2023	X	X	X						X	X	X	X	X
114-MW4D-Port1	114-MW4D-90-94-20230627	N	D	4602831932	6/27/2023				X	X	X							
114-MW4D-Port1	114-MW4D-90-94-20230627	N	T	4602831932	6/27/2023	X	X	X						X	X	X	X	X
114-MW4D-Port1	114-MW4D-90-94-20231219	N	D	JD79185	12/19/2023				X			X						
114-MW4D-Port1	114-MW4D-90-94-20231219	N	T	JD79185	12/19/2023	X	X	X						X	X	X		X
114-MW4D-Port1	114-MW4D-90-94-20240319	N	D	JD84758	3/19/2024						X							
114-MW4D-Port1	114-MW4D-90-94-20240319	N	T	JD84758	3/19/2024	X	X	X						X	X	X		X
114-MW4D-Port1	114-MW4D-90-94-20240617	N	D	JD90605	6/17/2024						X							
114-MW4D-Port1	114-MW4D-90-94-20240617	N	T	JD90605	6/17/2024	X	X	X						X	X	X		X
114-MW4D-Port1	114-MW4D-90-94-20240918	N	D	JD96352	9/18/2024						X							
114-MW4D-Port1	114-MW4D-90-94-20240918	N	T	JD96352	9/18/2024	X	X	X						X	X	X		X
114-MW4D-Port1	114-MW4D-90-94-20241218	N	D	JE2940	12/18/2024						X							
114-MW4D-Port1	114-MW4D-90-94-20241218	N	T	JE2940	12/18/2024	X	X	X						X	X	X		X
114-MW4D-Port2	114-MW4D-98.0-102.0-20230926	N	D	4602890021	9/26/2023				X	X	X							
114-MW4D-Port2	114-MW4D-98.0-102.0-20230926	N	T	4602890021	9/26/2023	X	X	X						X	X	X	X	X
114-MW4D-Port2	114-MW4D-98-102-20230627	N	D	4602831932	6/27/2023				X	X	X							
114-MW4D-Port2	114-MW4D-98-102-20230627	N	T	4602831932	6/27/2023	X	X	X						X	X	X	X	X
114-MW4D-Port2	114-MW4D-98-102-20231219	N	D	JD79185	12/19/2023				X			X						
114-MW4D-Port2	114-MW4D-98-102-20231219	N	T	JD79185	12/19/2023	X	X	X						X	X	X		X
114-MW4D-Port2	114-MW4D-98-102-20240319	N	D	JD84758	3/19/2024						X							
114-MW4D-Port2	114-MW4D-98-102-20240319	N	T	JD84758	3/19/2024	X	X	X						X	X	X		X
114-MW4D-Port2	114-MW4D-98-102-20240617	N	D	JD90605	6/17/2024						X							
114-MW4D-Port2	114-MW4D-98-102-20240617	N	T	JD90605	6/17/2024	X	X	X						X	X	X		X
114-MW4D-Port2	114-MW4D-98-102-20240918	N	D	JD96352	9/18/2024						X							
114-MW4D-Port2	114-MW4D-98-102-20240918	N	T	JD96352	9/18/2024	X	X	X						X	X	X		X
114-MW4D-Port2	114-MW4D-98-102-20241218	N	D	JE2940	12/18/2024						X							
114-MW4D-Port2	114-MW4D-98-102-20241218	N	T	JE2940	12/18/2024	X	X	X						X	X	X		X
114-MW4D-Port3	114-MW4D-111.0-115.0-20230926	N	D	4602890021	9/26/2023				X	X	X							
114-MW4D-Port3	114-MW4D-111.0-115.0-20230926	N	T	4602890021	9/26/2023	X	X	X						X	X	X	X	X
114-MW4D-Port3	114-MW4D-111-115-20230627	N	D	4602831932	6/27/2023				X	X	X							
114-MW4D-Port3	114-MW4D-111-115-20230627	N	T	4602831932	6/27/2023	X	X	X						X	X	X	X	X
114-MW4D-Port3	114-MW4D-111-115-20231219	N	D	JD79185	12/19/2023				X			X						
114-MW4D-Port3	114-MW4D-111-115-20231219	N	T	JD79185	12/19/2023	X	X	X						X	X	X		X
114-MW4D-Port3	114-MW4D-111-115-20240319	N	D	JD84758	3/19/2024						X							
114-MW4D-Port3	114-MW4D-111-115-20240319	N	T	JD84758	3/19/2024	X	X	X						X	X	X		X
114-MW4D-Port3	114-MW4D-111-115-20240617	N	D	JD90605	6/17/2024						X							
114-MW4D-Port3	114-MW4D-111-115-20240617	N	T	JD90605	6/17/2024	X	X	X						X	X	X		X
114-MW4D-Port3	114-MW4D-111-115-20240918	N	D	JD96352	9/18/2024						X							
114-MW4D-Port3	114-MW4D-111-115-20240918	N	T	JD96352	9/18/2024	X	X	X						X	X	X		X
114-MW4D-Port3	114-MW4D-111-115-20241218	N	D	JE2940	12/18/2024						X							
114-MW4D-Port3	114-MW4D-111-115-20241218	N	T	JE2940	12/18/2024	X	X	X						X	X	X		X

Table 3-2
Groundwater Sampling Summary
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Garfield Avenue Group Sites
PPG, Jersey City, New Jersey

Well ID	Sample ID	Sample Type	Fraction	SDG	Date Collected	Chromium	Chromium (Hexavalent)	Field Measurements	Iron	Iron (Ferric)	Iron (Ferrous)	Manganese	Methane	Oxidation-Reduction Potential (ORP)	pH	Sulfate	Temperature	Total Organic Carbon
114-MW4D-Port4	114-MW4D-121.0-125.0-20230926	N	D	4602890021	9/26/2023				X	X	X							
114-MW4D-Port4	114-MW4D-121.0-125.0-20230926	N	T	4602890021	9/26/2023	X	X	X						X	X	X	X	X
114-MW4D-Port4	114-MW4D-121-125-20230627	N	D	4602831932	6/27/2023				X	X	X							
114-MW4D-Port4	114-MW4D-121-125-20230627	N	T	4602831932	6/27/2023	X	X	X						X	X	X	X	X
114-MW4D-Port4	114-MW4D-121-125-20231219	N	D	JD79185	12/19/2023				X			X						
114-MW4D-Port4	114-MW4D-121-125-20231219	N	T	JD79185	12/19/2023	X	X	X						X	X	X		X
114-MW4D-Port4	114-MW4D-121-125-20240319	N	D	JD84758	3/19/2024						X							
114-MW4D-Port4	114-MW4D-121-125-20240319	N	T	JD84758	3/19/2024	X	X	X						X	X	X		X
114-MW4D-Port4	114-MW4D-121-125-20240617	N	D	JD90605	6/17/2024						X							
114-MW4D-Port4	114-MW4D-121-125-20240617	N	T	JD90605	6/17/2024	X	X	X						X	X	X		X
114-MW4D-Port4	114-MW4D-121-125-20240918	N	D	JD96352	9/18/2024						X							
114-MW4D-Port4	114-MW4D-121-125-20240918	N	T	JD96352	9/18/2024	X	X	X						X	X	X		X
114-MW4D-Port4	114-MW4D-121-125-20241218	N	D	JE2940	12/18/2024						X							
114-MW4D-Port4	114-MW4D-121-125-20241218	N	T	JE2940	12/18/2024	X	X	X						X	X	X		X
114-MW52D	114-MW-52D-104-20211123	N	T	4602478531	11/23/2021	X	X							X	X		X	
114-MW52D	114-MW-52D-104-20211123-X	FD	T	4602478531	11/23/2021	X	X							X	X		X	
114-MW52D-Port1	114-MW52D-80.0-83.0-20230927	N	D	4602890621	9/27/2023				X	X	X							
114-MW52D-Port1	114-MW52D-80.0-83.0-20230927	N	T	4602890621	9/27/2023	X	X	X						X	X	X	X	X
114-MW52D-Port1	114-MW52D-80-83-20220421	N	T	4602567051	4/21/2022	X	X							X	X		X	
114-MW52D-Port1	114-MW52D-80-83-20220603	N	T	4602593611	6/3/2022	X	X							X	X		X	X
114-MW52D-Port1	114-MW52D-80-83-20220705	N	T	4602613181	7/5/2022	X	X							X	X		X	X
114-MW52D-Port1	114-MW52D-80-83-20230629	N	D	4602833322	6/29/2023				X	X	X							
114-MW52D-Port1	114-MW52D-80-83-20230629	N	T	4602833322	6/29/2023	X	X							X	X	X	X	X
114-MW52D-Port1	114-MW52D-80-83-20231227	N	T	JD79684	12/27/2023	X	X							X	X			X
114-MW52D-Port1	114-MW52D-80-83-20240329	N	D	JD85454	3/29/2024						X							
114-MW52D-Port1	114-MW52D-80-83-20240329	N	T	JD85454	3/29/2024	X	X	X						X	X	X		X
114-MW52D-Port1	114-MW52D-80-83-20240621	N	D	JD90886	6/21/2024						X							
114-MW52D-Port1	114-MW52D-80-83-20240621	N	T	JD90886	6/21/2024	X	X	X						X	X	X		X
114-MW52D-Port1	114-MW52D-80-83-20240919	N	T	JD96459	9/19/2024	X	X	X						X	X	X		X
114-MW52D-Port1	114-MW52D-80-83-20241218	N	D	JE2940	12/18/2024						X							
114-MW52D-Port1	114-MW52D-80-83-20241218	N	T	JE2940	12/18/2024	X	X	X						X	X	X		X
114-MW52D-Port2	114-MW52-87-90-20220705	N	T	4602613181	7/5/2022	X	X							X	X		X	X
114-MW52D-Port2	114-MW52D-87.0-90.0-20230927	N	D	4602890621	9/27/2023				X	X	X							
114-MW52D-Port2	114-MW52D-87.0-90.0-20230927	N	T	4602890621	9/27/2023	X	X	X						X	X	X	X	X
114-MW52D-Port2	114-MW52D-87-90-20220421	N	T	4602567051	4/21/2022	X	X							X	X		X	
114-MW52D-Port2	114-MW52D-87-90-20220603	N	T	4602593611	6/3/2022	X	X							X	X		X	X
114-MW52D-Port2	114-MW52D-87-90-20230629	N	D	4602833322	6/29/2023				X	X	X							
114-MW52D-Port2	114-MW52D-87-90-20230629	N	T	4602833322	6/29/2023	X	X							X	X	X	X	X
114-MW52D-Port2	114-MW52D-87-90-20231227	N	T	JD79684	12/27/2023	X	X							X	X			X
114-MW52D-Port2	114-MW52D-87-90-20240329	N	D	JD85454	3/29/2024						X							
114-MW52D-Port2	114-MW52D-87-90-20240329	N	T	JD85454	3/29/2024	X	X	X						X	X	X		X
114-MW52D-Port2	114-MW52D-87-90-20240621	N	D	JD90886	6/21/2024						X							
114-MW52D-Port2	114-MW52D-87-90-20240621	N	T	JD90886	6/21/2024	X	X	X						X	X	X		X
114-MW52D-Port2	114-MW52D-87-90-20240919	N	T	JD96459	9/19/2024	X	X	X						X	X	X		X
114-MW52D-Port2	114-MW52D-87-90-20241218	N	D	JE2940	12/18/2024						X							
114-MW52D-Port2	114-MW52D-87-90-20241218	N	T	JE2940	12/18/2024	X	X	X						X	X	X		X

Table 3-2
Groundwater Sampling Summary
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Well ID	Sample ID	Sample Type	Fraction	SDG	Date Collected	Chromium	Chromium (Hexavalent)	Field Measurements	Iron	Iron (Ferric)	Iron (Ferrous)	Manganese	Methane	Oxidation-Reduction Potential (ORP)	pH	Sulfate	Temperature	Total Organic Carbon
114-MW52D-Port3	114-MW52D-102.0-105.0-20230927	N	D	4602890621	9/27/2023				X	X	X							
114-MW52D-Port3	114-MW52D-102.0-105.0-20230927	N	T	4602890621	9/27/2023	X	X	X						X	X	X	X	X
114-MW52D-Port3	114-MW52D-102-105-20220421	N	T	4602567051	4/21/2022	X	X							X	X		X	
114-MW52D-Port3	114-MW52D-102-105-20220603	N	T	4602593611	6/3/2022	X	X							X	X		X	X
114-MW52D-Port3	114-MW52D-102-105-20220705	N	T	4602613181	7/5/2022	X	X							X	X		X	X
114-MW52D-Port3	114-MW52D-102-105-20230629	N	D	4602833322	6/29/2023				X	X	X							
114-MW52D-Port3	114-MW52D-102-105-20230629	N	T	4602833322	6/29/2023	X	X							X	X	X	X	X
114-MW52D-Port3	114-MW52D-102-105-20231227	N	T	JD79684	12/27/2023	X	X							X	X			X
114-MW52D-Port3	114-MW52D-102-105-20240329	N	D	JD85454	3/29/2024						X							
114-MW52D-Port3	114-MW52D-102-105-20240329	N	T	JD85454	3/29/2024	X	X	X						X	X	X		X
114-MW52D-Port3	114-MW52D-102-105-20240621	N	D	JD90886	6/21/2024						X							
114-MW52D-Port3	114-MW52D-102-105-20240621	N	T	JD90886	6/21/2024	X	X	X						X	X	X		X
114-MW52D-Port3	114-MW52D-102-105-20240919	N	T	JD96459	9/19/2024	X	X	X						X	X	X		X
114-MW52D-Port3	114-MW52D-102-105-20241218	N	D	JE2940	12/18/2024						X							
114-MW52D-Port3	114-MW52D-102-105-20241218	N	T	JE2940	12/18/2024	X	X	X						X	X			
114-MW53C	114-MW53C-47.5-20230703	N	D	4602835472	7/3/2023				X	X	X							
114-MW53C	114-MW53C-47.5-20230703	N	T	4602835472	7/3/2023	X	X	X						X	X	X	X	X
114-MW53C	114-MW53C-47.5-20230922	N	D	4602888091	9/22/2023				X	X	X							
114-MW53C	114-MW53C-47.5-20230922	N	T	4602888091	9/22/2023	X	X	X						X	X	X	X	X
114-MW53C	114-MW53C-47.5-20231219	N	D	JD79185	12/19/2023				X			X						
114-MW53C	114-MW53C-47.5-20231219	N	T	JD79185	12/19/2023	X	X	X						X	X	X		X
114-MW53C	114-MW53C-47.5-20240319	N	D	JD84758	3/19/2024						X							
114-MW53C	114-MW53C-47.5-20240319	N	T	JD84758	3/19/2024	X	X	X						X	X	X		X
114-MW53C	114-MW53C-47.9-20240528	N	D	JD89297R	5/28/2024	X	X		X		X	X		X	X			
114-MW53C	114-MW53C-47.9-20240528	N	T	JD89297R	5/28/2024	X	X	X					X	X	X	X		X
114-MW53C	114-MW53C-48.0-20240805	N	D	JD93435	8/5/2024	X	X							X	X			
114-MW53C	114-MW53C-48.0-20240805	N	T	JD93435	8/5/2024	X	X	X						X	X	X		X
114-MW53C	114-MW53C-48.0-20240904	N	D	JD95426	9/4/2024	X	X							X	X			
114-MW53C	114-MW53C-48.0-20240904	N	T	JD95426	9/4/2024	X	X	X						X	X	X		X
114-MW53C	114-MW53C-48.0-20241001	N	D	JD97187	10/1/2024	X	X							X	X			
114-MW53C	114-MW53C-48.0-20241001	N	T	JD97187	10/1/2024	X	X	X						X	X	X		X
114-MW53C	114-MW53C-48.0-20241104	N	D	JD99628	11/4/2024	X	X							X	X			
114-MW53C	114-MW53C-48.0-20241104	N	T	JD99628	11/4/2024	X	X	X						X	X	X		X
114-MW53C	114-MW53C-48.0-20241205	N	D	JE2028	12/5/2024	X	X				X			X	X			
114-MW53C	114-MW53C-48.0-20241205	N	T	JE2028	12/5/2024	X	X	X						X	X	X		X
114-MW55C	114-MW-55C-70.5-20230629	N	D	4602833322	6/29/2023				X	X	X							
114-MW55C	114-MW-55C-70.5-20230629	N	T	4602833322	6/29/2023	X	X	X						X	X	X	X	X
114-MW57C	114-MW57C-70.9-20240520	N	D	JD88834R	5/20/2024	X	X		X		X	X		X	X			
114-MW57C	114-MW57C-70.9-20240520	N	T	JD88834R	5/20/2024	X	X	X					X	X	X	X		X
114-MW57C	114-MW57C-70.9-20240530	N	D	JD89452	5/30/2024	X	X		X			X		X	X			
114-MW57C	114-MW57C-70.9-20240530	N	T	JD89452	5/30/2024	X	X	X					X	X	X	X		X
114-MW57C	114-MW57C-70.9-20240530-X	FD	D	JD89452	5/30/2024	X	X		X			X		X	X			
114-MW57C	114-MW57C-70.9-20240530-X	FD	T	JD89452	5/30/2024	X	X						X	X	X	X		X
114-MW57C	114-MW57C-70.9-20240726	N	D	JD92936	7/26/2024	X	X				X			X	X			
114-MW57C	114-MW57C-70.9-20240726	N	T	JD92936	7/26/2024	X	X	X						X	X	X		X
114-MW57C	114-MW57C-70.9-20240805	N	D	JD93435	8/5/2024	X	X							X	X			
114-MW57C	114-MW57C-70.9-20240805	N	T	JD93435	8/5/2024	X	X	X						X	X	X		X
114-MW57C	114-MW57C-70.9-20240821	N	D	JD94597	8/21/2024	X	X							X	X			
114-MW57C	114-MW57C-70.9-20240821	N	T	JD94597	8/21/2024	X	X	X						X	X	X		X

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Well ID	Sample ID	Sample Type	Fraction	SDG	Date Collected	Chromium	Chromium (Hexavalent)	Field Measurements	Iron	Iron (Ferric)	Iron (Ferrous)	Manganese	Methane	Oxidation-Reduction Potential (ORP)	pH	Sulfate	Temperature	Total Organic Carbon
114-MW57C	114-MW57C-70.9-20240903	N	D	JD95322	9/3/2024	X	X							X	X			
114-MW57C	114-MW57C-70.9-20240903	N	T	JD95322	9/3/2024	X	X	X						X	X	X		X
114-MW57C	114-MW57C-70.9-20240930	N	D	JD97124	9/30/2024	X	X							X	X			
114-MW57C	114-MW57C-70.9-20240930	N	T	JD97124	9/30/2024	X	X	X						X	X	X		X
114-MW57C	114-MW57C-70.9-20241104	N	D	JD99628	11/4/2024	X	X							X	X			
114-MW57C	114-MW57C-70.9-20241104	N	T	JD99628	11/4/2024	X	X	X						X	X	X		X
114-MW57C	114-MW57C-70.9-20241206	N	D	JE2113	12/6/2024	X	X				X			X	X			
114-MW57C	114-MW57C-70.9-20241206	N	T	JE2113	12/6/2024	X	X	X						X	X	X		X
114-MW57C	114-MW57C-71.0-20230925	N	D	4602889531	9/25/2023				X	X	X							
114-MW57C	114-MW57C-71.0-20230925	N	T	4602889531	9/25/2023	X	X	X						X	X	X	X	X
114-MW57C	114-MW57C-71.0-20230925-X	FD	D	4602889531	9/25/2023				X	X	X							
114-MW57C	114-MW57C-71.0-20230925-X	FD	T	4602889531	9/25/2023	X	X							X	X	X	X	X
114-MW57C	114-MW57C-71.0-20231219	N	D	JD79185	12/19/2023				X			X						
114-MW57C	114-MW57C-71.0-20231219	N	T	JD79185	12/19/2023	X	X	X						X	X	X		X
114-MW57C	114-MW57C-71.0-20231219-X	FD	D	JD79185	12/19/2023				X			X						
114-MW57C	114-MW57C-71.0-20231219-X	FD	T	JD79185	12/19/2023	X	X							X	X	X		X
114-MW57C	114-MW57C-71.0-20240319	N	D	JD84758	3/19/2024						X							
114-MW57C	114-MW57C-71.0-20240319	N	T	JD84758	3/19/2024	X	X	X						X	X	X		X
114-MW57C	114-MW57C-71.0-20240319-X	FD	D	JD84758	3/19/2024						X							
114-MW57C	114-MW57C-71.0-20240319-X	FD	T	JD84758	3/19/2024	X	X							X	X	X		X
114-MW57C	114-MW57C-71-20230630	N	D	4602833942	6/30/2023	X	X		X	X	X			X	X		X	
114-MW57C	114-MW57C-71-20230630	N	T	4602833942	6/30/2023	X	X	X						X	X	X	X	X
114-MW57C	114-MW57C-71-20230630-X	FD	D	4602833942	6/30/2023	X	X		X	X	X			X	X		X	
114-MW57C	114-MW57C-71-20230630-X	FD	T	4602833942	6/30/2023	X	X							X	X	X	X	X
114-MW57D	114-MW57D-87.25-20220804	N	T	4602632541	8/4/2022	X	X							X	X		X	
114-MW57D	114-MW57D-90-20220804	N	T	4602632541	8/4/2022	X	X							X	X		X	
114-MW57D	114-MW57D-98-20220805	N	T	4602633361	8/5/2022	X	X							X	X		X	
114-MW57D-Port1	114-MW57D-87.5-91.5-20230628	N	D	4602832532	6/28/2023				X	X	X							
114-MW57D-Port1	114-MW57D-87.5-91.5-20230628	N	T	4602832532	6/28/2023	X	X	X						X	X	X	X	X
114-MW57D-Port1	114-MW57D-87.5-91.5-20230926	N	D	4602890021	9/26/2023				X	X	X							
114-MW57D-Port1	114-MW57D-87.5-91.5-20230926	N	T	4602890021	9/26/2023	X	X	X						X	X	X	X	X
114-MW57D-Port1	114-MW57D-87.5-91.5-20231219	N	D	JD79185	12/19/2023				X			X						
114-MW57D-Port1	114-MW57D-87.5-91.5-20231219	N	T	JD79185	12/19/2023	X	X							X	X	X		X
114-MW57D-Port1	114-MW57D-87.5-91.5-20240329	N	D	JD85454	3/29/2024						X							
114-MW57D-Port1	114-MW57D-87.5-91.5-20240329	N	T	JD85454	3/29/2024	X	X	X						X	X	X		X
114-MW57D-Port1	114-MW57D-87.5-91.5-20240621	N	D	JD90886	6/21/2024						X							
114-MW57D-Port1	114-MW57D-87.5-91.5-20240621	N	T	JD90886	6/21/2024	X	X	X						X	X	X		X
114-MW57D-Port1	114-MW57D-87.5-91.5-20240918	N	D	JD96352	9/18/2024						X							
114-MW57D-Port1	114-MW57D-87.5-91.5-20240918	N	T	JD96352	9/18/2024	X	X	X						X	X	X		X
114-MW57D-Port1	114-MW57D-87.5-91.5-20241218	N	D	JE2940	12/18/2024	X	X				X			X	X			
114-MW57D-Port1	114-MW57D-87.5-91.5-20241218	N	T	JE2940	12/18/2024	X	X	X						X	X	X		X
114-MW57D-Port2	114-MW57D-96.5-100.5-20230628	N	D	4602832532	6/28/2023				X	X	X							
114-MW57D-Port2	114-MW57D-96.5-100.5-20230628	N	T	4602832532	6/28/2023	X	X	X						X	X	X	X	X
114-MW57D-Port2	114-MW57D-96.5-100.5-20230926	N	D	4602890021	9/26/2023				X	X	X							
114-MW57D-Port2	114-MW57D-96.5-100.5-20230926	N	T	4602890021	9/26/2023	X	X	X						X	X	X	X	X
114-MW57D-Port2	114-MW57D-96.5-100.5-20231219	N	D	JD79185	12/19/2023				X			X						
114-MW57D-Port2	114-MW57D-96.5-100.5-20231219	N	T	JD79185	12/19/2023	X	X							X	X	X		X
114-MW57D-Port2	114-MW57D-96.5-100.5-20240329	N	D	JD85454	3/29/2024						X							
114-MW57D-Port2	114-MW57D-96.5-100.5-20240329	N	T	JD85454	3/29/2024	X	X	X						X	X	X		X
114-MW57D-Port2	114-MW57D-96.5-100.5-20240621	N	D	JD90886	6/21/2024						X							
114-MW57D-Port2	114-MW57D-96.5-100.5-20240621	N	T	JD90886	6/21/2024	X	X	X						X	X	X		X

Table 3-2
Groundwater Sampling Summary
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PPG, Jersey City, New Jersey

Well ID	Sample ID	Sample Type	Fraction	SDG	Date Collected	Chromium	Chromium (Hexavalent)	Field Measurements	Iron	Iron (Ferric)	Iron (Ferrous)	Manganese	Methane	Oxidation-Reduction Potential (ORP)	pH	Sulfate	Temperature	Total Organic Carbon
114-MW57D-Port2	114-MW57D-96.5-100.5-20240918	N	D	JD96352	9/18/2024						X							
114-MW57D-Port2	114-MW57D-96.5-100.5-20240918	N	T	JD96352	9/18/2024	X	X	X						X	X	X		X
114-MW57D-Port2	114-MW57D-96.5-100.5-20241218	N	D	JE2940	12/18/2024		X				X			X	X			
114-MW57D-Port2	114-MW57D-96.5-100.5-20241218	N	T	JE2940	12/18/2024	X	X	X						X	X	X		X
114-MW57D-Port3	114-MW57D-104.0-108.0-20230926	N	D	4602890021	9/26/2023				X	X	X							
114-MW57D-Port3	114-MW57D-104.0-108.0-20230926	N	T	4602890021	9/26/2023	X	X	X						X	X	X	X	X
114-MW57D-Port3	114-MW57D-104-108-20230628	N	D	4602832532	6/28/2023				X	X	X							
114-MW57D-Port3	114-MW57D-104-108-20230628	N	T	4602832532	6/28/2023	X	X	X						X	X	X	X	X
114-MW57D-Port3	114-MW57D-104-108-20231219	N	D	JD79185	12/19/2023				X			X						
114-MW57D-Port3	114-MW57D-104-108-20231219	N	T	JD79185	12/19/2023	X	X							X	X	X		X
114-MW57D-Port3	114-MW57D-104-108-20240329	N	D	JD85454	3/29/2024						X							
114-MW57D-Port3	114-MW57D-104-108-20240329	N	T	JD85454	3/29/2024	X	X	X						X	X	X		X
114-MW57D-Port3	114-MW57D-104-108-20240621	N	D	JD90886	6/21/2024						X							
114-MW57D-Port3	114-MW57D-104-108-20240621	N	T	JD90886	6/21/2024	X	X	X						X	X	X		X
114-MW57D-Port3	114-MW57D-104-108-20240918	N	D	JD96352	9/18/2024						X							
114-MW57D-Port3	114-MW57D-104-108-20240918	N	T	JD96352	9/18/2024	X	X	X						X	X	X		X
114-MW57D-Port3	114-MW57D-104-108-20241218	N	D	JE2940	12/18/2024		X				X			X	X			
114-MW57D-Port3	114-MW57D-104-108-20241218	N	T	JE2940	12/18/2024	X	X	X						X	X	X		X
114-MW57D-Port4	114-MW57D-109.0-113.0-20230926	N	D	4602890021	9/26/2023				X	X	X							
114-MW57D-Port4	114-MW57D-109.0-113.0-20230926	N	T	4602890021	9/26/2023	X	X	X						X	X	X	X	X
114-MW57D-Port4	114-MW57D-109-113-20230628	N	D	4602832532	6/28/2023				X	X	X							
114-MW57D-Port4	114-MW57D-109-113-20230628	N	T	4602832532	6/28/2023	X	X	X						X	X	X	X	X
114-MW57D-Port4	114-MW57D-109-113-20231219	N	D	JD79185	12/19/2023				X			X						
114-MW57D-Port4	114-MW57D-109-113-20231219	N	T	JD79185	12/19/2023	X	X							X	X	X		X
114-MW57D-Port4	114-MW57D-109-113-20240329	N	D	JD85454	3/29/2024						X							
114-MW57D-Port4	114-MW57D-109-113-20240329	N	T	JD85454	3/29/2024	X	X	X						X	X	X		X
114-MW57D-Port4	114-MW57D-109-113-20240621	N	D	JD90886	6/21/2024						X							
114-MW57D-Port4	114-MW57D-109-113-20240621	N	T	JD90886	6/21/2024	X	X	X						X	X	X		X
114-MW57D-Port4	114-MW57D-109-113-20240918	N	D	JD96352	9/18/2024						X							
114-MW57D-Port4	114-MW57D-109-113-20240918	N	T	JD96352	9/18/2024	X	X	X						X	X	X		X
114-MW57D-Port4	114-MW57D-109-113-20241218	N	D	JE2940	12/18/2024		X				X			X	X			
114-MW57D-Port4	114-MW57D-109-113-20241218	N	T	JE2940	12/18/2024	X	X	X						X	X	X		X
114-MW58C	114-MW58C-75.0-20230629	N	D	4602833322	6/29/2023				X	X	X							
114-MW58C	114-MW58C-75.0-20230629	N	T	4602833322	6/29/2023	X	X	X							X	X	X	X
114-MW58C-R	114-MW58C-R-84.5-20240214	N	D	JD82442	2/14/2024						X							
114-MW58C-R	114-MW58C-R-84.5-20240214	N	T	JD82442	2/14/2024	X	X	X						X	X	X		X
114-MW58C-R	114-MW58C-R-84.5-20240214-X	FD	D	JD82442	2/14/2024						X							
114-MW58C-R	114-MW58C-R-84.5-20240214-X	FD	T	JD82442	2/14/2024	X	X							X	X	X		X
114-MW58C-R	114-MW58C-R-84.5-20240617	N	D	JD90605	6/17/2024						X							
114-MW58C-R	114-MW58C-R-84.5-20240617	N	T	JD90605	6/17/2024	X	X	X						X	X	X		X
114-MW58C-R	114-MW58C-R-84.5-20240919	N	D	JD96459	9/19/2024						X							
114-MW58C-R	114-MW58C-R-84.5-20240919	N	T	JD96459	9/19/2024	X	X	X						X	X	X		X
114-MW58C-R	114-MW58C-R-84.5-20241213	N	D	JE2642	12/13/2024						X							
114-MW58C-R	114-MW58C-R-84.5-20241213	N	T	JE2642	12/13/2024	X	X	X						X	X	X		X
114-MW60C	114-MW60C-122-20230628	N	D	4602832532	6/28/2023				X	X	X							
114-MW60C	114-MW60C-122-20230628	N	T	4602832532	6/28/2023	X	X	X						X	X	X	X	X
114-MW60C	114-MW60C-122-20230726	N	D	4602849651	7/26/2023				X	X	X							
114-MW60C	114-MW60C-122-20230726	N	T	4602849651	7/26/2023	X	X	X						X	X	X	X	X
114-MW60C	114-MW60C-122-20230726-X	FD	D	4602849651	7/26/2023				X	X	X							
114-MW60C	114-MW60C-122-20230726-X	FD	T	4602849651	7/26/2023	X	X							X	X	X	X	X

Table 3-2
Groundwater Sampling Summary
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Well ID	Sample ID	Sample Type	Fraction	SDG	Date Collected	Chromium	Chromium (Hexavalent)	Field Measurements	Iron	Iron (Ferric)	Iron (Ferrous)	Manganese	Methane	Oxidation-Reduction Potential (ORP)	pH	Sulfate	Temperature	Total Organic Carbon
114-MW60C	114-MW60C-122-20230823	N	T	4602867531	8/23/2023	X	X	X						X	X	X	X	X
114-MW60C	114-MW60C-122-20230823-X	FD	T	4602867531	8/23/2023	X	X							X	X	X	X	X
114-MW60C-R	114-MW60C-R-117.5-20240214	N	D	JD82442	2/14/2024						X							
114-MW60C-R	114-MW60C-R-117.5-20240214	N	T	JD82442	2/14/2024	X	X	X						X	X	X		X
114-MW60C-R	114-MW60C-R-117.5-20240619	N	D	JD90728	6/19/2024						X							
114-MW60C-R	114-MW60C-R-117.5-20240619	N	T	JD90728	6/19/2024	X	X	X						X	X	X		X
114-MW60C-R	114-MW60C-R-117.5-20240619-X	FD	D	JD90728	6/19/2024						X							
114-MW60C-R	114-MW60C-R-117.5-20240619-X	FD	T	JD90728	6/19/2024	X	X							X	X	X		X
114-MW60C-R	114-MW60C-R-117.5-20240918	N	D	JD96352	9/18/2024						X							
114-MW60C-R	114-MW60C-R-117.5-20240918	N	T	JD96352	9/18/2024	X	X	X						X	X	X		X
114-MW60C-R	114-MW60C-R-117.5-20240918-X	FD	D	JD96352	9/18/2024						X							
114-MW60C-R	114-MW60C-R-117.5-20240918-X	FD	T	JD96352	9/18/2024	X	X							X	X	X		X
114-MW60C-R	114-MW60C-R-117.5-20241218	N	D	JE2940	12/18/2024						X							
114-MW60C-R	114-MW60C-R-117.5-20241218	N	T	JE2940	12/18/2024	X	X	X						X	X	X		X
114-MW61D	114-MW61D-117.0-20231222	N	D	JD79443	12/22/2023	X	X		X			X		X	X			
114-MW61D	114-MW61D-117.0-20231222	N	T	JD79443	12/22/2023	X	X	X						X	X	X		X
114-MW61D	114-MW61D-117.0-20240318	N	D	JD84684	3/18/2024						X							
114-MW61D	114-MW61D-117.0-20240318	N	T	JD84684	3/18/2024	X	X	X						X	X	X		X
114-MW61D	114-MW61D-117.0-20240617	N	D	JD90605	6/17/2024						X							
114-MW61D	114-MW61D-117.0-20240617	N	T	JD90605	6/17/2024	X	X	X						X	X	X		X
114-MW61D	114-MW61D-117.0-20240617-X	FD	D	JD90605	6/17/2024						X							
114-MW61D	114-MW61D-117.0-20240617-X	FD	T	JD90605	6/17/2024	X	X							X	X	X		X
114-MW61D	114-MW61D-117.0-20240916	N	D	JD96195	9/16/2024						X							
114-MW61D	114-MW61D-117.0-20240916	N	T	JD96195	9/16/2024	X	X	X						X	X	X		X
114-MW61D	114-MW61D-117.0-20241213	N	D	JE2642	12/13/2024						X							
114-MW61D	114-MW61D-117.0-20241213	N	T	JE2642	12/13/2024	X	X	X						X	X	X		X
114-MW61D	114-MW-61D-117.3-20211215	N	T	4602492051	12/15/2021	X	X							X	X		X	
114-MW61D	114-MW61D-117-20230629	N	D	4602833322	6/29/2023	X	X		X	X	X			X	X		X	
114-MW61D	114-MW61D-117-20230629	N	T	4602833322	6/29/2023	X	X	X						X	X	X	X	X
114-MW61D	114-MW61D-117-20230921	N	D	4602887311	9/21/2023				X	X	X							
114-MW61D	114-MW61D-117-20230921	N	T	4602887311	9/21/2023	X	X	X						X	X	X	X	X
114-MW61D	114-MW-61D-120.8-20211215	N	T	4602492051	12/15/2021	X	X							X	X		X	
114-MW61D	114-MW61D-121.0-20231220	N	D	JD79285	12/20/2023	X	X		X		X	X		X	X			
114-MW61D	114-MW61D-121.0-20231220	N	T	JD79285	12/20/2023	X	X	X						X	X	X		X
114-MW61D	114-MW61D-121.0-20240318	N	D	JD84684	3/18/2024						X							
114-MW61D	114-MW61D-121.0-20240318	N	T	JD84684	3/18/2024	X	X	X						X	X	X		X
114-MW61D	114-MW61D-121.0-20240617	N	D	JD90605	6/17/2024						X							
114-MW61D	114-MW61D-121.0-20240617	N	T	JD90605	6/17/2024	X	X	X						X	X	X		X
114-MW61D	114-MW61D-121.0-20240916	N	D	JD96195	9/16/2024						X							
114-MW61D	114-MW61D-121.0-20240916	N	T	JD96195	9/16/2024	X	X	X						X	X	X		X
114-MW61D	114-MW61D-121.0-20240916-X	FD	D	JD96195	9/16/2024						X							
114-MW61D	114-MW61D-121.0-20240916-X	FD	T	JD96195	9/16/2024	X	X							X	X	X		X
114-MW61D	114-MW61D-121.0-20241217	N	D	JE2865	12/17/2024						X							
114-MW61D	114-MW61D-121.0-20241217	N	T	JE2865	12/17/2024	X	X	X						X	X	X		X
114-MW61D	114-MW61D-121.0-20241217-X	FD	D	JE2865	12/17/2024						X							
114-MW61D	114-MW61D-121.0-20241217-X	FD	T	JE2865	12/17/2024	X	X							X	X	X		X
114-MW61D	114-MW61D-121-20230630	N	D	4602833942	6/30/2023				X	X	X							
114-MW61D	114-MW61D-121-20230630	N	T	4602833942	6/30/2023	X	X	X						X	X	X	X	X
114-MW61D	114-MW61D-121-20230922	N	D	4602888091	9/22/2023	X	X		X	X	X			X	X		X	
114-MW61D	114-MW61D-121-20230922	N	T	4602888091	9/22/2023	X	X	X						X	X	X	X	X
114-MW61D	114-MW-61D-125.8-20211215	N	T	4602492051	12/15/2021	X	X							X	X		X	

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Well ID	Sample ID	Sample Type	Fraction	SDG	Date Collected	Chromium	Chromium (Hexavalent)	Field Measurements	Iron	Iron (Ferric)	Iron (Ferrous)	Manganese	Methane	Oxidation-Reduction Potential (ORP)	pH	Sulfate	Temperature	Total Organic Carbon
114-MW61D	114-MW61D-126.0-20230926	N	D	4602890021	9/26/2023	X	X		X	X	X			X	X		X	
114-MW61D	114-MW61D-126.0-20230926	N	T	4602890021	9/26/2023	X	X	X						X	X	X	X	X
114-MW61D	114-MW61D-126.0-20231220	N	D	JD79285	12/20/2023	X	X		X		X	X		X	X			
114-MW61D	114-MW61D-126.0-20231220	N	T	JD79285	12/20/2023	X	X	X						X	X	X		X
114-MW61D	114-MW61D-126.0-20240318	N	D	JD84684	3/18/2024						X							
114-MW61D	114-MW61D-126.0-20240318	N	T	JD84684	3/18/2024	X	X	X						X	X	X		X
114-MW61D	114-MW61D-126.0-20240619	N	D	JD90728	6/19/2024						X							
114-MW61D	114-MW61D-126.0-20240619	N	T	JD90728	6/19/2024	X	X	X						X	X	X		X
114-MW61D	114-MW61D-126.0-20240917	N	D	JD96274	9/17/2024						X							
114-MW61D	114-MW61D-126.0-20240917	N	T	JD96274	9/17/2024	X	X	X						X	X	X		X
114-MW61D	114-MW61D-126.0-20241217	N	D	JE2865	12/17/2024						X							
114-MW61D	114-MW61D-126.0-20241217	N	T	JE2865	12/17/2024	X	X	X						X	X	X		X
114-MW61D	114-MW61D-126-20230630	N	D	4602833942	6/30/2023				X	X	X							
114-MW61D	114-MW61D-126-20230630	N	T	4602833942	6/30/2023	X	X	X						X	X	X	X	X
114-MW61D	114-MW-61D-130.8-20211216	N	T	4602492741	12/16/2021	X	X							X	X		X	
114-MW61D	114-MW-61D-130.8-20211216X	FD	T	4602492741	12/16/2021	X	X							X	X		X	
114-MW61D	114-MW61D-130.8-20220421	N	T	4602567051	4/21/2022	X	X							X	X		X	
114-MW61D	114-MW61D-131.0-20230926	N	D	4602890021	9/26/2023	X	X		X	X	X			X	X		X	
114-MW61D	114-MW61D-131.0-20230926	N	T	4602890021	9/26/2023	X	X	X						X	X	X	X	X
114-MW61D	114-MW61D-131.0-20231219	N	D	JD79185	12/19/2023	X	X		X			X		X	X			
114-MW61D	114-MW61D-131.0-20231219	N	T	JD79185	12/19/2023	X	X	X						X	X	X		X
114-MW61D	114-MW61D-131.0-20240319	N	D	JD84758	3/19/2024						X							
114-MW61D	114-MW61D-131.0-20240319	N	T	JD84758	3/19/2024	X	X	X						X	X	X		X
114-MW61D	114-MW61D-131.0-20240619	N	D	JD90728	6/19/2024						X							
114-MW61D	114-MW61D-131.0-20240619	N	T	JD90728	6/19/2024	X	X	X						X	X	X		X
114-MW61D	114-MW61D-131.0-20240917	N	D	JD96274	9/17/2024						X							
114-MW61D	114-MW61D-131.0-20240917	N	T	JD96274	9/17/2024	X	X	X						X	X	X		X
114-MW61D	114-MW61D-131.0-20240917	N	D	JD96274	9/17/2024						X							
114-MW61D	114-MW61D-131.0-20240917	N	T	JD96274	9/17/2024	X	X	X						X	X	X		X
114-MW61D	114-MW61D-131.0-20241218	N	D	JE2940	12/18/2024						X							
114-MW61D	114-MW61D-131.0-20241218	N	T	JE2940	12/18/2024	X	X	X						X	X	X		X
114-MW61D	114-MW61D-131-20230703	N	D	4602835472	7/3/2023	X	X		X	X	X			X	X		X	
114-MW61D	114-MW61D-131-20230703	N	T	4602835472	7/3/2023	X	X	X						X	X	X	X	X
114-MW61D	114-MW-61D-135.8-20211216	N	T	4602492741	12/16/2021	X	X							X	X		X	
114-MW61D	114-MW61D-136.0-20230927	N	D	4602890621	9/27/2023	X	X		X	X	X			X	X		X	
114-MW61D	114-MW61D-136.0-20230927	N	T	4602890621	9/27/2023	X	X	X						X	X	X	X	X
114-MW61D	114-MW61D-136.0-20231219	N	D	JD79185	12/19/2023	X	X		X			X		X	X			
114-MW61D	114-MW61D-136.0-20231219	N	T	JD79185	12/19/2023	X	X	X						X	X	X		X
114-MW61D	114-MW61D-136.0-20240319	N	D	JD84758	3/19/2024						X							
114-MW61D	114-MW61D-136.0-20240319	N	T	JD84758	3/19/2024	X	X	X						X	X	X		X
114-MW61D	114-MW61D-136.0-20240619	N	D	JD90728	6/19/2024						X							
114-MW61D	114-MW61D-136.0-20240619	N	T	JD90728	6/19/2024	X	X	X						X	X	X		X
114-MW61D	114-MW61D-136.0-20240918	N	D	JD96352	9/18/2024						X							
114-MW61D	114-MW61D-136.0-20240918	N	T	JD96352	9/18/2024	X	X	X						X	X	X		X
114-MW61D	114-MW61D-136.0-20241218	N	D	JE2940	12/18/2024						X							
114-MW61D	114-MW61D-136.0-20241218	N	T	JE2940	12/18/2024	X	X	X						X	X	X		X
114-MW61D	114-MW61D-136-20230703	N	D	4602835472	7/3/2023	X	X		X	X	X			X	X		X	
114-MW61D	114-MW61D-136-20230703	N	T	4602835472	7/3/2023	X	X	X						X	X	X	X	X
114-MW62C	114-MW62C-73.0-20230925	N	D	4602889531	9/25/2023				X	X	X							
114-MW62C	114-MW62C-73.0-20230925	N	T	4602889531	9/25/2023	X	X	X						X	X	X	X	X
114-MW62C	114-MW62C-73.0-20231222	N	D	JD79443	12/22/2023				X									
114-MW62C	114-MW62C-73.0-20231222	N	T	JD79443	12/22/2023	X	X	X						X	X	X		X

Table 3-2
Groundwater Sampling Summary
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Garfield Avenue Group Sites
PPG, Jersey City, New Jersey

Well ID	Sample ID	Sample Type	Fraction	SDG	Date Collected	Chromium	Chromium (Hexavalent)	Field Measurements	Iron	Iron (Ferric)	Iron (Ferrous)	Manganese	Methane	Oxidation-Reduction Potential (ORP)	pH	Sulfate	Temperature	Total Organic Carbon
114-MW62C	114-MW62C-73.0-20240319	N	D	JD84758	3/19/2024						X							
114-MW62C	114-MW62C-73.0-20240319	N	T	JD84758	3/19/2024	X	X	X						X	X	X		X
114-MW62C	114-MW62C-73.0-20240617	N	D	JD90605	6/17/2024						X							
114-MW62C	114-MW62C-73.0-20240617	N	T	JD90605	6/17/2024	X	X	X						X	X	X		X
114-MW62C	114-MW62C-73.0-20240918	N	D	JD96352	9/18/2024						X							
114-MW62C	114-MW62C-73.0-20240918	N	T	JD96352	9/18/2024	X	X	X						X	X	X		X
114-MW62C	114-MW62C-73.0-20241213	N	D	JE2642	12/13/2024						X							
114-MW62C	114-MW62C-73.0-20241213	N	T	JE2642	12/13/2024	X	X	X						X	X	X		X
114-MW62C	114-MW62C-73-20230629	N	D	4602833322	6/29/2023				X	X	X							
114-MW62C	114-MW62C-73-20230629	N	T	4602833322	6/29/2023	X	X	X						X	X	X	X	X
114-MW64C	114-MW64C-94.5-20230628	N	D	4602832532	6/28/2023				X	X	X							
114-MW64C	114-MW64C-94.5-20230628	N	T	4602832532	6/28/2023	X	X	X						X	X	X	X	X
114-MW66D	114-MW-66D-118.5-20211214	N	T	4602491481	12/14/2021	X	X							X	X		X	
114-MW66D	114-MW-66D-121.5-20211214	N	T	4602491481	12/14/2021	X	X							X	X		X	
114-MW66D	114-MW-66D-124.0-20211214	N	T	4602491481	12/14/2021	X	X							X	X		X	
114-MW66D	114-MW-66D-128.0-20211215	N	T	4602492051	12/15/2021	X	X							X	X		X	
114-MW66D	114-MW-66D-128.0-20211215X	FD	T	4602492051	12/15/2021	X	X							X	X		X	
114-MW66D	114-MW-66D-140.0-20211221	N	T	4602496041	12/21/2021	X	X							X	X		X	
114-MW66D-Port1	114-MW66D-91.0-97.0-20230927	N	D	4602890621	9/27/2023				X	X	X							
114-MW66D-Port1	114-MW66D-91.0-97.0-20230927	N	T	4602890621	9/27/2023	X	X	X						X	X	X	X	X
114-MW66D-Port1	114-MW66D-91.0-97.0-20230927X	FD	D	4602890621	9/27/2023				X	X	X							
114-MW66D-Port1	114-MW66D-91.0-97.0-20230927X	FD	T	4602890621	9/27/2023	X	X							X	X	X	X	X
114-MW66D-Port1	114-MW66D-91-97-20220421	N	T	4602567051	4/21/2022	X	X							X	X		X	
114-MW66D-Port1	114-MW66D-91-97-20220421-X	FD	T	4602567051	4/21/2022	X	X							X	X		X	
114-MW66D-Port1	114-MW66D-91-97-20220513	N	T	4602580871	5/13/2022	X	X							X	X		X	
114-MW66D-Port1	114-MW66D-91-97-20220513-X	FD	T	4602580871	5/13/2022	X	X							X	X		X	
114-MW66D-Port1	114-MW66D-91-97-20220603	N	T	4602593611	6/3/2022	X	X							X	X		X	X
114-MW66D-Port1	114-MW66D-91-97-20220603-X	FD	T	4602593611	6/3/2022	X	X											
114-MW66D-Port1	114-MW66D-91-97-20220705	N	T	4602613181	7/5/2022	X	X							X	X		X	X
114-MW66D-Port1	114-MW66D-91-97-20220705-X	FD	T	4602613181	7/5/2022	X	X							X	X		X	
114-MW66D-Port1	114-MW66D-91-97-20220804	N	T	4602632541	8/4/2022	X	X							X	X		X	
114-MW66D-Port1	114-MW66D-91-97-20220804-X	FD	T	4602632541	8/4/2022	X	X											
114-MW66D-Port1	114-MW66D-91-97-20230628	N	D	4602832532	6/28/2023				X	X	X							
114-MW66D-Port1	114-MW66D-91-97-20230628	N	T	4602832532	6/28/2023	X	X							X	X	X	X	X
114-MW66D-Port1	114-MW66D-91-97-20231215	N	D	JD78984	12/15/2023				X			X						
114-MW66D-Port1	114-MW66D-91-97-20231215	N	T	JD78984	12/15/2023	X	X	X						X	X	X		X
114-MW66D-Port1	114-MW66D-91-97-20240319	N	D	JD84758	3/19/2024						X							
114-MW66D-Port1	114-MW66D-91-97-20240319	N	T	JD84758	3/19/2024	X	X	X						X	X	X		X
114-MW66D-Port1	114-MW66D-91-97-20240617	N	D	JD90605	6/17/2024						X							
114-MW66D-Port1	114-MW66D-91-97-20240617	N	T	JD90605	6/17/2024	X	X	X						X	X	X		X
114-MW66D-Port1	114-MW66D-91-97-20240917	N	D	JD96274	9/17/2024						X							
114-MW66D-Port1	114-MW66D-91-97-20240917	N	T	JD96274	9/17/2024	X	X	X						X	X	X		X
114-MW66D-Port1	114-MW66D-91-97-20241217	N	D	JE2865	12/17/2024						X							
114-MW66D-Port1	114-MW66D-91-97-20241217	N	T	JE2865	12/17/2024	X	X	X						X	X	X		X
114-MW66D-Port2	114-MW66D-107.0-111.0-20230927	N	D	4602890621	9/27/2023				X	X	X							
114-MW66D-Port2	114-MW66D-107.0-111.0-20230927	N	T	4602890621	9/27/2023	X	X							X	X	X	X	X
114-MW66D-Port2	114-MW66D-107-111-20220421	N	T	4602567051	4/21/2022	X	X							X	X		X	
114-MW66D-Port2	114-MW66D-107-111-20220603	N	T	4602593611	6/3/2022	X	X							X	X		X	X
114-MW66D-Port2	114-MW66D-107-111-20220705	N	T	4602613181	7/5/2022	X	X							X	X		X	X
114-MW66D-Port2	114-MW66D-107-111-20230628	N	D	4602832532	6/28/2023				X	X	X							
114-MW66D-Port2	114-MW66D-107-111-20230628	N	T	4602832532	6/28/2023	X	X	X						X	X	X	X	X

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Groundwater Sampling Summary
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PPG, Jersey City, New Jersey

Well ID	Sample ID	Sample Type	Fraction	SDG	Date Collected	Chromium	Chromium (Hexavalent)	Field Measurements	Iron	Iron (Ferric)	Iron (Ferrous)	Manganese	Methane	Oxidation-Reduction Potential (ORP)	pH	Sulfate	Temperature	Total Organic Carbon
114-MW66D-Port2	114-MW66D-107-111-20231215	N	D	JD78984	12/15/2023				X			X						
114-MW66D-Port2	114-MW66D-107-111-20231215	N	T	JD78984	12/15/2023	X	X	X						X	X	X		X
114-MW66D-Port2	114-MW66D-107-111-20240319	N	D	JD84758	3/19/2024						X							
114-MW66D-Port2	114-MW66D-107-111-20240319	N	T	JD84758	3/19/2024	X	X	X						X	X	X		X
114-MW66D-Port2	114-MW66D-107-111-20240617	N	D	JD90605	6/17/2024						X							
114-MW66D-Port2	114-MW66D-107-111-20240617	N	T	JD90605	6/17/2024	X	X	X						X	X	X		X
114-MW66D-Port2	114-MW66D-107-111-20240917	N	D	JD96274	9/17/2024						X							
114-MW66D-Port2	114-MW66D-107-111-20240917	N	T	JD96274	9/17/2024	X	X	X						X	X	X		X
114-MW66D-Port2	114-MW66D-107-111-20241217	N	D	JE2865	12/17/2024						X							
114-MW66D-Port2	114-MW66D-107-111-20241217	N	T	JE2865	12/17/2024	X	X	X						X	X	X		X
114-MW66D-Port3	114-MW66D-118.0-123.0-20230927	N	D	4602890621	9/27/2023				X	X	X							
114-MW66D-Port3	114-MW66D-118.0-123.0-20230927	N	T	4602890621	9/27/2023	X	X	X						X	X	X	X	X
114-MW66D-Port3	114-MW66D-118-123-20220421	N	T	4602567051	4/21/2022	X	X							X	X		X	
114-MW66D-Port3	114-MW66D-118-123-20220603	N	T	4602593611	6/3/2022	X	X							X	X		X	X
114-MW66D-Port3	114-MW66D-118-123-20220705	N	T	4602613181	7/5/2022	X	X							X	X		X	X
114-MW66D-Port3	114-MW66D-118-123-20230628	N	D	4602832532	6/28/2023				X	X	X							
114-MW66D-Port3	114-MW66D-118-123-20230628	N	T	4602832532	6/28/2023	X	X	X						X	X	X	X	X
114-MW66D-Port3	114-MW66D-118-123-20231215	N	D	JD78984	12/15/2023				X			X						
114-MW66D-Port3	114-MW66D-118-123-20231215	N	T	JD78984	12/15/2023	X	X	X						X	X	X		X
114-MW66D-Port3	114-MW66D-118-123-20240319	N	D	JD84758	3/19/2024						X							
114-MW66D-Port3	114-MW66D-118-123-20240319	N	T	JD84758	3/19/2024	X	X	X						X	X	X		X
114-MW66D-Port3	114-MW66D-118-123-20240617	N	D	JD90605	6/17/2024						X							
114-MW66D-Port3	114-MW66D-118-123-20240617	N	T	JD90605	6/17/2024	X	X	X						X	X	X		X
114-MW66D-Port3	114-MW66D-118-123-20240917	N	D	JD96274	9/17/2024						X							
114-MW66D-Port3	114-MW66D-118-123-20240917	N	T	JD96274	9/17/2024	X	X	X						X	X	X		X
114-MW66D-Port3	114-MW66D-118-123-20241217	N	D	JE2865	12/17/2024						X							
114-MW66D-Port3	114-MW66D-118-123-20241217	N	T	JE2865	12/17/2024	X	X	X						X	X	X		X
114-MW66D-Port4	114-MW66D-124.0-129.0-20230927	N	D	4602890621	9/27/2023				X	X	X							
114-MW66D-Port4	114-MW66D-124.0-129.0-20230927	N	T	4602890621	9/27/2023	X	X	X						X	X	X	X	X
114-MW66D-Port4	114-MW66D-124-129-20220421	N	T	4602567051	4/21/2022	X	X							X	X		X	
114-MW66D-Port4	114-MW66D-124-129-20220603	N	T	4602593611	6/3/2022	X	X							X	X		X	X
114-MW66D-Port4	114-MW66D-124-129-20220705	N	T	4602613181	7/5/2022	X	X							X	X		X	X
114-MW66D-Port4	114-MW66D-124-129-20230628	N	D	4602832532	6/28/2023				X	X	X							
114-MW66D-Port4	114-MW66D-124-129-20230628	N	T	4602832532	6/28/2023	X	X	X						X	X	X	X	X
114-MW66D-Port4	114-MW66D-124-129-20231215	N	D	JD78984	12/15/2023				X			X						
114-MW66D-Port4	114-MW66D-124-129-20231215	N	T	JD78984	12/15/2023	X	X	X						X	X	X		X
114-MW66D-Port4	114-MW66D-124-129-20240319	N	D	JD84758	3/19/2024						X							
114-MW66D-Port4	114-MW66D-124-129-20240319	N	T	JD84758	3/19/2024	X	X	X						X	X	X		X
114-MW66D-Port4	114-MW66D-124-129-20240617	N	D	JD90605	6/17/2024						X							
114-MW66D-Port4	114-MW66D-124-129-20240617	N	T	JD90605	6/17/2024	X	X	X						X	X	X		X
114-MW66D-Port4	114-MW66D-124-129-20240917	N	D	JD96274	9/17/2024						X							
114-MW66D-Port4	114-MW66D-124-129-20240917	N	T	JD96274	9/17/2024	X	X	X						X	X	X		X
114-MW66D-Port4	114-MW66D-124-129-20241217	N	D	JE2865	12/17/2024						X							
114-MW66D-Port4	114-MW66D-124-129-20241217	N	T	JE2865	12/17/2024	X	X	X						X	X	X		X
114-MW66D-Port5	114-MW66D-137.0-140.0-20230927	N	D	4602890621	9/27/2023				X	X	X							
114-MW66D-Port5	114-MW66D-137.0-140.0-20230927	N	T	4602890621	9/27/2023	X	X	X						X	X	X	X	X
114-MW66D-Port5	114-MW66D-137-140-20220421	N	T	4602567051	4/21/2022	X	X							X	X		X	
114-MW66D-Port5	114-MW66D-137-140-20220603	N	T	4602593611	6/3/2022	X	X							X	X		X	X
114-MW66D-Port5	114-MW66D-137-140-20220705	N	T	4602613181	7/5/2022	X	X							X	X		X	X
114-MW66D-Port5	114-MW66D-137-140-20230628	N	D	4602832532	6/28/2023				X	X	X							
114-MW66D-Port5	114-MW66D-137-140-20230628	N	T	4602832532	6/28/2023	X	X	X						X	X	X	X	X

Table 3-2
Groundwater Sampling Summary
Addendum to Groundwater Remedial Investigation Report
Garfield Avenue Group Sites
PPG, Jersey City, New Jersey

Well ID	Sample ID	Sample Type	Fraction	SDG	Date Collected	Chromium	Chromium (Hexavalent)	Field Measurements	Iron	Iron (Ferric)	Iron (Ferrous)	Manganese	Methane	Oxidation-Reduction Potential (ORP)	pH	Sulfate	Temperature	Total Organic Carbon
114-MW66D-Port5	114-MW66D-137-140-20231215	N	D	JD78984	12/15/2023				X			X						
114-MW66D-Port5	114-MW66D-137-140-20231215	N	T	JD78984	12/15/2023	X	X	X						X	X	X		X
114-MW66D-Port5	114-MW66D-137-140-20240319	N	D	JD84758	3/19/2024						X							
114-MW66D-Port5	114-MW66D-137-140-20240319	N	T	JD84758	3/19/2024	X	X	X						X	X	X		X
114-MW66D-Port5	114-MW66D-137-140-20240617	N	D	JD90605	6/17/2024						X							
114-MW66D-Port5	114-MW66D-137-140-20240617	N	T	JD90605	6/17/2024	X	X	X						X	X	X		X
114-MW66D-Port5	114-MW66D-137-140-20240917	N	D	JD96274	9/17/2024						X							
114-MW66D-Port5	114-MW66D-137-140-20240917	N	T	JD96274	9/17/2024	X	X	X						X	X	X		X
114-MW66D-Port5	114-MW66D-137-140-20241217	N	D	JE2865	12/17/2024						X							
114-MW66D-Port5	114-MW66D-137-140-20241217	N	T	JE2865	12/17/2024	X	X	X						X	X	X		X
114-MW71D	114-MW-71D-119.0-20211214	N	T	4602491481	12/14/2021	X	X							X	X		X	
114-MW71D	114-MW-71D-126.0-20211214	N	T	4602491481	12/14/2021	X	X							X	X		X	
114-MW71D	114-MW-71D-132.5-20211214	N	T	4602491481	12/14/2021	X	X							X	X		X	
114-MW71D	114-MW-71D-137.0-20211215	N	T	4602492051	12/15/2021	X	X							X	X		X	
114-MW71D	114-MW-71D-141.5-20211221	N	T	4602496041	12/21/2021	X	X							X	X		X	
114-MW72D	114-MW-72D-103.5-20211215	N	T	4602492051	12/15/2021	X	X							X	X		X	
114-MW72D	114-MW-72D-113.5-20211215	N	T	4602492051	12/15/2021	X	X							X	X		X	
114-MW72D	114-MW-72D-125.0-20211216	N	T	4602492741	12/16/2021	X	X							X	X		X	
114-MW72D-Port1	114-MW72D-102.0-106.0-20230927	N	D	4602890621	9/27/2023	X	X		X	X	X			X	X		X	
114-MW72D-Port1	114-MW72D-102.0-106.0-20230927	N	T	4602890621	9/27/2023	X	X	X						X	X	X	X	X
114-MW72D-Port1	114-MW72D-102-106-20220421	N	T	4602567051	4/21/2022	X	X							X	X		X	
114-MW72D-Port1	114-MW72D-102-106-20220603	N	T	4602593611	6/3/2022	X	X							X	X		X	X
114-MW72D-Port1	114-MW72D-102-106-20220705	N	T	4602613181	7/5/2022	X	X							X	X		X	X
114-MW72D-Port1	114-MW72D-102-106-20220804	N	T	4602632541	8/4/2022	X	X							X	X		X	
114-MW72D-Port1	114-MW72D-102-106-20230627	N	D	4602831932	6/27/2023				X	X	X							
114-MW72D-Port1	114-MW72D-102-106-20230627	N	T	4602831932	6/27/2023	X	X	X						X	X	X	X	X
114-MW72D-Port1	114-MW72D-102-106-20230726	N	D	4602849651	7/26/2023				X	X	X							
114-MW72D-Port1	114-MW72D-102-106-20230627	N	T	4602831932	6/27/2023	X	X	X						X	X	X	X	X
114-MW72D-Port1	114-MW72D-102-106-20230726	N	D	4602849651	7/26/2023				X	X	X							
114-MW72D-Port1	114-MW72D-102-106-20230726	N	T	4602849651	7/26/2023	X	X	X						X	X	X	X	X
114-MW72D-Port1	114-MW72D-102-106-20231220	N	D	JD79285	12/20/2023	X	X		X		X	X		X	X			
114-MW72D-Port1	114-MW72D-102-106-20231220	N	T	JD79285	12/20/2023	X	X	X						X	X	X		X
114-MW72D-Port1	114-MW72D-102-106-20240319	N	D	JD84758	3/19/2024						X							
114-MW72D-Port1	114-MW72D-102-106-20240319	N	T	JD84758	3/19/2024	X	X	X						X	X	X		X
114-MW72D-Port1	114-MW72D-102-106-20240621	N	D	JD90886	6/21/2024	X	X				X			X	X			
114-MW72D-Port1	114-MW72D-102-106-20240621	N	T	JD90886	6/21/2024	X	X	X						X	X	X		X
114-MW72D-Port1	114-MW72D-102-106-20240813	N	D	JD93987	8/13/2024						X							
114-MW72D-Port1	114-MW72D-102-106-20240813	N	T	JD93987	8/13/2024	X	X	X						X	X	X		X
114-MW72D-Port1	114-MW72D-102-106-20240919	N	D	JD96459	9/19/2024						X							
114-MW72D-Port1	114-MW72D-102-106-20240919	N	T	JD96459	9/19/2024	X	X	X						X	X	X		X
114-MW72D-Port1	114-MW72D-102-106-20241217	N	D	JE2865	12/17/2024	X	X				X			X	X			
114-MW72D-Port1	114-MW72D-102-106-20241217	N	T	JE2865	12/17/2024	X	X	X						X	X	X		X
114-MW72D-Port2	114-MW72D-110.0-114.0-20230927	N	D	4602890621	9/27/2023	X	X		X	X	X			X	X		X	
114-MW72D-Port2	114-MW72D-110.0-114.0-20230927	N	T	4602890621	9/27/2023	X	X	X						X	X	X	X	X
114-MW72D-Port2	114-MW72D-110-114-20220421	N	T	4602567051	4/21/2022	X	X							X	X		X	
114-MW72D-Port2	114-MW72D-110-114-20220603	N	T	4602593611	6/3/2022	X	X							X	X		X	X
114-MW72D-Port2	114-MW72D-110-114-20220705	N	T	4602613181	7/5/2022	X	X							X	X		X	X
114-MW72D-Port2	114-MW72D-110-114-20220804	N	T	4602632541	8/4/2022	X	X							X	X		X	
114-MW72D-Port2	114-MW72D-110-114-20230627	N	D	4602831932	6/27/2023				X	X	X							
114-MW72D-Port2	114-MW72D-110-114-20230627	N	T	4602831932	6/27/2023	X	X	X						X	X	X	X	X
114-MW72D-Port2	114-MW72D-110-114-20230726	N	D	4602849651	7/26/2023				X	X	X							
114-MW72D-Port2	114-MW72D-110-114-20230726	N	T	4602849651	7/26/2023	X	X	X						X	X	X	X	X

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PPG, Jersey City, New Jersey

Well ID	Sample ID	Sample Type	Fraction	SDG	Date Collected	Chromium	Chromium (Hexavalent)	Field Measurements	Iron	Iron (Ferric)	Iron (Ferrous)	Manganese	Methane	Oxidation-Reduction Potential (ORP)	pH	Sulfate	Temperature	Total Organic Carbon
114-MW72D-Port2	114-MW72D-110-114-20231220	N	D	JD79285	12/20/2023	X	X		X		X	X		X	X			
114-MW72D-Port2	114-MW72D-110-114-20231220	N	T	JD79285	12/20/2023	X	X	X						X	X	X		X
114-MW72D-Port2	114-MW72D-110-114-20240319	N	D	JD84758	3/19/2024						X							
114-MW72D-Port2	114-MW72D-110-114-20240319	N	T	JD84758	3/19/2024	X	X	X						X	X	X		X
114-MW72D-Port2	114-MW72D-110-114-20240621	N	D	JD90886	6/21/2024	X	X				X			X	X			
114-MW72D-Port2	114-MW72D-110-114-20240621	N	T	JD90886	6/21/2024	X	X	X						X	X	X		X
114-MW72D-Port2	114-MW72D-110-114-20240813	N	D	JD93987	8/13/2024						X							
114-MW72D-Port2	114-MW72D-110-114-20240813	N	T	JD93987	8/13/2024	X	X	X						X	X	X		X
114-MW72D-Port2	114-MW72D-110-114-20240919	N	D	JD96459	9/19/2024						X							
114-MW72D-Port2	114-MW72D-110-114-20240919	N	T	JD96459	9/19/2024	X	X	X						X	X	X		X
114-MW72D-Port2	114-MW72D-110-114-20241217	N	D	JE2865	12/17/2024						X							
114-MW72D-Port2	114-MW72D-110-114-20241217	N	T	JE2865	12/17/2024	X	X	X						X	X	X		X
114-MW72D-Port3	114-MW72D-116.0-119.0-20230927	N	D	4602890621	9/27/2023	X	X		X	X	X			X	X		X	
114-MW72D-Port3	114-MW72D-116.0-119.0-20230927	N	T	4602890621	9/27/2023	X	X	X						X	X	X	X	X
114-MW72D-Port3	114-MW72D-116-119-20220421	N	T	4602567051	4/21/2022	X	X							X	X		X	
114-MW72D-Port3	114-MW72D-116-119-20220603	N	T	4602593611	6/3/2022	X	X							X	X		X	X
114-MW72D-Port3	114-MW72D-116-119-20220705	N	T	4602613181	7/5/2022	X	X							X	X		X	X
114-MW72D-Port3	114-MW72D-116-119-20230627	N	D	4602831932	6/27/2023				X	X	X							
114-MW72D-Port3	114-MW72D-116-119-20230627	N	T	4602831932	6/27/2023	X	X	X						X	X	X	X	X
114-MW72D-Port3	114-MW72D-116-119-20230726	N	D	4602849651	7/26/2023				X	X	X							
114-MW72D-Port3	114-MW72D-116-119-20230726	N	T	4602849651	7/26/2023	X	X	X						X	X	X	X	X
114-MW72D-Port3	114-MW72D-116-119-20231220	N	D	JD79285	12/20/2023	X	X		X		X	X		X	X			
114-MW72D-Port3	114-MW72D-116-119-20231220	N	T	JD79285	12/20/2023	X	X	X						X	X	X		X
114-MW72D-Port3	114-MW72D-116-119-20240319	N	D	JD84758	3/19/2024						X							
114-MW72D-Port3	114-MW72D-116-119-20240319	N	T	JD84758	3/19/2024	X	X	X						X	X	X		X
114-MW72D-Port3	114-MW72D-116-119-20240621	N	D	JD90886	6/21/2024	X	X				X			X	X			
114-MW72D-Port3	114-MW72D-116-119-20240621	N	T	JD90886	6/21/2024	X	X	X						X	X	X		X
114-MW72D-Port3	114-MW72D-116-119-20240813	N	D	JD93987	8/13/2024						X							
114-MW72D-Port3	114-MW72D-116-119-20240813	N	T	JD93987	8/13/2024	X	X	X						X	X	X		X
114-MW72D-Port3	114-MW72D-116-119-20240919	N	D	JD96459	9/19/2024						X							
114-MW72D-Port3	114-MW72D-116-119-20240919	N	T	JD96459	9/19/2024	X	X	X						X	X	X		X
114-MW72D-Port3	114-MW72D-116-119-20241217	N	D	JE2865	12/17/2024						X							
114-MW72D-Port3	114-MW72D-116-119-20241217	N	T	JE2865	12/17/2024	X	X	X						X	X	X		X
114-MW72D-Port4	114-MW72D-123.0-126.0-20230927	N	D	4602890621	9/27/2023	X	X		X	X	X			X	X		X	
114-MW72D-Port4	114-MW72D-123.0-126.0-20230927	N	T	4602890621	9/27/2023	X	X	X						X	X	X	X	X
114-MW72D-Port4	114-MW72D-123-126-20220421	N	T	4602567051	4/21/2022	X	X							X	X		X	
114-MW72D-Port4	114-MW72D-123-126-20220603	N	T	4602593611	6/3/2022	X	X							X	X		X	X
114-MW72D-Port4	114-MW72D-123-126-20220705	N	T	4602613181	7/5/2022	X	X							X	X		X	X
114-MW72D-Port4	114-MW72D-123-126-20230627	N	D	4602831932	6/27/2023				X	X	X							
114-MW72D-Port4	114-MW72D-123-126-20230627	N	T	4602831932	6/27/2023	X	X	X						X	X	X	X	X
114-MW72D-Port4	114-MW72D-123-126-20230726	N	D	4602849651	7/26/2023				X	X	X							
114-MW72D-Port4	114-MW72D-123-126-20230726	N	T	4602849651	7/26/2023	X	X	X						X	X	X	X	X
114-MW72D-Port4	114-MW72D-123-126-20231220	N	D	JD79285	12/20/2023	X	X		X		X	X		X	X			
114-MW72D-Port4	114-MW72D-123-126-20231220	N	T	JD79285	12/20/2023	X	X	X						X	X	X		X
114-MW72D-Port4	114-MW72D-123-126-20240319	N	D	JD84758	3/19/2024						X							
114-MW72D-Port4	114-MW72D-123-126-20240319	N	T	JD84758	3/19/2024	X	X	X						X	X	X		X
114-MW72D-Port4	114-MW72D-123-126-20240621	N	D	JD90886	6/21/2024	X	X				X			X	X			
114-MW72D-Port4	114-MW72D-123-126-20240621	N	T	JD90886	6/21/2024	X	X	X						X	X	X		X
114-MW72D-Port4	114-MW72D-123-126-20240813	N	D	JD93987	8/13/2024						X							
114-MW72D-Port4	114-MW72D-123-126-20240813	N	T	JD93987	8/13/2024	X	X	X						X	X	X		X

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Well ID	Sample ID	Sample Type	Fraction	SDG	Date Collected	Chromium	Chromium (Hexavalent)	Field Measurements	Iron	Iron (Ferric)	Iron (Ferrous)	Manganese	Methane	Oxidation-Reduction Potential (ORP)	pH	Sulfate	Temperature	Total Organic Carbon
114-MW72D-Port4	114-MW72D-123-126-20240919	N	D	JD96459	9/19/2024						X							
114-MW72D-Port4	114-MW72D-123-126-20240919	N	T	JD96459	9/19/2024	X	X	X						X	X	X		X
114-MW72D-Port4	114-MW72D-123-126-20241217	N	D	JE2865	12/17/2024						X							
114-MW72D-Port4	114-MW72D-123-126-20241217	N	T	JE2865	12/17/2024	X	X	X						X	X	X		X
114-MW75WR	114-MW75WR-118.0-20240530	N	D	JD89452	5/30/2024	X	X		X		X	X		X	X			
114-MW75WR	114-MW75WR-118.0-20240530	N	T	JD89452	5/30/2024	X	X	X					X	X	X	X		X
114-MW75WR	114-MW75WR-118.0-20240807	N	D	JD93595	8/7/2024	X	X							X	X			
114-MW75WR	114-MW75WR-118.0-20240807	N	T	JD93595	8/7/2024	X	X	X						X	X	X		X
114-MW75WR	114-MW75WR-118.0-20240906	N	D	JD95614	9/6/2024	X	X							X	X			
114-MW75WR	114-MW75WR-118.0-20240906	N	T	JD95614	9/6/2024	X	X	X						X	X	X		X
114-MW75WR	114-MW75WR-118.0-20241001	N	D	JD97187	10/1/2024	X	X							X	X			
114-MW75WR	114-MW75WR-118.0-20241001	N	T	JD97187	10/1/2024	X	X	X						X	X	X		X
114-MW75WR	114-MW75WR-118.0-20241105	N	D	JD99684	11/5/2024	X	X							X	X			
114-MW75WR	114-MW75WR-118.0-20241105	N	T	JD99684	11/5/2024	X	X	X						X	X	X		X
114-MW75WR	114-MW75WR-118.0-20241204	N	D	JE1940	12/4/2024	X	X				X			X	X			
114-MW75WR	114-MW75WR-118.0-20241204	N	T	JE1940	12/4/2024	X	X	X						X	X	X		X
114-MW75WR	114-MW75WR-118.5-20240116	N	D	JD80633	1/16/2024	X	X				X			X	X			
114-MW75WR	114-MW75WR-118.5-20240116	N	T	JD80633	1/16/2024	X	X	X						X	X	X		X
114-MW75WR	114-MW75WR-118.5-20240321	N	D	JD84943	3/21/2024						X							
114-MW75WR	114-MW75WR-118.5-20240321	N	T	JD84943	3/21/2024	X	X	X						X	X	X		X
114-MW76D	114-MW76D-103.75-20240705	N	T	JD91702	7/5/2024	X	X	X						X	X			X
114-MW76D	114-MW76D-103.75-20240812	N	D	JD93902	8/12/2024						X							
114-MW76D	114-MW76D-103.75-20240812	N	T	JD93902	8/12/2024	X	X	X						X	X	X		X
114-MW76D	114-MW76D-103.75-20240916	N	D	JD96195	9/16/2024						X							
114-MW76D	114-MW76D-103.75-20240916	N	T	JD96195	9/16/2024	X	X	X						X	X	X		X
114-MW76D	114-MW76D-103.75-20241216	N	D	JE2768	12/16/2024						X							
114-MW76D	114-MW76D-103.75-20241216	N	T	JE2768	12/16/2024	X	X	X						X	X	X		X
114-MW76D	114-MW76D-108.75-20240709	N	T	JD91859	7/9/2024	X	X	X						X	X			X
114-MW76D	114-MW76D-108.75-20240709-X	FD	T	JD91859	7/9/2024	X	X							X	X			X
114-MW76D	114-MW76D-108.75-20240812	N	D	JD93902	8/12/2024						X							
114-MW76D	114-MW76D-108.75-20240812	N	T	JD93902	8/12/2024	X	X	X						X	X	X		X
114-MW76D	114-MW76D-108.75-20240916	N	D	JD96195	9/16/2024						X							
114-MW76D	114-MW76D-108.75-20240916	N	T	JD96195	9/16/2024	X	X	X						X	X	X		X
114-MW76D	114-MW76D-108.75-20241216	N	D	JE2768	12/16/2024						X							
114-MW76D	114-MW76D-108.75-20241216	N	T	JE2768	12/16/2024	X	X	X						X	X	X		X
114-MW76D	114-MW76D-113.75-20240709	N	T	JD91859	7/9/2024	X	X	X						X	X			X
114-MW76D	114-MW76D-113.75-20240813	N	D	JD93987	8/13/2024						X							
114-MW76D	114-MW76D-113.75-20240813	N	T	JD93987	8/13/2024	X	X	X						X	X	X		X
114-MW76D	114-MW76D-113.75-20240813-X	FD	D	JD93987	8/13/2024						X							
114-MW76D	114-MW76D-113.75-20240813-X	FD	T	JD93987	8/13/2024	X	X							X	X	X		X
114-MW76D	114-MW76D-113.75-20240917	N	D	JD96274	9/17/2024						X							
114-MW76D	114-MW76D-113.75-20240917	N	T	JD96274	9/17/2024	X	X	X						X	X	X		X
114-MW76D	114-MW76D-113.75-20241217	N	D	JE2865	12/17/2024						X							
114-MW76D	114-MW76D-113.75-20241217	N	T	JE2865	12/17/2024	X	X	X						X	X	X		X
114-MW76D	114-MW76D-118.75-20240709	N	T	JD91859	7/9/2024	X	X	X						X	X			X
114-MW76D	114-MW76D-118.75-20240813	N	D	JD93987	8/13/2024						X							
114-MW76D	114-MW76D-118.75-20240813	N	T	JD93987	8/13/2024	X	X	X						X	X	X		X
114-MW76D	114-MW76D-118.75-20240917	N	D	JD96274	9/17/2024						X							
114-MW76D	114-MW76D-118.75-20240917	N	T	JD96274	9/17/2024	X	X	X						X	X	X		X
114-MW76D	114-MW76D-118.75-20241217	N	D	JE2865	12/17/2024						X							
114-MW76D	114-MW76D-118.75-20241217	N	T	JE2865	12/17/2024	X	X	X						X	X	X		X
114-MW76D	114-MW76D-123.75-20240710	N	T	JD91932	7/10/2024	X	X	X						X	X			X
114-MW76D	114-MW76D-123.75-20240813	N	D	JD93987	8/13/2024						X							

Table 3-2
Groundwater Sampling Summary
Addendum to Groundwater Remedial Investigation Report
Garfield Avenue Group Sites
PPG, Jersey City, New Jersey

Well ID	Sample ID	Sample Type	Fraction	SDG	Date Collected	Chromium	Chromium (Hexavalent)	Field Measurements	Iron	Iron (Ferric)	Iron (Ferrous)	Manganese	Methane	Oxidation-Reduction Potential (ORP)	pH	Sulfate	Temperature	Total Organic Carbon
114-MW76D	114-MW76D-123.75-20240813	N	T	JD93987	8/13/2024	X	X	X						X	X	X		X
114-MW76D	114-MW76D-123.75-20240918	N	D	JD96352	9/18/2024						X							
114-MW76D	114-MW76D-123.75-20240918	N	T	JD96352	9/18/2024	X	X	X						X	X	X		X
114-MW76D	114-MW76D-123.75-20241218	N	D	JE2940	12/18/2024						X							
114-MW76D	114-MW76D-123.75-20241218	N	T	JE2940	12/18/2024	X	X	X						X	X	X		X
114-MW76D	114-MW76D-123.75-20241218-X	FD	D	JE2940	12/18/2024						X							
114-MW76D	114-MW76D-123.75-20241218-X	FD	T	JE2940	12/18/2024	X	X							X	X	X		X
114-MW76WR	114-MW76WR-57.0-20240805	N	D	JD93435	8/5/2024	X	X							X	X			
114-MW76WR	114-MW76WR-57.0-20240805	N	T	JD93435	8/5/2024	X	X	X						X	X	X		X
114-MW76WR	114-MW76WR-57.0-20240904	N	D	JD95426	9/4/2024	X	X							X	X			
114-MW76WR	114-MW76WR-57.0-20240904	N	T	JD95426	9/4/2024	X	X	X						X	X	X		X
114-MW76WR	114-MW76WR-57.0-20241016	N	D	JD98353	10/16/2024	X	X							X	X			
114-MW76WR	114-MW76WR-57.0-20241016	N	T	JD98353	10/16/2024	X	X	X						X	X	X		X
114-MW76WR	114-MW76WR-57.0-20241104	N	D	JD99628	11/4/2024	X	X							X	X			
114-MW76WR	114-MW76WR-57.0-20241104	N	T	JD99628	11/4/2024	X	X	X						X	X	X		X
114-MW76WR	114-MW76WR-57.0-20241205	N	D	JE2028	12/5/2024	X	X							X	X			
114-MW76WR	114-MW76WR-57.0-20241205	N	T	JE2028	12/5/2024	X	X	X						X	X	X		X
114-MW76WR	114-MW76WR-57.5-20240528	N	D	JD89297	5/28/2024	X	X		X			X		X	X			
114-MW76WR	114-MW76WR-57.5-20240528	N	T	JD89297	5/28/2024	X	X	X					X	X	X	X		X
114-MW76WR	114-MW76WR-60.0-20240521	N	T	JD88878	5/21/2024	X	X	X						X	X			
114-MW76WR	114-MW76WR-62.0-20240806	N	D	JD93519	8/6/2024	X	X							X	X			
114-MW76WR	114-MW76WR-62.0-20240806	N	T	JD93519	8/6/2024	X	X	X						X	X	X		X
114-MW76WR	114-MW76WR-62.5-20240528	N	D	JD89297	5/28/2024	X	X		X			X		X	X			
114-MW76WR	114-MW76WR-62.5-20240528	N	T	JD89297	5/28/2024	X	X	X					X	X	X	X		X
114-MW77WR	114-MW77WR-57.0-20240528	N	D	JD89297	5/28/2024	X	X		X			X		X	X			
114-MW77WR	114-MW77WR-57.0-20240528	N	T	JD89297	5/28/2024	X	X	X					X	X	X	X		X
114-MW77WR	114-MW77WR-57.0-20240805	N	D	JD93435	8/5/2024	X	X							X	X			
114-MW77WR	114-MW77WR-57.0-20240805	N	T	JD93435	8/5/2024	X	X	X						X	X	X		X
114-MW77WR	114-MW77WR-57.0-20240903	N	D	JD95322	9/3/2024	X	X							X	X			
114-MW77WR	114-MW77WR-57.0-20240903	N	T	JD95322	9/3/2024	X	X	X						X	X	X		X
114-MW77WR	114-MW77WR-60.0-20240521	N	T	JD88878	5/21/2024	X	X	X						X	X			
114-MW77WR	114-MW77WR-62.0-20240528	N	D	JD89297	5/28/2024	X	X		X			X		X	X			
114-MW77WR	114-MW77WR-62.0-20240528	N	T	JD89297	5/28/2024	X	X	X					X	X	X	X		X
114-MW77WR	114-MW77WR-62.0-20240805	N	D	JD93435	8/5/2024	X	X							X	X			
114-MW77WR	114-MW77WR-62.0-20240805	N	T	JD93435	8/5/2024	X	X	X						X	X	X		X
114-MW78WR	114-MW78WR-76.0-20240806	N	D	JD93519	8/6/2024	X	X							X	X			
114-MW78WR	114-MW78WR-76.0-20240806	N	T	JD93519	8/6/2024	X	X	X						X	X	X		X
114-MW78WR	114-MW78WR-76.5-20240529	N	D	JD89361	5/29/2024	X	X		X			X		X	X			
114-MW78WR	114-MW78WR-76.5-20240529	N	T	JD89361	5/29/2024	X	X	X					X	X	X	X		X
114-MW78WR	114-MW78WR-79.0-20240522	N	D	JD88951	5/22/2024		X							X	X			
114-MW78WR	114-MW78WR-79.0-20240522	N	T	JD88951	5/22/2024	X	X	X						X	X			
114-MW78WR	114-MW78WR-81.0-20240806	N	D	JD93519	8/6/2024	X	X							X	X			
114-MW78WR	114-MW78WR-81.0-20240806	N	T	JD93519	8/6/2024	X	X	X						X	X	X		X
114-MW78WR	114-MW78WR-81.0-20240905	N	D	JD95510	9/5/2024	X	X							X	X			
114-MW78WR	114-MW78WR-81.0-20240905	N	T	JD95510	9/5/2024	X	X	X						X	X	X		X
114-MW78WR	114-MW78WR-81.0-20240930	N	D	JD97124	9/30/2024	X	X							X	X			
114-MW78WR	114-MW78WR-81.0-20240930	N	T	JD97124	9/30/2024	X	X	X						X	X	X		X
114-MW78WR	114-MW78WR-81.0-20241104	N	D	JD99628	11/4/2024	X	X							X	X			
114-MW78WR	114-MW78WR-81.0-20241104	N	T	JD99628	11/4/2024	X	X	X						X	X	X		X

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Groundwater Sampling Summary
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PPG, Jersey City, New Jersey

Well ID	Sample ID	Sample Type	Fraction	SDG	Date Collected	Chromium	Chromium (Hexavalent)	Field Measurements	Iron	Iron (Ferric)	Iron (Ferrous)	Manganese	Methane	Oxidation-Reduction Potential (ORP)	pH	Sulfate	Temperature	Total Organic Carbon
114-MW78WR	114-MW78WR-81.0-20241205	N	D	JE2028	12/5/2024	X	X							X	X			
114-MW78WR	114-MW78WR-81.0-20241205	N	T	JE2028	12/5/2024	X	X	X						X	X	X		X
114-MW78WR	114-MW78WR-81.5-20240529	N	D	JD89361	5/29/2024	X	X		X			X		X	X			
114-MW78WR	114-MW78WR-81.5-20240529	N	T	JD89361	5/29/2024	X	X	X					X	X	X	X		X
114-MW79WR	114-MW79WR-73.0-20240619	N	D	JD90731	6/19/2024	X	X		X			X		X	X			
114-MW79WR	114-MW79WR-73.0-20240619	N	T	JD90731	6/19/2024	X	X	X					X	X	X	X		X
114-MW79WR	114-MW79WR-73.0-20240807	N	D	JD93595	8/7/2024	X	X							X	X			
114-MW79WR	114-MW79WR-73.0-20240807	N	T	JD93595	8/7/2024	X	X	X						X	X	X		X
114-MW79WR	114-MW79WR-78.0-20240807	N	D	JD93595	8/7/2024	X	X							X	X			
114-MW79WR	114-MW79WR-78.0-20240807	N	T	JD93595	8/7/2024	X	X	X						X	X	X		X
114-MW79WR	114-MW79WR-78.0-20240807-X	FD	D	JD93595	8/7/2024	X	X							X	X			
114-MW79WR	114-MW79WR-78.0-20240807-X	FD	T	JD93595	8/7/2024	X	X							X	X	X		X
114-MW79WR	114-MW79WR-78.0-20240903	N	D	JD95322	9/3/2024	X	X							X	X			
114-MW79WR	114-MW79WR-78.0-20240903	N	T	JD95322	9/3/2024	X	X	X						X	X	X		X
114-MW79WR	114-MW79WR-78.0-20240903-X	FD	D	JD95322	9/3/2024	X	X							X	X			
114-MW79WR	114-MW79WR-78.0-20240903-X	FD	T	JD95322	9/3/2024	X	X							X	X	X		X
114-MW79WR	114-MW79WR-78.0-20240930	N	D	JD97124	9/30/2024	X	X							X	X			
114-MW79WR	114-MW79WR-78.0-20240930	N	T	JD97124	9/30/2024	X	X	X						X	X	X		X
114-MW79WR	114-MW79WR-78.0-20240930-X	FD	D	JD97124	9/30/2024	X	X							X	X			
114-MW79WR	114-MW79WR-78.0-20240930-X	FD	T	JD97124	9/30/2024	X	X							X	X	X		X
114-MW79WR	114-MW79WR-78.0-20241104	N	D	JD99628	11/4/2024	X	X							X	X			
114-MW79WR	114-MW79WR-78.0-20241104	N	T	JD99628	11/4/2024	X	X	X						X	X	X		X
114-MW79WR	114-MW79WR-78.0-20241104-X	FD	D	JD99628	11/4/2024	X	X							X	X			
114-MW79WR	114-MW79WR-78.0-20241104-X	FD	T	JD99628	11/4/2024	X	X							X	X	X		X
114-MW79WR	114-MW79WR-78.0-20241204	N	D	JE1940	12/4/2024	X	X							X	X			
114-MW79WR	114-MW79WR-78.0-20241204	N	T	JE1940	12/4/2024	X	X	X						X	X	X		X
114-MW79WR	114-MW79WR-78.5-20240619	N	D	JD90731	6/19/2024	X	X		X			X		X	X			
114-MW79WR	114-MW79WR-78.5-20240619	N	T	JD90731	6/19/2024	X	X	X					X	X	X	X		X
114-MW80WR	114-MW80WR-86.5-20240627	N	D	JD91283	6/27/2024	X	X		X			X		X	X			
114-MW80WR	114-MW80WR-86.5-20240627	N	T	JD91283	6/27/2024	X	X	X					X	X	X	X		X
114-MW80WR	114-MW80WR-86.5-20240807	N	D	JD93595	8/7/2024	X	X							X	X			
114-MW80WR	114-MW80WR-86.5-20240807	N	T	JD93595	8/7/2024	X	X	X						X	X	X		X
114-MW80WR	114-MW80WR-91.5-20240627	N	D	JD91283	6/27/2024	X	X		X			X		X	X			
114-MW80WR	114-MW80WR-91.5-20240627	N	T	JD91283	6/27/2024	X	X	X					X	X	X	X		X
114-MW80WR	114-MW80WR-91.5-20240807	N	D	JD93595	8/7/2024	X	X							X	X			
114-MW80WR	114-MW80WR-91.5-20240807	N	T	JD93595	8/7/2024	X	X	X						X	X	X		X
114-MW80WR	114-MW80WR-91.5-20240905	N	D	JD95510	9/5/2024	X	X							X	X			
114-MW80WR	114-MW80WR-91.5-20240905	N	T	JD95510	9/5/2024	X	X	X						X	X	X		X
114-MW80WR	114-MW80WR-91.5-20240930	N	D	JD97124	9/30/2024	X	X							X	X			
114-MW80WR	114-MW80WR-91.5-20240930	N	T	JD97124	9/30/2024	X	X	X						X	X	X		X
114-MW80WR	114-MW80WR-91.5-20241105	N	D	JD99684	11/5/2024	X	X							X	X			
114-MW80WR	114-MW80WR-91.5-20241105	N	T	JD99684	11/5/2024	X	X	X						X	X	X		X
114-MW80WR	114-MW80WR-91.5-20241205	N	D	JE2028	12/5/2024	X	X							X	X			
114-MW80WR	114-MW80WR-91.5-20241205	N	T	JE2028	12/5/2024	X	X	X						X	X	X		X
114-MW81D	114-MW81D-103.5-20250115	N	D	JE4228	1/15/2025						X							
114-MW81D	114-MW81D-103.5-20250115	N	T	JE4228	1/15/2025	X	X	X						X	X	X		
114-MW81D	114-MW81D-107.5-20250115	N	D	JE4228	1/15/2025						X							
114-MW81D	114-MW81D-107.5-20250115	N	T	JE4228	1/15/2025	X	X	X						X	X	X		
114-MW81D	114-MW81D-115.0-20250116	N	D	JE4326	1/16/2025						X							
114-MW81D	114-MW81D-115.0-20250116	N	T	JE4326	1/16/2025	X	X	X						X	X	X		
114-MW81D	114-MW81D-115.0-20250116-X	FD	D	JE4326	1/16/2025						X							
114-MW81D	114-MW81D-115.0-20250116-X	FD	T	JE4326	1/16/2025	X	X							X	X	X		

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Well ID	Sample ID	Sample Type	Fraction	SDG	Date Collected	Chromium	Chromium (Hexavalent)	Field Measurements	Iron	Iron (Ferric)	Iron (Ferrous)	Manganese	Methane	Oxidation-Reduction Potential (ORP)	pH	Sulfate	Temperature	Total Organic Carbon
114-MW81D	114-MW81D-123.0-20250116	N	D	JE4326	1/16/2025						X							
114-MW81D	114-MW81D-123.0-20250116	N	T	JE4326	1/16/2025	X	X	X						X	X	X		
114-MW81D	114-MW81D-127.0-20250117	N	D	JE4369	1/17/2025						X							
114-MW81D	114-MW81D-127.0-20250117	N	T	JE4369	1/17/2025	X	X	X						X	X	X		
114-PW-01WR	114-PW-01WR-83.5-20240603	N	D	JD89648	6/3/2024	X	X		X			X		X	X			
114-PW-01WR	114-PW-01WR-83.5-20240603	N	T	JD89648	6/3/2024	X	X	X					X	X	X	X		X
114-PW-01WR	114-PW-01WR-88.5-20240603	N	D	JD89648	6/3/2024	X	X		X			X		X	X			
114-PW-01WR	114-PW-01WR-88.5-20240603	N	T	JD89648	6/3/2024	X	X	X					X	X	X	X		X
114-PW-02WR	114-PW-02WR-88.8-20240606	N	D	JD89884	6/6/2024	X	X		X			X		X	X			
114-PW-02WR	114-PW-02WR-88.8-20240606	N	T	JD89884	6/6/2024	X	X	X					X	X	X	X		X
114-PW-02WR	114-PW-02WR-93.8-20240606	N	D	JD89884	6/6/2024	X	X		X			X		X	X			
114-PW-02WR	114-PW-02WR-93.8-20240606	N	T	JD89884	6/6/2024	X	X	X					X	X	X	X		X
114-PW-03WR	114-PW-03WR-87.0-20240620	N	D	JD90827	6/20/2024	X	X		X			X		X	X			
114-PW-03WR	114-PW-03WR-87.0-20240620	N	T	JD90827	6/20/2024	X	X	X					X	X	X	X		X
114-PW-03WR	114-PW-03WR-92.0-20240620	N	D	JD90827	6/20/2024	X	X		X			X		X	X			
114-PW-03WR	114-PW-03WR-92.0-20240620	N	T	JD90827	6/20/2024	X	X	X					X	X	X	X		X
114-PW-03WR	114-PW-03WR-92.0-20240620-X	FD	D	JD90827	6/20/2024	X	X		X			X		X	X			
114-PW-03WR	114-PW-03WR-92.0-20240620-X	FD	T	JD90827	6/20/2024	X	X						X	X	X	X		X
114-PW-04WR	114-PW-04WR-50.0-20240621	N	D	JD90888	6/21/2024	X	X		X			X		X	X			
114-PW-04WR	114-PW-04WR-50.0-20240621	N	T	JD90888	6/21/2024	X	X	X					X	X	X	X		X
114-PW-04WR	114-PW-04WR-55.0-20240621	N	D	JD90888	6/21/2024	X	X		X			X		X	X			
114-PW-04WR	114-PW-04WR-55.0-20240621	N	T	JD90888	6/21/2024	X	X	X					X	X	X	X		X
114-PW-05WR	114-PW-05WR-86.9-20240606	N	D	JD89884	6/6/2024	X	X		X			X		X	X			
114-PW-05WR	114-PW-05WR-86.9-20240606	N	T	JD89884	6/6/2024	X	X	X					X	X	X	X		X
114-PW-05WR	114-PW-05WR-91.9-20240606	N	D	JD89884	6/6/2024	X	X		X			X		X	X			
114-PW-05WR	114-PW-05WR-91.9-20240606	N	T	JD89884	6/6/2024	X	X	X					X	X	X	X		X
114-PW-06WR	114-PW-06WR-81.5-20240603	N	D	JD89648	6/3/2024	X	X		X			X		X	X			
114-PW-06WR	114-PW-06WR-81.5-20240603	N	T	JD89648	6/3/2024	X	X	X					X	X	X	X		X
114-PW-06WR	114-PW-06WR-86.5-20240603	N	D	JD89648	6/3/2024	X	X		X			X		X	X			
114-PW-06WR	114-PW-06WR-86.5-20240603	N	T	JD89648	6/3/2024	X	X	X					X	X	X	X		X
114-PW-07WR	114-PW-07WR-72.0-20240612	N	D	JD90312	6/12/2024	X	X		X			X		X	X			
114-PW-07WR	114-PW-07WR-72.0-20240612	N	T	JD90312	6/12/2024	X	X	X					X	X	X	X		X
114-PW-07WR	114-PW-07WR-77.0-20240612	N	D	JD90312	6/12/2024	X	X		X			X		X	X			
114-PW-07WR	114-PW-07WR-77.0-20240612	N	T	JD90312	6/12/2024	X	X	X					X	X	X	X		X
114-PW-09WR	114-PW-09WR-77.0-20240624	N	D	JD91036	6/24/2024	X	X		X			X		X	X			
114-PW-09WR	114-PW-09WR-77.0-20240624	N	T	JD91036	6/24/2024	X	X	X					X	X	X	X		X
114-PW-09WR	114-PW-09WR-77.0-20240624-X	FD	D	JD91036	6/24/2024	X	X		X			X		X	X			
114-PW-09WR	114-PW-09WR-77.0-20240624-X	FD	T	JD91036	6/24/2024	X	X						X	X	X	X		X
114-PW-09WR	114-PW-09WR-82.0-20240624	N	D	JD91036	6/24/2024	X	X		X			X		X	X			
114-PW-09WR	114-PW-09WR-82.0-20240624	N	T	JD91036	6/24/2024	X	X	X					X	X	X	X		X
114-PW-10WR	114-PW-10WR-82.0-20240627	N	D	JD91283	6/27/2024	X	X		X			X		X	X			
114-PW-10WR	114-PW-10WR-82.0-20240627	N	T	JD91283	6/27/2024	X	X	X					X	X	X	X		X
114-PW-10WR	114-PW-10WR-87.0-20240627	N	D	JD91283	6/27/2024	X	X		X			X		X	X			
114-PW-10WR	114-PW-10WR-87.0-20240627	N	T	JD91283	6/27/2024	X	X	X					X	X	X	X		X
114-PZ-52WR	114-PZ-52WR-74.0-20211217	N	T	4602493661	12/17/2021	X	X							X	X		X	
114-PZ-52WR	114-PZ-52WR-74.0-20230922	N	D	4602888091	9/22/2023	X	X		X	X	X			X	X		X	
114-PZ-52WR	114-PZ-52WR-74.0-20230922	N	T	4602888091	9/22/2023	X	X	X						X	X	X	X	X
114-PZ-52WR	114-PZ-52WR-74.0-20231219	N	D	JD79185	12/19/2023	X	X		X			X		X	X			
114-PZ-52WR	114-PZ-52WR-74.0-20231219	N	T	JD79185	12/19/2023	X	X	X						X	X	X		X

Table 3-2
Groundwater Sampling Summary
Addendum to Groundwater Remedial Investigation Report
Garfield Avenue Group Sites
PPG, Jersey City, New Jersey

Well ID	Sample ID	Sample Type	Fraction	SDG	Date Collected	Chromium	Chromium (Hexavalent)	Field Measurements	Iron	Iron (Ferric)	Iron (Ferrous)	Manganese	Methane	Oxidation-Reduction Potential (ORP)	pH	Sulfate	Temperature	Total Organic Carbon
114-PZ-52WR	114-PZ-52WR-74.0-20240320	N	D	JD84853	3/20/2024	X	X				X			X	X			
114-PZ-52WR	114-PZ-52WR-74.0-20240320	N	T	JD84853	3/20/2024	X	X	X						X	X	X		X
114-PZ-52WR	114-PZ-52WR-74.0-20240531	N	D	JD89525	5/31/2024	X	X		X		X	X		X	X			
114-PZ-52WR	114-PZ-52WR-74.0-20240531	N	T	JD89525	5/31/2024	X	X	X					X	X	X	X		X
114-PZ-52WR	114-PZ-52WR-74.0-20240806	N	D	JD93519	8/6/2024	X	X							X	X			
114-PZ-52WR	114-PZ-52WR-74.0-20240806	N	T	JD93519	8/6/2024	X	X	X						X	X	X		X
114-PZ-52WR	114-PZ-52WR-74.0-20240905	N	D	JD95510	9/5/2024	X	X							X	X			
114-PZ-52WR	114-PZ-52WR-74.0-20240905	N	T	JD95510	9/5/2024	X	X	X						X	X	X		X
114-PZ-52WR	114-PZ-52WR-74.0-20241001	N	D	JD97187	10/1/2024	X	X							X	X			
114-PZ-52WR	114-PZ-52WR-74.0-20241001	N	T	JD97187	10/1/2024	X	X	X						X	X	X		X
114-PZ-52WR	114-PZ-52WR-74.0-20241104	N	D	JD99628	11/4/2024	X	X							X	X			
114-PZ-52WR	114-PZ-52WR-74.0-20241104	N	T	JD99628	11/4/2024	X	X	X						X	X	X		X
114-PZ-52WR	114-PZ-52WR-74.0-20241204	N	D	JE1940	12/4/2024	X	X				X			X	X			
114-PZ-52WR	114-PZ-52WR-74.0-20241204	N	T	JE1940	12/4/2024	X	X	X						X	X	X		X
114-PZ-52WR	114-PZ-52WR-74-20230630	N	D	4602833942	6/30/2023	X	X		X	X	X			X	X		X	
114-PZ-52WR	114-PZ-52WR-74-20230630	N	T	4602833942	6/30/2023	X	X	X						X	X	X	X	X
114-PZ-66WR	114-PZ-66WR-82.2-20211216	N	T	4602492741	12/16/2021	X	X							X	X		X	
114-PZ-66WR	114-PZ-66WR-83.0-20230922	N	D	4602888091	9/22/2023				X	X	X							
114-PZ-66WR	114-PZ-66WR-83.0-20230922	N	T	4602888091	9/22/2023	X	X	X						X	X	X	X	X
114-PZ-66WR	114-PZ-66WR-83.0-20230922-X	FD	D	4602888091	9/22/2023				X	X	X							
114-PZ-66WR	114-PZ-66WR-83.0-20230922-X	FD	T	4602888091	9/22/2023	X	X							X	X	X	X	X
114-PZ-66WR	114-PZ-66WR-83.0-20231220	N	D	JD79285	12/20/2023				X		X	X						
114-PZ-66WR	114-PZ-66WR-83.0-20231220	N	T	JD79285	12/20/2023	X	X	X						X	X	X		X
114-PZ-66WR	114-PZ-66WR-83.0-20231220-X	FD	D	JD79285	12/20/2023				X		X	X						
114-PZ-66WR	114-PZ-66WR-83.0-20231220-X	FD	T	JD79285	12/20/2023	X	X							X	X	X		X
114-PZ-66WR	114-PZ-66WR-83.0-20240320	N	D	JD84853	3/20/2024						X							
114-PZ-66WR	114-PZ-66WR-83.0-20240320	N	T	JD84853	3/20/2024	X	X	X						X	X	X		X
114-PZ-66WR	114-PZ-66WR-83.0-20240320	N	D	JD84853	3/20/2024						X							
114-PZ-66WR	114-PZ-66WR-83.0-20240320	N	T	JD84853	3/20/2024	X	X	X						X	X	X		X
114-PZ-66WR	114-PZ-66WR-83.0-20240320-X	FD	D	JD84853	3/20/2024						X							
114-PZ-66WR	114-PZ-66WR-83.0-20240320-X	FD	T	JD84853	3/20/2024	X	X							X	X	X		X
114-PZ-66WR	114-PZ-66WR-83-20230629	N	D	4602833322	6/29/2023				X	X	X							
114-PZ-66WR	114-PZ-66WR-83-20230629	N	T	4602833322	6/29/2023	X	X	X						X	X	X	X	X
114-PZ-66WR	114-PZ-66WR-83-20230629-X	FD	D	4602833322	6/29/2023				X	X	X							
114-PZ-66WR	114-PZ-66WR-83-20230629-X	FD	T	4602833322	6/29/2023	X	X							X	X	X	X	X
114-PZ-66WR	114-PZ-66WR-84.0-20240531	N	D	JD89525	5/31/2024	X	X		X		X	X		X	X			
114-PZ-66WR	114-PZ-66WR-84.0-20240531	N	T	JD89525	5/31/2024	X	X	X					X	X	X	X		X
114-PZ-66WR	114-PZ-66WR-84.0-20240807	N	D	JD93595	8/7/2024	X	X							X	X			
114-PZ-66WR	114-PZ-66WR-84.0-20240807	N	T	JD93595	8/7/2024	X	X	X						X	X	X		X
114-PZ-66WR	114-PZ-66WR-84.0-20240903	N	D	JD95322	9/3/2024	X	X							X	X			
114-PZ-66WR	114-PZ-66WR-84.0-20240903	N	T	JD95322	9/3/2024	X	X	X						X	X	X		X
114-PZ-66WR	114-PZ-66WR-84.0-20240930	N	D	JD97124	9/30/2024	X	X							X	X			
114-PZ-66WR	114-PZ-66WR-84.0-20240930	N	T	JD97124	9/30/2024	X	X	X						X	X	X		X
114-PZ-66WR	114-PZ-66WR-84.0-20241106	N	D	JD99782	11/6/2024	X	X							X	X			
114-PZ-66WR	114-PZ-66WR-84.0-20241106	N	T	JD99782	11/6/2024	X	X	X						X	X	X		X
114-PZ-66WR	114-PZ-66WR-84.0-20241206	N	D	JE2113	12/6/2024	X	X				X			X	X			
114-PZ-66WR	114-PZ-66WR-84.0-20241206	N	T	JE2113	12/6/2024	X	X	X						X	X	X		X

Notes:
D - dissolved
FD - field duplicate
N - normal sample type
SDG - sample delivery group
T - total

Table 3-3
Quality Assurance/Quality Control Sample Summary
Addendum to Groundwater Remedial Investigation Report
Garfield Avenue Group Sites
PPG, Jersey City, New Jersey

AECOM

Sample ID	Sample Type	Lab SDG	Date Collected	Cr	Cr(VI)	Cr(VI)	Iron	Iron (Ferric)	Iron (Ferrous)	Manganese	Methane	ORP	ORP	pH	pH	Sulfate	Temperature	TOC
Fraction				T	D	T	D	D	D	D	T	D	T	D	T	T	T	T
114-BEDROCK RI-FB-20211123	FB	4602478531	11/23/2021	X		X							X		X		X	
FB-20211214	FB	4602491481	12/14/2021	X		X							X		X		X	
FB-20211215-1	FB	4602492051	12/15/2021	X		X							X		X		X	
FB-20211216	FB	4602492741	12/16/2021	X		X							X		X		X	
FB-20211217	FB	4602493661	12/17/2021	X		X							X		X		X	
FB-20211221	FB	4602496041	12/21/2021	X		X							X		X		X	
GW-RI-FB-20220421	FB	4602567051	4/21/2022	X		X							X		X		X	
GW-RI-FB-20220513	FB	4602580871	5/13/2022	X		X							X		X		X	
GW-RI-FB-20220603	FB	4602593611	6/3/2022	X		X												
GW-RI-FB-20220705	FB	4602613181	7/5/2022	X		X							X		X		X	
GW-RI-FB-20220804	FB	4602632541	8/4/2022	X		X												
GW-RI-FB-20220805	FB	4602633361	8/5/2022	X		X												
GW-RI-FB-20230627	FB	4602831931	6/27/2023	X		X							X		X		X	
GW-RI-FB-20230627	FB	4602831932	6/27/2023				X	X	X							X		X
GW-RI-FB-20230628	FB	4602832531	6/28/2023	X		X							X		X		X	
GW-RI-FB-20230628	FB	4602832532	6/28/2023				X	X	X							X		X
GW-RI-FB-20230629	FB	4602833321	6/29/2023	X		X							X		X		X	
GW-RI-FB-20230629	FB	4602833322	6/29/2023				X	X	X							X		X
GW-RI-FB-20230630	FB	4602833941	6/30/2023	X		X							X		X		X	
GW-RI-FB-20230630	FB	4602833942	6/30/2023				X	X	X							X		X
GW-RI-FB-20230703	FB	4602835471	7/3/2023	X		X							X		X		X	
GW-RI-FB-20230703	FB	4602835472	7/3/2023				X	X	X							X		X
GW-RI-FB-20230726	FB	4602849651	7/26/2023	X		X	X	X	X				X		X	X	X	X
GW-RI-FB-20230823	FB	4602867531	8/23/2023	X		X							X		X	X	X	X
GW-RI-FB-20230921	FB	4602887311	9/21/2023	X		X							X		X	X	X	X
GW-RI-FB-20230922	FB	4602888091	9/22/2023	X		X							X		X	X	X	X
GW-RI-FB-20230925	FB	4602889531	9/25/2023	X		X							X		X	X	X	X
GW-RI-FB-20230926	FB	4602890021	9/26/2023	X		X							X		X	X	X	X
GW-RI-FB-20230927	FB	4602890621	9/27/2023	X		X							X		X	X	X	X
GW-RI-FB-20231215	FB	JD78984	12/15/2023	X	X		X			X		X		X		X		X
GW-RI-FB-20231219	FB	JD79185	12/19/2023	X		X	X			X			X		X	X		X
GW-RI-FB-20231220	FB	JD79285	12/20/2023	X		X	X		X	X			X		X	X		X
GW-RI-FB-20231222	FB	JD79443	12/22/2023	X		X							X		X	X		X
GW-RI-FB-20231227	FB	JD79684	12/27/2023	X		X							X		X			X
GW-RI-FB-20240214	FB	JD82442	2/14/2024	X		X			X				X		X	X		X
GW-RI-FB-20240318	FB	JD84684	3/18/2024	X		X			X				X		X	X		X
GW-RI-FB-20240319	FB	JD84758	3/19/2024	X		X			X				X		X	X		X
GW-RI-FB-20240320	FB	JD84853	3/20/2024	X		X			X				X		X	X		X
GW-RI-FB-20240321	FB	JD84943	3/21/2024	X		X			X				X		X	X		X
GW-RI-FB-20240329	FB	JD85454	3/29/2024	X		X			X				X		X	X		X
P4-IRM-FB-20240520	FB	JD88834	5/20/2024	X		X					X		X		X	X		X
P4-IRM-FB-20240521	FB	JD88878	5/21/2024	X		X							X		X			
P4-IRM-FB-20240522	FB	JD88951	5/22/2024	X		X							X		X			
P4-IRM-FB-20240528	FB	JD89297	5/28/2024	X		X					X		X		X	X		X
P4-IRM-TB-20240528	TB	JD89297	5/28/2024								X							

Table 3-3
Quality Assurance/Quality Control Sample Summary
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Garfield Avenue Group Sites
PPG, Jersey City, New Jersey

AECOM

Sample ID	Sample Type	Lab SDG	Date Collected	Cr	Cr(VI)	Cr(VI)	Iron	Iron (Ferric)	Iron (Ferrous)	Manganese	Methane	ORP	ORP	pH	pH	Sulfate	Temperature	TOC
Fraction				T	D	T	D	D	D	D	T	D	T	D	T	T	T	T
P4-IRM-FB-20240529	FB	JD89361	5/29/2024	X		X					X		X		X	X		X
P4-IRM-TB-20240529	TB	JD89361	5/29/2024								X							
P4-IRM-FB-20240530	FB	JD89452	5/30/2024	X		X					X		X			X		X
P4-IRM-TB-20240530	TB	JD89452	5/30/2024								X							
P4-IRM-FB-20240531	FB	JD89525	5/31/2024	X		X					X		X		X	X		X
P4-IRM-TB-20240531	TB	JD89525	5/31/2024								X							
P4-IRM-FB-20240603	FB	JD89648	6/3/2024	X		X					X		X		X	X		X
P4-IRM-TB-20240603	TB	JD89648	6/3/2024								X							
P4-IRM-FB-20240606	FB	JD89884	6/6/2024	X		X					X		X		X	X		X
P4-IRM-TB-20240606	TB	JD89884	6/6/2024								X							
P4-IRM-FB-20240612	FB	JD90312	6/12/2024	X		X					X		X		X	X		X
P4-IRM-TB-20240612	TB	JD90312	6/12/2024								X							
GW-RI-FB-20240617	FB	JD90605	6/17/2024	X		X			X				X		X	X		X
GW-RI-FB-20240619	FB	JD90728	6/19/2024	X		X			X				X		X	X		X
PA-IRM-FB-20240619	FB	JD90731	6/19/2024	X		X					X		X		X	X		X
PA-IRM-TB-20240619	TB	JD90731	6/19/2024								X							
P4-IRM-FB-20240620	FB	JD90827	6/20/2024	X		X					X		X		X	X		X
P4-IRM-TB-20240620	TB	JD90827	6/20/2024								X							
GW-RI-FB-20240621	FB	JD90886	6/21/2024	X		X			X				X		X	X		X
P4-IRM-FB-20240621	FB	JD90888	6/21/2024	X		X					X		X		X	X		X
P4-IRM-TB-20240621	TB	JD90888	6/21/2024								X							
P4-IRM-FB-20240624	FB	JD91036	6/24/2024	X		X					X		X		X	X		X
P4-IRM-TB-20240624	TB	JD91036	6/24/2024								X							
P4-IRM-FB-20240627-B	FB	JD91283	6/27/2024	X		X					X		X		X	X		X
P4-IRM-TB-20240627	TB	JD91283	6/27/2024								X							
GW-RI-FB-20240705	FB	JD91702	7/5/2024	X		X							X		X			X
GW-RI-FB-20240709	FB	JD91859	7/9/2024	X		X							X		X			X
GW-RI-FB-20240710	FB	JD91932	7/10/2024	X		X							X		X			X
FB-20240726	FB	JD92936	7/26/2024	X		X							X		X	X		X
WB-FB-2024085	FB	JD93435	8/5/2024	X		X							X		X	X		X
WB-FB-20240806	FB	JD93519	8/6/2024	X		X							X		X	X		X
WB-FB-20240807	FB	JD93595	8/7/2024	X		X							X		X	X		X
FB-20240812	FB	JD93902	8/12/2024	X		X							X		X	X		X
FB-20240813	FB	JD93987	8/13/2024	X		X							X		X	X		X
BT-FB-20240821	FB	JD94597	8/21/2024	X		X							X		X	X		X
WB-BT-FB-20240903	FB	JD95322	9/3/2024	X		X							X		X	X		X
WB-BT-FB-20240904	FB	JD95426	9/4/2024	X		X							X		X	X		X
WB-BT-FB-20240905	FB	JD95510	9/5/2024	X		X							X		X	X		X
WB-BT-FB-20240906	FB	JD95614	9/6/2024	X		X							X		X	X		X
GW-RI-FB-20240916	FB	JD96195	9/16/2024	X		X							X		X	X		X
GW-RI-FB-20240917	FB	JD96274	9/17/2024	X		X							X		X	X		X
GW-RI-FB-20240918	FB	JD96352	9/18/2024	X		X							X		X	X		X
GW-RI-FB-20240919	FB	JD96459	9/19/2024	X		X							X		X	X		X
WBBT-FB-20240930	FB	JD97124	9/30/2024	X		X							X		X	X		X
WBBT-FB-20241001	FB	JD97187	10/1/2024	X		X							X		X	X		X

Table 3-3
Quality Assurance/Quality Control Sample Summary
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Garfield Avenue Group Sites
PPG, Jersey City, New Jersey

Sample ID	Sample Type	Lab SDG	Date Collected	Cr	Cr(VI)	Cr(VI)	Iron	Iron (Ferric)	Iron (Ferrous)	Manganese	Methane	ORP	ORP	pH	pH	Sulfate	Temperature	TOC
Fraction				T	D	T	D	D	D	D	T	D	T	D	T	T	T	T
WBBT-FB-20241016	FB	JD98353	10/16/2024	X		X							X		X	X		X
WBBT-FB-20241104	FB	JD99628	11/4/2024	X		X							X		X	X		X
WBBT-FB-20241105	FB	JD99684	11/5/2024	X		X							X		X	X		X
WBBT-FB-20241106	FB	JD99782	11/6/2024	X		X							X		X	X		X
WBBT-FB-20241204	FB	JE1940	12/4/2024	X		X							X		X	X		X
WBBT-FB-20241205	FB	JE2028	12/5/2024	X		X							X		X	X		X
GW-RI-FB-20241213	FB	JE2642	12/13/2024	X		X							X		X	X		X
GW-RI-FB-20241216	FB	JE2768	12/16/2024	X		X							X		X	X		X
GW-RI-FB-20241217	FB	JE2865	12/17/2024	X		X							X		X	X		X
GW-RI-FB-20241218	FB	JE2940	12/18/2024	X		X							X		X	X		X
GW-RI-FB-20250115	FB	JE4228	1/15/2025	X		X							X		X	X		
GW-RI-FB-20250116	FB	JE4326	1/16/2025	X		X							X		X	X		
GW-RI-FB-20250117	FB	JE4369	1/17/2025	X		X							X		X	X		

Notes:
Cr(VI) - hexavalent chromium
Cr - total chromium
D - dissolved
FB - field blank
ORP - oxidation-reduction potential
SDG - sample delivery group
T - total/unfiltered
TB - trip blank
TOC - total organic carbon

Table 4-1
Groundwater Analytical Results for Bedrock Monitoring Wells
Addendum to Groundwater Remedial Investigation Report
Garfield Avenue Group Sites
PPG, Jersey City, New Jersey

							Chromium				Field Geochemistry					
						Analyte	CHROMIUM		CHROMIUM (HEXAVALENT)		Oxidation-Reduction Potential (ORP)	Oxygen, Dissolved	pH	Specific Conductivity (Field)	Temperature (Field)	Turbidity
						CAS-RN	7440-47-3	7440-47-3	18540-29-9	18540-29-9	REDOX	DO	pH	SC-F	TEMP-F	TURB
						Fraction	D	T	D	T	T	T	T	T	T	T
						GWQS	70	70								
						Units	ug/L	ug/L	ug/L	ug/L	mv	mg/L	su	mS/cm	deg C	NTU
Well ID	Sample ID	Sample Date	Sample Depth Interval (ft bTOIC)	Sample Type	Lab SDG	Water Bearing Zone										
114-MW4D	114-MW-4D-106.3-20211216	12/16/2021	106.3	N	4602492741	BEDROCK	--	2.5 J	--	< 10.0 U	--	--	--	--	--	--
	114-MW-4D-112.3-20211216	12/16/2021	112.3	N	4602492741	BEDROCK	--	3.0 J	--	< 10.0 U	--	--	--	--	--	--
	114-MW4D-118.8-20211217	12/17/2021	118.8	N	4602493661	BEDROCK	--	2.6 J	--	< 10.0 U	--	--	--	--	--	--
	114-MW4D-122.3-20211217	12/17/2021	122.3	N	4602493661	BEDROCK	--	3.0 J	--	< 10.0 U	--	--	--	--	--	--
	114-MW4D-123.8-20211217	12/17/2021	123.8	N	4602493661	BEDROCK	--	2.9 J	--	< 10.0 U	--	--	--	--	--	--
114-MW4D-Port1	114-MW4D-90-94-20230627	6/27/2023	90-94	N	4602831931	BEDROCK	--	< 4.0 U	--	< 10.0 U	-102.5	2.7	11.21	0.841	18.60	1.14
	114-MW4D-90-94-20230627	6/27/2023	90-94	N	4602831932	BEDROCK	--	--	--	--	--	--	--	--	--	--
	114-MW4D-90.0-94.0-20230926	9/26/2023	90-94	N	4602890021	BEDROCK	--	11.9	--	9.7 J	-23.2	5.35	12.83	5.685	14.95	3.09
	114-MW4D-90-94-20231219	12/19/2023	90-94	N	JD79185	BEDROCK	--	< 10 U	--	9.5 J	-258.6	1.39	12.18	7.2	11.9	1.77
	114-MW4D-90-94-20240319	3/19/2024	90-94	N	JD84758	BEDROCK	--	4.0 J	--	< 10 U	-252.5	1.19	12.75	11.77	13.8	1.77
	114-MW4D-90-94-20240617	6/17/2024	90-94	N	JD90605	BEDROCK	--	< 10 U	--	< 10 U	-199.6	0.71	12.26	8.4	28.7	1.62
	114-MW4D-90-94-20240918	9/18/2024	90-94	N	JD96352	BEDROCK	--	< 10 U	--	< 10 U	-333.6	1.42	12.28	5.7	20.3	1.15
	114-MW4D-90-94-20241218	12/18/2024	90-94	N	JE2940	BEDROCK	--	< 10 U	--	< 10 U	-153.9	3.73	12.2	3.601	14.1	1.38
114-MW4D-Port2	114-MW4D-98-102-20230627	6/27/2023	98-102	N	4602831931	BEDROCK	--	< 4.0 U	--	< 10.0 U	-205.5	4.05	12.27	5.659	19.3	1.59
	114-MW4D-98-102-20230627	6/27/2023	98-102	N	4602831932	BEDROCK	--	--	--	--	--	--	--	--	--	--
	114-MW4D-98.0-102.0-20230926	9/26/2023	98-102	N	4602890021	BEDROCK	--	< 4.0 U	--	< 10.0 U	-17.1	3.85	12.87	3.002	15	8.07
	114-MW4D-98-102-20231219	12/19/2023	98-102	N	JD79185	BEDROCK	--	< 10 U	--	< 10 U	-295.5	0.84	12.18	4.417	11.4	0.66
	114-MW4D-98-102-20240319	3/19/2024	98-102	N	JD84758	BEDROCK	--	< 10 U	--	< 10 U	-241.4	1.61	12.44	4.207	12.3	0.75
	114-MW4D-98-102-20240617	6/17/2024	98-102	N	JD90605	BEDROCK	--	< 10 U	--	< 10 U	-161.3	1.52	11.74	2.817	27.5	0.37
	114-MW4D-98-102-20240918	9/18/2024	98-102	N	JD96352	BEDROCK	--	< 10 U	--	< 10 U	-317.1	1.34	12.1	3.081	20.7	2.14
	114-MW4D-98-102-20241218	12/18/2024	98-102	N	JE2940	BEDROCK	--	< 10 U	--	< 10 U	-192.6	2.67	12.03	2.413	14.3	0.65
114-MW4D-Port3	114-MW4D-111-115-20230627	6/27/2023	111-115	N	4602831931	BEDROCK	--	< 4.0 U	--	< 10.0 U	-303.9	4.31	12.32	6.683	20.39	1.78
	114-MW4D-111-115-20230627	6/27/2023	111-115	N	4602831932	BEDROCK	--	--	--	--	--	--	--	--	--	--
	114-MW4D-111.0-115.0-20230926	9/26/2023	111-115	N	4602890021	BEDROCK	--	8.4	--	< 10.0 U	-30.9	6.3	12.97	7.846	14.8	5.35
	114-MW4D-111-115-20231219	12/19/2023	111-115	N	JD79185	BEDROCK	--	< 10 U	--	< 10 U	-261.6	1.51	12.07	3.496	10.9	0.5
	114-MW4D-111-115-20240319	3/19/2024	111-115	N	JD84758	BEDROCK	--	< 10 U	--	< 10 U	-- NEV	-- NEV	-- NEV	-- NEV	-- NEV	1.93
	114-MW4D-111-115-20240617	6/17/2024	111-115	N	JD90605	BEDROCK	--	< 10 U	--	7.0 J	-180.8	2.34	11.97	5.03	29.4	0.61
	114-MW4D-111-115-20240918	9/18/2024	111-115	N	JD96352	BEDROCK	--	< 10 U	--	15	-332.8	3.9	12.43	6.72	21.8	1.02
	114-MW4D-111-115-20241218	12/18/2024	111-115	N	JE2940	BEDROCK	--	< 10 U	--	12	-- NEV	-- NEV	-- NEV	-- NEV	-- NEV	-- NEV
114-MW4D-Port4	114-MW4D-121-125-20230627	6/27/2023	121-125	N	4602831931	BEDROCK	--	3.8 J	--	< 10.0 U	-209.1	1.83	12.34	21.77	20.64	0.73
	114-MW4D-121-125-20230627	6/27/2023	121-125	N	4602831932	BEDROCK	--	--	--	--	--	--	--	--	--	--
	114-MW4D-121.0-125.0-20230926	9/26/2023	121-125	N	4602890021	BEDROCK	--	4.0	--	< 10.0 U	-16.3	4.64	13.14	12.91	15.08	1.13
	114-MW4D-121-125-20231219	12/19/2023	121-125	N	JD79185	BEDROCK	--	< 10 UJ	--	28 J	-257.8	1.14	12.47	18.51	12.1	2.29
	114-MW4D-121-125-20240319	3/19/2024	121-125	N	JD84758	BEDROCK	--	< 10 U	--	< 10 U	-224.6	1.5	12.97	21.93	11.7	0.84
	114-MW4D-121-125-20240617	6/17/2024	121-125	N	JD90605	BEDROCK	--	< 10 U	--	7.0 J	-199.3	0.93	12.62	18.81	28	0.62
	114-MW4D-121-125-20240918	9/18/2024	121-125	N	JD96352	BEDROCK	--	< 10 U	--	17	-363.6	1.95	12.85	1.285	20.3	0.51
	114-MW4D-121-125-20241218	12/18/2024	121-125	N	JE2940	BEDROCK	--	< 10 U	--	13	-207	3.08	13.01	18.54	13.6	0.57
114-MW52D	114-MW-52D-104-20211123	11/23/2021	104	N	4602478531	BEDROCK	--	**5500**	--	5860 J+	--	--	--	--	--	--
	114-MW-52D-104-20211123-X	11/23/2021	104	FD	4602478531	BEDROCK	--	**5630**	--	6150 J+	--	--	--	--	--	--
114-MW52D-Port1	114-MW52D-80-83-20220421	4/21/2022	80-83	N	4602567051	BEDROCK	--	**79.7**	--	21.4 J	--	--	--	--	--	--
	114-MW52D-80-83-20220603	6/3/2022	80-83	N	4602593611	BEDROCK	--	66.6	--	< 10.0 U	--	--	--		--	--
	114-MW52D-80-83-20220705	7/5/2022	80-83	N	4602613181	BEDROCK	--	47.7	--	< 10.0 U	--	--	--	--	--	--
	114-MW52D-80-83-20230629	6/29/2023	80-83	N	4602833321	BEDROCK	--	24.2	--	< 10.0 UJ	--	--	--	--	--	1.1
	114-MW52D-80-83-20230629	6/29/2023	80-83	N	4602833322	BEDROCK	--	--	--	--	--	--	--	--	--	--
	114-MW52D-80.0-83.0-20230927	9/27/2023	80-83	N	4602890621	BEDROCK	--	17.6	--	< 10.0 U	32.1	8.29	12.1	0.112	18.96	1.29
	114-MW52D-80-83-20231227	12/27/2023	80-83	N	JD79684	BEDROCK	--	5.0 J	--	< 10 UJ	--	--	--	--	--	--
	114-MW52D-80-83-20240329	3/29/2024	80-83	N	JD85454	BEDROCK	--	16.3	--	< 10 U	-- NEV	-- NEV	-- NEV	-- NEV	-- NEV	-- NEV
	114-MW52D-80-83-20240621	6/21/2024	80-83	N	JD90886	BEDROCK	--	20.7	--	< 10 U	-- NEV	-- NEV	-- NEV	-- NEV	-- NEV	-- NEV
	114-MW52D-80-83-20240919	9/19/2024	80-83	N	JD96459	BEDROCK	--	**455**	--	66	-- NEV	-- NEV	-- NEV	-- NEV	-- NEV	-- NEV
	114-MW52D-80-83-20241218	12/18/2024	80-83	N	JE2940	BEDROCK	--	**884**	--	67	-- NEV	-- NEV	-- NEV	-- NEV	-- NEV	-- NEV

Table 4-1
Groundwater Analytical Results for Bedrock Monitoring Wells
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PPG, Jersey City, New Jersey

AECOM

							Lab Geochemistry													
						Analyte	TOTAL ORGANIC CARBON	SULFATE	METHANE	IRON	IRON (FERRIC)	IRON (FERROUS)	MANGANESE	Oxidation-Reduction Potential (ORP)		pH		Temperature	
						CAS-RN	TOC	14808-79-8	74-82-8	7439-89-6	20074-52-6	15438-31-0	7439-96-5	REDOX	REDOX	pH	pH	TEMP	TEMP
						Fraction	T	T	T	D	D	D	D	D	T	D	T	D	T
						GWQS		250		300			50						
						Units	mg/L	mg/L	ug/L	ug/L	mg/L	mg/L	ug/L	mv	mv	su	su	deg C	deg C
Well ID	Sample ID	Sample Date	Sample Depth Interval (ft bTOIC)	Sample Type	Lab SDG	Water Bearing Zone													
114-MW4D	114-MW-4D-106.3-20211216	12/16/2021	106.3	N	4602492741	BEDROCK	--	--	--	--	--	--	--	--	374 HF	--	9.2 HF	--	22.1 HF
	114-MW-4D-112.3-20211216	12/16/2021	112.3	N	4602492741	BEDROCK	--	--	--	--	--	--	--	--	392 HF	--	8.9 HF	--	22.2 HF
	114-MW4D-118.8-20211217	12/17/2021	118.8	N	4602493661	BEDROCK	--	--	--	--	--	--	--	--	408 HF	--	9.0 HF	--	21.8 HF
	114-MW4D-122.3-20211217	12/17/2021	122.3	N	4602493661	BEDROCK	--	--	--	--	--	--	--	--	409 HF	--	9.0 HF	--	21.8 HF
	114-MW4D-123.8-20211217	12/17/2021	123.8	N	4602493661	BEDROCK	--	--	--	--	--	--	--	--	436 HF	--	9.0 HF	--	21.8 HF
114-MW4D-Port1	114-MW4D-90-94-20230627	6/27/2023	90-94	N	4602831931	BEDROCK	--	--	--	--	--	--	--	--	-38 HF	--	10.2 HF	--	24.5 HF
	114-MW4D-90-94-20230627	6/27/2023	90-94	N	4602831932	BEDROCK	21.6	116	--	< 120 U	< 0.10 U	< 0.10 UHF	--	--	--	--	--	--	--
	114-MW4D-90.0-94.0-20230926	9/26/2023	90-94	N	4602890021	BEDROCK	36.9	39.3	--	127	< 0.10 UJ	0.13 J	--	--	182 HF	--	12.5 HF	--	20.3 HF
	114-MW4D-90-94-20231219	12/19/2023	90-94	N	JD79185	BEDROCK	26.1	50.2	--	116 J	--	--	< 10 U	--	-47.3	--	12.37	--	--
	114-MW4D-90-94-20240319	3/19/2024	90-94	N	JD84758	BEDROCK	34.6	47.8	--	--	--	< 0.20 UJ	--	--	76.0	--	12.49	--	--
	114-MW4D-90-94-20240617	6/17/2024	90-94	N	JD90605	BEDROCK	45.3	51.4	--	--	--	< 0.20 UJ	--	--	44.3	--	12.58	--	--
	114-MW4D-90-94-20240918	9/18/2024	90-94	N	JD96352	BEDROCK	17.6	52.9	--	--	--	< 0.20 U	--	--	-59.4	--	12.25	--	--
	114-MW4D-90-94-20241218	12/18/2024	90-94	N	JE2940	BEDROCK	14.4	56.4	--	--	--	< 0.20 U	--	--	90.4	--	12.13	--	--
114-MW4D-Port2	114-MW4D-98-102-20230627	6/27/2023	98-102	N	4602831931	BEDROCK	--	--	--	--	--	--	--	--	29.0 HF	--	12.3 HF	--	25.2 HF
	114-MW4D-98-102-20230627	6/27/2023	98-102	N	4602831932	BEDROCK	45.1	44.2	--	< 120 U	< 0.10 U	< 0.10 UHF	--	--	--	--	--	--	--
	114-MW4D-98.0-102.0-20230926	9/26/2023	98-102	N	4602890021	BEDROCK	81.1	21.4	--	< 120 U	< 0.10 UJ	0.087 J	--	--	-54 HF	--	12.9 HF	--	20.8 HF
	114-MW4D-98-102-20231219	12/19/2023	98-102	N	JD79185	BEDROCK	82.2	40.2	--	< 250 U	--	--	< 10 U	--	70.8	--	12.24	--	--
	114-MW4D-98-102-20240319	3/19/2024	98-102	N	JD84758	BEDROCK	58.0	48.2	--	--	--	< 0.20 UJ	--	--	28.2	--	12.07	--	--
	114-MW4D-98-102-20240617	6/17/2024	98-102	N	JD90605	BEDROCK	96.9	59.2	--	--	--	< 0.20 UJ	--	--	-7.6	--	12.13	--	--
	114-MW4D-98-102-20240918	9/18/2024	98-102	N	JD96352	BEDROCK	54.1	53.7	--	--	--	< 0.20 U	--	--	-32.6	--	12.00	--	--
	114-MW4D-98-102-20241218	12/18/2024	98-102	N	JE2940	BEDROCK	44.3	54.7	--	--	--	< 0.20 U	--	--	-14.7	--	11.95	--	--
114-MW4D-Port3	114-MW4D-111-115-20230627	6/27/2023	111-115	N	4602831931	BEDROCK	--	--	--	--	--	--	--	--	60.0 HF	--	12.2 HF	--	25.0 HF
	114-MW4D-111-115-20230627	6/27/2023	111-115	N	4602831932	BEDROCK	99.0	**572**	--	**921**	< 0.10 U	0.94 HF	--	--	--	--	--	--	--
	114-MW4D-111.0-115.0-20230926	9/26/2023	111-115	N	4602890021	BEDROCK	96.1	215	--	**333**	0.33 J	< 0.10 UJ	--	--	-64 HF	--	12.3 HF	--	20.1 HF
	114-MW4D-111-115-20231219	12/19/2023	111-115	N	JD79185	BEDROCK	56.3	203	--	190 J	--	--	< 10 U	--	-51.1	--	12.08	--	--
	114-MW4D-111-115-20240319	3/19/2024	111-115	N	JD84758	BEDROCK	50.6	90.1	--	--	--	< 0.20 UJ	--	--	-10.3	--	12.30	--	--
	114-MW4D-111-115-20240617	6/17/2024	111-115	N	JD90605	BEDROCK	86.0	61.1	--	--	--	0.14 J	--	--	-20.3	--	12.39	--	--
	114-MW4D-111-115-20240918	9/18/2024	111-115	N	JD96352	BEDROCK	55.6	30.9	--	--	--	< 0.20 U	--	--	-56.2	--	12.34	--	--
	114-MW4D-111-115-20241218	12/18/2024	111-115	N	JE2940	BEDROCK	71.4 J-	23.7	--	--	--	< 0.20 U	--	--	-7.9	--	12.37	--	--
114-MW4D-Port4	114-MW4D-121-125-20230627	6/27/2023	121-125	N	4602831931	BEDROCK	--	--	--	--	--	--	--	--	8.00 HF	--	12.9 HF	--	24.1 HF
	114-MW4D-121-125-20230627	6/27/2023	121-125	N	4602831932	BEDROCK	117	**331**	--	**887**	0.63	0.26 HFF1	--	--	--	--	--	--	--
	114-MW4D-121.0-125.0-20230926	9/26/2023	121-125	N	4602890021	BEDROCK	112	70.2	--	**619**	0.62 J	< 0.10 UJ	--	--	50.0 HF	--	12.9 HF	--	20.3 HF
	114-MW4D-121-125-20231219	12/19/2023	121-125	N	JD79185	BEDROCK	129	71.1	--	**636**	--	--	< 10 U	--	50.7	--	12.82	--	--
	114-MW4D-121-125-20240319	3/19/2024	121-125	N	JD84758	BEDROCK	119	55.7	--	--	--	< 0.20 UJ	--	--	38.3	--	12.71	--	--
	114-MW4D-121-125-20240617	6/17/2024	121-125	N	JD90605	BEDROCK	185	34.8	--	--	--	0.45 J	--	--	-51.4	--	12.93	--	--
	114-MW4D-121-125-20240918	9/18/2024	121-125	N	JD96352	BEDROCK	182	26.4	--	--	--	< 0.20 U	--	--	-71.3	--	12.80	--	--
	114-MW4D-121-125-20241218	12/18/2024	121-125	N	JE2940	BEDROCK	118 J-	20.2	--	--	--	< 0.20 U	--	--	49.5	--	12.80	--	--
114-MW52D	114-MW-52D-104-20211123	11/23/2021	104	N	4602478531	BEDROCK	--	--	--	--	--	--	--	--	220 HF	--	12.4 HF	--	22.8 HF
	114-MW-52D-104-20211123-X	11/23/2021	104	FD	4602478531	BEDROCK	--	--	--	--	--	--	--	--	197 HF	--	12.4 HF	--	22.2 HF
114-MW52D-Port1	114-MW52D-80-83-20220421	4/21/2022	80-83	N	4602567051	BEDROCK	--	--	--	--	--	--	--	--	396 HF	--	9.7 HF	--	20.9 HF
	114-MW52D-80-83-20220603	6/3/2022	80-83	N	4602593611	BEDROCK	60.3	--	--	--	--	--	--	--	391 HF	--	7.7 HF	--	21.0 HF
	114-MW52D-80-83-20220705	7/5/2022	80-83	N	4602613181	BEDROCK	50.5	--	--	--	--	--	--	--	518 HF	--	8.1 HF	--	20.9 HF
	114-MW52D-80-83-20230629	6/29/2023	80-83	N	4602833321	BEDROCK	--	--	--	--	--	--	--	--	-120 HF	--	12.3 HF	--	23.4 HF
	114-MW52D-80-83-20230629	6/29/2023	80-83	N	4602833322	BEDROCK	77.1	22.4	--	109 J	< 0.10 U	0.14 HF	--	--	--	--	--	--	--
	114-MW52D-80.0-83.0-20230927	9/27/2023	80-83	N	4602890621	BEDROCK	161	29.1	--	83.3 J	< 0.10 UJ	0.15 J	--	--	-110 HF	--	12.4 HF	--	21.5 HF
	114-MW52D-80-83-20231227	12/27/2023	80-83	N	JD79684	BEDROCK	146	--	--	--	--	--	--	--	-91.2	--	12.31	--	--
	114-MW52D-80-83-20240329	3/29/2024	80-83	N	JD85454	BEDROCK	332 J-	76.1	--	--	--	< 0.20 UJ	--	--	-111	--	12.42	--	--
	114-MW52D-80-83-20240621	6/21/2024	80-83	N	JD90886	BEDROCK	172	85.9	--	--	--	< 0.20 UJ	--	--	-15.3	--	12.43	--	--
	114-MW52D-80-83-20240919	9/19/2024	80-83	N	JD96459	BEDROCK	145 J+	52.0	--	--	--	--	--	--	-82.5	--	12.37	--	--
	114-MW52D-80-83-20241218	12/18/2024	80-83	N	JE2940	BEDROCK	196 J-	70.0	--	--	--	< 0.20 UJ	--	--	45.9	--	12.36	--	--

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PPG, Jersey City, New Jersey

							Chromium				Field Geochemistry					
						Analyte	CHROMIUM		CHROMIUM (HEXAVALENT)		Oxidation-Reduction Potential (ORP)	Oxygen, Dissolved	pH	Specific Conductivity (Field)	Temperature (Field)	Turbidity
						CAS-RN	7440-47-3	7440-47-3	18540-29-9	18540-29-9	REDOX	DO	pH	SC-F	TEMP-F	TURB
						Fraction	D	T	D	T	T	T	T	T	T	T
						GWQS	70	70								
						Units	ug/L	ug/L	ug/L	ug/L	mv	mg/L	su	mS/cm	deg C	NTU
Well ID	Sample ID	Sample Date	Sample Depth Interval (ft bTOIC)	Sample Type	Lab SDG	Water Bearing Zone										
114-MW52D-Port2	114-MW52D-87-90-20220421	4/21/2022	87-90	N	4602567051	BEDROCK	--	**748**	--	644 J	--	--	--	--	--	--
	114-MW52D-87-90-20220603	6/3/2022	87-90	N	4602593611	BEDROCK	--	10.4	--	< 10.0 U	--	--	--	--	--	--
	114-MW52-87-90-20220705	7/5/2022	87-90	N	4602613181	BEDROCK	--	9.4	--	< 10.0 U	--	--	--	--	--	--
	114-MW52D-87-90-20230629	6/29/2023	87-90	N	4602833321	BEDROCK	--	9.5	--	< 10.0 UJ	--	--	--	--	--	--
	114-MW52D-87-90-20230629	6/29/2023	87-90	N	4602833322	BEDROCK	--	--	--	--	--	--	--	--	--	--
	114-MW52D-87.0-90.0-20230927	9/27/2023	87-90	N	4602890621	BEDROCK	--	41.4	--	< 20.0 U	-23.1	6.89	12.38	20.62	20.65	5.78
	114-MW52D-87-90-20231227	12/27/2023	87-90	N	JD79684	BEDROCK	--	11.1	--	4.9 J-	--	--	--	--	--	--
	114-MW52D-87-90-20240329	3/29/2024	87-90	N	JD85454	BEDROCK	--	20.4	--	< 10 U	-- NEV	-- NEV	-- NEV	-- NEV	-- NEV	-- NEV
	114-MW52D-87-90-20240621	6/21/2024	87-90	N	JD90886	BEDROCK	--	5.5 J	--	< 10 U	-- NEV	-- NEV	-- NEV	-- NEV	-- NEV	-- NEV
	114-MW52D-87-90-20240919	9/19/2024	87-90	N	JD96459	BEDROCK	--	29.5 J	--	53 J	-- NEV	-- NEV	-- NEV	-- NEV	-- NEV	-- NEV
	114-MW52D-87-90-20241218	12/18/2024	87-90	N	JE2940	BEDROCK	--	19.6	--	< 10 U	-- NEV	-- NEV	-- NEV	-- NEV	-- NEV	-- NEV
114-MW52D-Port3	114-MW52D-102-105-20220421	4/21/2022	102-105	N	4602567051	BEDROCK	--	**878**	--	709 J	--	--	--	--	--	--
	114-MW52D-102-105-20220603	6/3/2022	102-105	N	4602593611	BEDROCK	--	< 4.0 UJ	--	99.1 J	--	--	--	--	--	--
	114-MW52D-102-105-20220705	7/5/2022	102-105	N	4602613181	BEDROCK	--	57.1	--	22.7	--	--	--	--	--	--
	114-MW52D-102-105-20230629	6/29/2023	102-105	N	4602833321	BEDROCK	--	16.2	--	< 10.0 UJ	--	--	--	--	--	2.78
	114-MW52D-102-105-20230629	6/29/2023	102-105	N	4602833322	BEDROCK	--	--	--	--	--	--	--	--	--	--
	114-MW52D-102.0-105.0-20230927	9/27/2023	102-105	N	4602890621	BEDROCK	--	7.4	--	< 10.0 UJ	35.9	8.04	11.08	5.118	20.95	2.27
	114-MW52D-102-105-20231227	12/27/2023	102-105	N	JD79684	BEDROCK	--	< 10 U	--	< 10 UJ	--	--	--	--	--	--
	114-MW52D-102-105-20240329	3/29/2024	102-105	N	JD85454	BEDROCK	--	3.2 J	--	< 10 U	-- NEV	-- NEV	-- NEV	-- NEV	-- NEV	-- NEV
	114-MW52D-102-105-20240621	6/21/2024	102-105	N	JD90886	BEDROCK	--	7.2 J	--	< 10 U	-- NEV	-- NEV	-- NEV	-- NEV	-- NEV	-- NEV
	114-MW52D-102-105-20240919	9/19/2024	102-105	N	JD96459	BEDROCK	--	7.2 J	--	< 10 U	-- NEV	-- NEV	-- NEV	-- NEV	-- NEV	-- NEV
	114-MW52D-102-105-20241218	12/18/2024	102-105	N	JE2940	BEDROCK	--	8.2 J	--	< 10 U	-- NEV	-- NEV	-- NEV	-- NEV	-- NEV	-- NEV
114-MW53C	114-MW53C-47.5-20230703	7/3/2023	47.5	N	4602835471	WEATHERED BEDROCK	--	**39100**	--	37900 J	178.7	1.2	6.83	2.889	17.85	5.15
	114-MW53C-47.5-20230703	7/3/2023	47.5	N	4602835472	WEATHERED BEDROCK	--	--	--	--	--	--	--	--	--	--
	114-MW53C-47.5-20230922	9/22/2023	47.5	N	4602888091	WEATHERED BEDROCK	--	**28400**	--	29200	97.6	0.9	7.52	3.332	20.8	6.9
	114-MW53C-47.5-20231219	12/19/2023	47.5	N	JD79185	WEATHERED BEDROCK	--	**14900 J**	--	20300 J	94.3	0.22	7.32	3.095	14.5	4.19
	114-MW53C-47.5-20240319	3/19/2024	47.5	N	JD84758	WEATHERED BEDROCK	--	**14100**	--	15500	20.9	5.59	7.23	2.51	9.4	9.95
	114-MW53C-47.9-20240528	5/28/2024	47.9	N	JD89297	WEATHERED BEDROCK	**10900**	**11000**	12700	12600	75.3	0.25	7.2	3.036	17.5	0.53
	114-MW53C-47.9-20240528	5/28/2024	47.9	N	JD89297R	WEATHERED BEDROCK	--	--	--	--	--	--	--	--	--	--
	114-MW53C-48.0-20240805	8/5/2024	48	N	JD93435	WEATHERED BEDROCK	**836**	**968**	< 10 U	3.7 B	-77.7	0.09	6.2	4.02	23.7	3.5
	114-MW53C-48.0-20240904	9/4/2024	48	N	JD95426	WEATHERED BEDROCK	**2750**	**3080**	70	62	-27.3	1.68	5.77	5591	20.4	2.71
	114-MW53C-48.0-20241001	10/1/2024	48	N	JD97187	WEATHERED BEDROCK	**1280**	**1410**	290	340	-147.1	0.16	5.93	4.15	17.8	4.68
	114-MW53C-48.0-20241104	11/4/2024	48	N	JD99628	WEATHERED BEDROCK	**994**	**1040**	25	23	-101.8	0.15	6.28	4.16	17.3	6.71
	114-MW53C-48.0-20241205	12/5/2024	48	N	JE2028	WEATHERED BEDROCK	**742**	**910**	390	400	-158.2	1.17	6.62	4.07	14.4	9.75
114-MW55C	114-MW-55C-70.5-20230629	6/29/2023	70.5	N	4602833321	WEATHERED BEDROCK	--	10.8	--	< 10.0 UJ	-50.9	1.5	11.9	15.21	20.9	6.45
	114-MW-55C-70.5-20230629	6/29/2023	70.5	N	4602833322	WEATHERED BEDROCK	--	--	--	--	--	--	--	--	--	--

Table 4-1
Groundwater Analytical Results for Bedrock Monitoring Wells
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Garfield Avenue Group Sites
PPG, Jersey City, New Jersey

							Lab Geochemistry													
						Analyte	TOTAL ORGANIC CARBON	SULFATE	METHANE	IRON	IRON (FERRIC)	IRON (FERROUS)	MANGANESE	Oxidation-Reduction Potential (ORP)		pH		Temperature	
						CAS-RN	TOC	14808-79-8	74-82-8	7439-89-6	20074-52-6	15438-31-0	7439-96-5	REDOX	REDOX	pH	pH	TEMP	TEMP
						Fraction	T	T	T	D	D	D	D	D	T	D	T	D	T
						GWQS		250		300			50						
						Units	mg/L	mg/L	ug/L	ug/L	mg/L	mg/L	ug/L	mv	mv	su	su	deg C	deg C
Well ID	**Sample ID**	**Sample Date**	**Sample Depth Interval (ft bTOIC)**	**Sample Type**	**Lab SDG**	**Water Bearing Zone**													
114-MW52D-Port2	114-MW52D-87-90-20220421	4/21/2022	87-90	N	4602567051	BEDROCK	--	--	--	--	--	--	--	--	370 HF	--	8.9 HF	--	21.1 HF
	114-MW52D-87-90-20220603	6/3/2022	87-90	N	4602593611	BEDROCK	19.2	--	--	--	--	--	--	--	371 HF	--	8.0 HF	--	20.8 HF
	114-MW52-87-90-20220705	7/5/2022	87-90	N	4602613181	BEDROCK	16.6	--	--	--	--	--	--	--	421 HF	--	7.4 HF	--	21.1 HF
	114-MW52D-87-90-20230629	6/29/2023	87-90	N	4602833321	BEDROCK	--	--	--	--	--	--	--	--	-87 HF	--	10.2 HF	--	23.9 HF
	114-MW52D-87-90-20230629	6/29/2023	87-90	N	4602833322	BEDROCK	32.5	60.6	--	< 120 U	< 0.10 U	< 0.10 UHF	--	--	--	--	--	--	--
	114-MW52D-87.0-90.0-20230927	9/27/2023	87-90	N	4602890621	BEDROCK	110	85.7	--	57.6 J	< 0.10 UJ	0.094 J	--	--	-91 HF	--	12.1 HF	--	21.6 HF
	114-MW52D-87-90-20231227	12/27/2023	87-90	N	JD79684	BEDROCK	42.1	--	--	--	--	--	--	--	37.1	--	11.73	--	--
	114-MW52D-87-90-20240329	3/29/2024	87-90	N	JD85454	BEDROCK	45.1 J-	139	--	--	--	< 0.20 UJ	--	--	-72.8	--	11.71	--	--
	114-MW52D-87-90-20240621	6/21/2024	87-90	N	JD90886	BEDROCK	43.9	148	--	--	--	< 0.20 UJ	--	--	29.3	--	11.80	--	--
	114-MW52D-87-90-20240919	9/19/2024	87-90	N	JD96459	BEDROCK	87.8 J+	66.1	--	--	--	--	--	--	-67.6	--	1210	--	--
	114-MW52D-87-90-20241218	12/18/2024	87-90	N	JE2940	BEDROCK	131 J-	75.9	--	--	--	< 0.20 UJ	--	--	-21.0	--	12.03	--	--
114-MW52D-Port3	114-MW52D-102-105-20220421	4/21/2022	102-105	N	4602567051	BEDROCK	--	--	--	--	--	--	--	--	333 HF	--	7.6 HF	--	20.7 HF
	114-MW52D-102-105-20220603	6/3/2022	102-105	N	4602593611	BEDROCK	13.5	--	--	--	--	--	--	--	334 HF	--	7.1 HF	--	21.2 HF
	114-MW52D-102-105-20220705	7/5/2022	102-105	N	4602613181	BEDROCK	19.4 F1	--	--	--	--	--	--	--	471 HF	--	8.2 HF	--	20.8 HF
	114-MW52D-102-105-20230629	6/29/2023	102-105	N	4602833321	BEDROCK	--	--	--	--	--	--	--	--	-60 HF	--	10.1 HF	--	23.3 HF
	114-MW52D-102-105-20230629	6/29/2023	102-105	N	4602833322	BEDROCK	35.5	75.4	--	< 120 U	< 0.10 U	< 0.10 UHF	--	--	--	--	--	--	--
	114-MW52D-102.0-105.0-20230927	9/27/2023	102-105	N	4602890621	BEDROCK	56.6	111	--	25.2 J	< 0.10 UJ	< 0.10 UJ	--	--	-56 HF	--	11.2 HF	--	21.5 HF
	114-MW52D-102-105-20231227	12/27/2023	102-105	N	JD79684	BEDROCK	45.3	--	--	--	--	--	--	--	-2.5	--	11.30	--	--
	114-MW52D-102-105-20240329	3/29/2024	102-105	N	JD85454	BEDROCK	44.5 J-	129	--	--	--	< 0.20 UJ	--	--	-42.9	--	11.03	--	--
	114-MW52D-102-105-20240621	6/21/2024	102-105	N	JD90886	BEDROCK	57.2	156	--	--	--	< 0.20 UJ	--	--	42.8	--	11.33	--	--
	114-MW52D-102-105-20240919	9/19/2024	102-105	N	JD96459	BEDROCK	142 J+	120	--	--	--	--	--	--	-17.6	--	11.11	--	--
	114-MW52D-102-105-20241218	12/18/2024	102-105	N	JE2940	BEDROCK	--	--	--	--	--	< 0.20 U	--	--	56.1	--	10.97	--	--
114-MW53C	114-MW53C-47.5-20230703	7/3/2023	47.5	N	4602835471	WEATHERED BEDROCK	--	--	--	--	--	--	--	--	439 HF	--	7.6 HF	--	22.5 HF
	114-MW53C-47.5-20230703	7/3/2023	47.5	N	4602835472	WEATHERED BEDROCK	3.8	**452**	--	< 120 U	< 0.10 U	< 0.10 UHF	--	--	--	--	--	--	--
	114-MW53C-47.5-20230922	9/22/2023	47.5	N	4602888091	WEATHERED BEDROCK	4.6 JB	**297**	--	< 120 U	< 0.10 UJ	< 0.10 UJ	--	--	507 HF	--	7.8 HF	--	21.3 HF
	114-MW53C-47.5-20231219	12/19/2023	47.5	N	JD79185	WEATHERED BEDROCK	< 5.0 U	**371**	--	< 250 U	--	--	**286**	--	302	--	7.44	--	--
	114-MW53C-47.5-20240319	3/19/2024	47.5	N	JD84758	WEATHERED BEDROCK	3.2	**384**	--	--	--	0.067 J	--	--	385	--	7.65	--	--
	114-MW53C-47.9-20240528	5/28/2024	47.9	N	JD89297	WEATHERED BEDROCK	4.6 J	**411**	2690	< 250 U	--	--	**305**	299	289	7.91	7.83	--	--
	114-MW53C-47.9-20240528	5/28/2024	47.9	N	JD89297R	WEATHERED BEDROCK	--	--	--	--	--	< 0.20 UJ	--	--	--	--	--	--	--
	114-MW53C-48.0-20240805	8/5/2024	48	N	JD93435	WEATHERED BEDROCK	547	**428**	--	--	--	--	--	353	364	7.06	6.84	--	--
	114-MW53C-48.0-20240904	9/4/2024	48	N	JD95426	WEATHERED BEDROCK	1780	123	--	--	--	--	--	319	385	6.27	6.23	--	--
	114-MW53C-48.0-20241001	10/1/2024	48	N	JD97187	WEATHERED BEDROCK	1530	< 40 U	--	--	--	--	--	191	191	6.46	6.45	--	--
	114-MW53C-48.0-20241104	11/4/2024	48	N	JD99628	WEATHERED BEDROCK	860	18.9 B	--	--	--	--	--	106	87.6	6.66	6.64	--	--
	114-MW53C-48.0-20241205	12/5/2024	48	N	JE2028	WEATHERED BEDROCK	924	3.7	--	--	--	179	--	123	122	7.00	6.84	--	--
114-MW55C	114-MW-55C-70.5-20230629	6/29/2023	70.5	N	4602833321	WEATHERED BEDROCK	--	--	--	--	--	--	--	--	175 HF	--	11.7 HF	--	23.9 HF
	114-MW-55C-70.5-20230629	6/29/2023	70.5	N	4602833322	WEATHERED BEDROCK	12.5	48.2	--	< 120 U	< 0.10 U	0.11 HF	--	--	--	--	--	--	--

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PPG, Jersey City, New Jersey

AECOM

							Chromium				Field Geochemistry					
						Analyte	CHROMIUM		CHROMIUM (HEXAVALENT)		Oxidation-Reduction Potential (ORP)	Oxygen, Dissolved	pH	Specific Conductivity (Field)	Temperature (Field)	Turbidity
						CAS-RN	7440-47-3	7440-47-3	18540-29-9	18540-29-9	REDOX	DO	pH	SC-F	TEMP-F	TURB
						Fraction	D	T	D	T	T	T	T	T	T	T
						GWQS	70	70								
						Units	ug/L	ug/L	ug/L	ug/L	mv	mg/L	su	mS/cm	deg C	NTU
Well ID	Sample ID	Sample Date	Sample Depth Interval (ft bTOIC)	Sample Type	Lab SDG	Water Bearing Zone										
114-MW57C	114-MW57C-71-20230630	6/30/2023	71	N	4602833941	WEATHERED BEDROCK	**11100 J**	**13100 J**	22400 J	23000 J	129.3	1.83	7.63	1.152	21.98	23.6
	114-MW57C-71-20230630	6/30/2023	71	N	4602833942	WEATHERED BEDROCK	--	--	--	--	--	--	--	--	--	--
	114-MW57C-71-20230630-X	6/30/2023	71	FD	4602833941	WEATHERED BEDROCK	**11300 J**	**14000 J**	20800 J	23500 J	--	--	--	--	--	--
	114-MW57C-71-20230630-X	6/30/2023	71	FD	4602833942	WEATHERED BEDROCK	--	--	--	--	--	--	--	--	--	--
	114-MW57C-71.0-20230925	9/25/2023	71	N	4602889531	WEATHERED BEDROCK	--	**11600**	--	10700 J	84	1.46	8.68	1.058	16.94	7.93
	114-MW57C-71.0-20230925-X	9/25/2023	71	FD	4602889531	WEATHERED BEDROCK	--	**11300**	--	11400	--	--	--	--	--	--
	114-MW57C-71.0-20231219	12/19/2023	71	N	JD79185	WEATHERED BEDROCK	--	**15600**	--	15400	13.3	1.13	7.88	1.641	14.7	5.16
	114-MW57C-71.0-20231219-X	12/19/2023	71	FD	JD79185	WEATHERED BEDROCK	--	**15400**	--	14700	--	--	--	--	--	--
	114-MW57C-71.0-20240319	3/19/2024	71	N	JD84758	WEATHERED BEDROCK	--	**12000**	--	13500	19.6	2.62	7.88	1.415	11.5	2.87
	114-MW57C-71.0-20240319-X	3/19/2024	71	FD	JD84758	WEATHERED BEDROCK	--	**11900**	--	13800	--	--	--	--	--	--
	114-MW57C-70.9-20240520	5/20/2024	70.9	N	JD88834	WEATHERED BEDROCK	**17700**	**15800**	15500	16200	-61.8	4.69	7.78	2.039	16.9	3.12
	114-MW57C-70.9-20240520	5/20/2024	70.9	N	JD88834R	WEATHERED BEDROCK	--	--	--	--	--	--	--	--	--	--
	114-MW57C-70.9-20240530	5/30/2024	70.9	N	JD89452	WEATHERED BEDROCK	**17300**	**16000**	17100	18200	106.1	1	7.81	1.644	16.8	8.93
	114-MW57C-70.9-20240530-X	5/30/2024	70.9	FD	JD89452	WEATHERED BEDROCK	**17200**	**17200**	17800	18200	--	--	--	--	--	--
	114-MW57C-70.9-20240726	7/26/2024	70.9	N	JD92936	WEATHERED BEDROCK	**1610**	**1580**	4.4 J	4.4 J	-96.5	0.05	5.7	3.174	22.7	5.1
	114-MW57C-70.9-20240805	8/5/2024	70.9	N	JD93435	WEATHERED BEDROCK	**2090**	**2360**	< 10 U	9.6 B	2.3	0.93	5.75	4.46	22.8	4.37
	114-MW57C-70.9-20240821	8/21/2024	70.9	N	JD94597	WEATHERED BEDROCK	**1960**	**2130**	57	57	-51.3	0.09	5.77	4.52	22.9	9.04
	114-MW57C-70.9-20240903	9/3/2024	70.9	N	JD95322	WEATHERED BEDROCK	**2120**	**2610**	< 10 U	< 10 U	-51.9	0.15	5.7	5.11	21.6	9.98
	114-MW57C-70.9-20240930	9/30/2024	70.9	N	JD97124	WEATHERED BEDROCK	**1790**	**2330**	3.7 B	9.5 B	-129.6	0.2	5.59	3.82	21.3	9.33
	114-MW57C-70.9-20241104	11/4/2024	70.9	N	JD99628	WEATHERED BEDROCK	**1090**	**1280**	200	240	-45.7	0.16	5.75	3.62	18.3	8.32
	114-MW57C-70.9-20241206	12/6/2024	70.9	N	JE2113	WEATHERED BEDROCK	**629**	**743**	< 10 U	9.0 B	-161.1	0.05	5.93	4.66	11.3	9.93
114-MW57D	114-MW57D-87.25-20220804	8/4/2022	87.25	N	4602632541	BEDROCK	--	**322**	--	< 10.0 U	--	--	--	--	--	--
	114-MW57D-90-20220804	8/4/2022	90	N	4602632541	BEDROCK	--	**489**	--	< 10.0 U	--	--	--	--	--	--
	114-MW57D-98-20220805	8/5/2022	98	N	4602633361	BEDROCK	--	**375**	--	< 10.0 U	--	--	--	--	--	--
114-MW57D-Port1	114-MW57D-87.5-91.5-20230628	6/28/2023	87.5-91.5	N	4602832531	BEDROCK	--	11.5	--	< 10.0 U	-4.1	0.81	9.1	0.924	25	1.15
	114-MW57D-87.5-91.5-20230628	6/28/2023	87.5-91.5	N	4602832532	BEDROCK	--	--	--	--	--	--	--	--	--	--
	114-MW57D-87.5-91.5-20230926	9/26/2023	87.5-91.5	N	4602890021	BEDROCK	--	5.1	--	< 10.0 U	17.3	4.19	9.17	0.823	15.67	0.91
	114-MW57D-87.5-91.5-20231219	12/19/2023	87.5-91.5	N	JD79185	BEDROCK	--	6.8 J	--	< 10 U	--	--	--	--	--	3.62
	114-MW57D-87.5-91.5-20240329	3/29/2024	87.5-91.5	N	JD85454	BEDROCK	--	5.3 J	--	< 10 U	-306.6	0.63	8.16	1.718	10.7	1.16
	114-MW57D-87.5-91.5-20240621	6/21/2024	87.5-91.5	N	JD90886	BEDROCK	--	7.9 J	--	< 10 U	-195.3	1.16	8.28	1.876	28.7	2.79
	114-MW57D-87.5-91.5-20240918	9/18/2024	87.5-91.5	N	JD96352	BEDROCK	--	6.1 J	--	< 10 U	-334.3	0.52	8.12	1.259	20.6	1.21
	114-MW57D-87.5-91.5-20241218	12/18/2024	87.5-91.5	N	JE2940	BEDROCK	63.7	**78.4**	3.4 J	< 10 U	-- NEV	-- NEV	-- NEV	-- NEV	-- NEV	27.8
114-MW57D-Port2	114-MW57D-96.5-100.5-20230628	6/28/2023	96.5-100.5	N	4602832531	BEDROCK	--	3.3 J	--	< 10.0 U	-3.3	3	8.44	0.799	21.05	0.97
	114-MW57D-96.5-100.5-20230628	6/28/2023	96.5-100.5	N	4602832532	BEDROCK	--	--	--	--	--	--	--	--	--	--
	114-MW57D-96.5-100.5-20230926	9/26/2023	96.5-100.5	N	4602890021	BEDROCK	--	40.5	--	< 10.0 U	24.5	5.37	8.5	1.02	15.52	2.15
	114-MW57D-96.5-100.5-20231219	12/19/2023	96.5-100.5	N	JD79185	BEDROCK	--	35.2	--	< 10 U	--	--	--	--	--	6.52
	114-MW57D-96.5-100.5-20240329	3/29/2024	96.5-100.5	N	JD85454	BEDROCK	--	13.6	--	< 10 U	-316.3	0.74	8.21	1.68	11.1	1.02
	114-MW57D-96.5-100.5-20240621	6/21/2024	96.5-100.5	N	JD90886	BEDROCK	--	8.6 J	--	< 10 U	-169.4	1.34	8.27	1.621	27.8	1.89
	114-MW57D-96.5-100.5-20240918	9/18/2024	96.5-100.5	N	JD96352	BEDROCK	--	6.4 J	--	< 10 U	-346.8	2.37	8.19	1.247	19.6	0.65
	114-MW57D-96.5-100.5-20241218	12/18/2024	96.5-100.5	N	JE2940	BEDROCK	--	67.3	< 10 U	< 10 U	-- NEV	-- NEV	-- NEV	-- NEV	-- NEV	23.1
114-MW57D-Port3	114-MW57D-104-108-20230628	6/28/2023	104-108	N	4602832531	BEDROCK	--	< 4.0 U	--	< 10.0 U	-13.2	3.1	8.11	0.761	21.37	2.21
	114-MW57D-104-108-20230628	6/28/2023	104-108	N	4602832532	BEDROCK	--	--	--	--	--	--	--	--	--	--
	114-MW57D-104.0-108.0-20230926	9/26/2023	104-108	N	4602890021	BEDROCK	--	**174**	--	< 10.0 U	29.8	4.04	8.16	0.667	15.35	3.91
	114-MW57D-104-108-20231219	12/19/2023	104-108	N	JD79185	BEDROCK	--	11.3	--	< 10 U	--	--	--	--	--	3.47
	114-MW57D-104-108-20240329	3/29/2024	104-108	N	JD85454	BEDROCK	--	8.4 J	--	< 10 U	-344.5	0.71	8.17	1.398	10	0.93
	114-MW57D-104-108-20240621	6/21/2024	104-108	N	JD90886	BEDROCK	--	8.6 J	--	< 10 U	-149.2	1.63	8.1	1.201	31.6	0.77
	114-MW57D-104-108-20240918	9/18/2024	104-108	N	JD96352	BEDROCK	--	5.5 J	--	< 10 U	-341.4	0.79	8.1	1.088	19.8	1.06
	114-MW57D-104-108-20241218	12/18/2024	104-108	N	JE2940	BEDROCK	--	**87.4**	5.8 J	< 10 U	-- NEV	-- NEV	-- NEV	-- NEV	-- NEV	32.1

Table 4-1
Groundwater Analytical Results for Bedrock Monitoring Wells
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PPG, Jersey City, New Jersey

AECOM

							Lab Geochemistry													
						Analyte	TOTAL ORGANIC CARBON	SULFATE	METHANE	IRON	IRON (FERRIC)	IRON (FERROUS)	MANGANESE	Oxidation-Reduction Potential (ORP)		pH		Temperature	
						CAS-RN	TOC	14808-79-8	74-82-8	7439-89-6	20074-52-6	15438-31-0	7439-96-5	REDOX	REDOX	pH	pH	TEMP	TEMP
						Fraction	T	T	T	D	D	D	D	D	T	D	T	D	T
						GWQS		250		300			50						
						Units	mg/L	mg/L	ug/L	ug/L	mg/L	mg/L	ug/L	mv	mv	su	su	deg C	deg C
Well ID	**Sample ID**	**Sample Date**	**Sample Depth Interval (ft bTOIC)**	**Sample Type**	**Lab SDG**	**Water Bearing Zone**													
114-MW57C	114-MW57C-71-20230630	6/30/2023	71	N	4602833941	WEATHERED BEDROCK	--	--	--	--	--	--	--	532 HF	482 HF	7.9 HF	8.0 HF	20.6 HF	22.3 HF
	114-MW57C-71-20230630	6/30/2023	71	N	4602833942	WEATHERED BEDROCK	2.3	**412**	--	< 120 U	< 0.10 U	< 0.10 UHFF1	--	--	--	--	--	--	--
	114-MW57C-71-20230630-X	6/30/2023	71	FD	4602833941	WEATHERED BEDROCK	--	--	--	--	--	--	--	525 HF	467 HF	8.0 HF	7.9 HF	20.5 HF	22.4 HF
	114-MW57C-71-20230630-X	6/30/2023	71	FD	4602833942	WEATHERED BEDROCK	2.2	**408**	--	< 120 U	< 0.10 U	< 0.10 UHF	--	--	--	--	--	--	--
	114-MW57C-71.0-20230925	9/25/2023	71	N	4602889531	WEATHERED BEDROCK	3.0	**300**	--	**< 600 U**	R	R	--	--	364 HF	--	8.2 HF	--	21.1 HF
	114-MW57C-71.0-20230925-X	9/25/2023	71	FD	4602889531	WEATHERED BEDROCK	2.9	**285**	--	**< 600 U**	R	R	--	--	572 HF	--	8.2 HF	--	21.9 HF
	114-MW57C-71.0-20231219	12/19/2023	71	N	JD79185	WEATHERED BEDROCK	2.4	**501**	--	< 250 U	--	--	**82.5**	--	346	--	7.92	--	--
	114-MW57C-71.0-20231219-X	12/19/2023	71	FD	JD79185	WEATHERED BEDROCK	< 5.0 U	**502**	--	< 250 U	--	--	**87.2**	--	279	--	7.88	--	--
	114-MW57C-71.0-20240319	3/19/2024	71	N	JD84758	WEATHERED BEDROCK	2.8	**522**	--	--	--	< 0.20 UJ	--	--	385	--	7.87	--	--
	114-MW57C-71.0-20240319-X	3/19/2024	71	FD	JD84758	WEATHERED BEDROCK	2.8	**529**	--	--	--	< 0.20 UJ	--	--	310	--	7.98	--	--
	114-MW57C-70.9-20240520	5/20/2024	70.9	N	JD88834	WEATHERED BEDROCK	4.6 J	**571**	363	< 250 U	--	--	**99.0**	239	229	8.11	8.10	--	--
	114-MW57C-70.9-20240520	5/20/2024	70.9	N	JD88834R	WEATHERED BEDROCK	--	--	--	--	--	< 0.20 UJ	--	--	--	--	--	--	--
	114-MW57C-70.9-20240530	5/30/2024	70.9	N	JD89452	WEATHERED BEDROCK	< 5.0 U	**536**	306	< 250 U	--	--	**91.9**	315	310	8.05	8.00	--	--
	114-MW57C-70.9-20240530-X	5/30/2024	70.9	FD	JD89452	WEATHERED BEDROCK	< 5.0 U	**518**	287	< 250 U	--	--	**95.4**	321	307	8.02	8.02	--	--
	114-MW57C-70.9-20240726	7/26/2024	70.9	N	JD92936	WEATHERED BEDROCK	1150	**335**	--	--	--	< 0.20 UJ	--	291	281	6.08	6.03	--	--
	114-MW57C-70.9-20240805	8/5/2024	70.9	N	JD93435	WEATHERED BEDROCK	1550	**343**	--	--	--	--	--	311	276	6.12	6.01	--	--
	114-MW57C-70.9-20240821	8/21/2024	70.9	N	JD94597	WEATHERED BEDROCK	1820	**419**	--	--	--	--	--	333	185	8.13	5.87	--	--
	114-MW57C-70.9-20240903	9/3/2024	70.9	N	JD95322	WEATHERED BEDROCK	2190	**255**	--	--	--	--	--	299	291	5.84	5.84	--	--
	114-MW57C-70.9-20240930	9/30/2024	70.9	N	JD97124	WEATHERED BEDROCK	1670	< 40 U	--	--	--	--	--	280	282	5.90	5.87	--	--
	114-MW57C-70.9-20241104	11/4/2024	70.9	N	JD99628	WEATHERED BEDROCK	1540	50.7	--	--	--	--	--	204	184	6.11	6.06	--	--
	114-MW57C-70.9-20241206	12/6/2024	70.9	N	JE2113	WEATHERED BEDROCK	1690	< 40 U	--	--	--	31.5	--	206	208	6.18	6.11	--	--
114-MW57D	114-MW57D-87.25-20220804	8/4/2022	87.25	N	4602632541	BEDROCK	--	--	--	--	--	--	--	--	452 HF	--	9.5 HF	--	21.4 HF
	114-MW57D-90-20220804	8/4/2022	90	N	4602632541	BEDROCK	--	--	--	--	--	--	--	--	411 HF	--	9.5 HF	--	21.6 HF
	114-MW57D-98-20220805	8/5/2022	98	N	4602633361	BEDROCK	--	--	--	--	--	--	--	--	473 HF	--	9.4 HF	--	22.3 HF
114-MW57D-Port1	114-MW57D-87.5-91.5-20230628	6/28/2023	87.5-91.5	N	4602832531	BEDROCK	--	--	--	--	--	--	--	--	417 HF	--	8.4 HF	--	23.2 HF
	114-MW57D-87.5-91.5-20230628	6/28/2023	87.5-91.5	N	4602832532	BEDROCK	< 1.0 U	95.7	--	< 120 U	< 0.10 U	0.15 HF	--	--	--	--	--	--	--
	114-MW57D-87.5-91.5-20230926	9/26/2023	87.5-91.5	N	4602890021	BEDROCK	26.2	74.9	--	< 120 U	< 0.10 UJ	< 0.10 UJ	--	--	216 HF	--	8.5 HF	--	20.2 HF
	114-MW57D-87.5-91.5-20231219	12/19/2023	87.5-91.5	N	JD79185	BEDROCK	22.5	97.2	--	< 250 U	--	--	17.5	--	250	--	8.27	--	--
	114-MW57D-87.5-91.5-20240329	3/29/2024	87.5-91.5	N	JD85454	BEDROCK	21.3 J-	86.7	--	--	--	< 0.20 UJ	--	--	190	--	7.55	--	--
	114-MW57D-87.5-91.5-20240621	6/21/2024	87.5-91.5	N	JD90886	BEDROCK	31.6	84.5	--	--	--	< 0.20 UJ	--	--	234	--	8.36	--	--
	114-MW57D-87.5-91.5-20240918	9/18/2024	87.5-91.5	N	JD96352	BEDROCK	22.2	87.8	--	--	--	< 0.20 UJ	--	--	283	--	8.18	--	--
	114-MW57D-87.5-91.5-20241218	12/18/2024	87.5-91.5	N	JE2940	BEDROCK	232	3.0 J+	--	--	--	< 0.20 U	--	283	271	7.85	7.70	--	--
114-MW57D-Port2	114-MW57D-96.5-100.5-20230628	6/28/2023	96.5-100.5	N	4602832531	BEDROCK	--	--	--	--	--	--	--	--	424 HF	--	8.4 HF	--	23.5 HF
	114-MW57D-96.5-100.5-20230628	6/28/2023	96.5-100.5	N	4602832532	BEDROCK	6.7	88.0	--	< 120 U	< 0.10 U	< 0.10 UHF	--	--	--	--	--	--	--
	114-MW57D-96.5-100.5-20230926	9/26/2023	96.5-100.5	N	4602890021	BEDROCK	51.0	50.6	--	38.9 J	< 0.10 UJ	< 0.10 UJ	--	--	211 HF	--	8.5 HF	--	20.3 HF
	114-MW57D-96.5-100.5-20231219	12/19/2023	96.5-100.5	N	JD79185	BEDROCK	27.2	94.5	--	< 250 U	--	--	13.2	--	249	--	8.25	--	--
	114-MW57D-96.5-100.5-20240329	3/29/2024	96.5-100.5	N	JD85454	BEDROCK	29.8 J-	82.0	--	--	--	< 0.20 UJ	--	--	206	--	7.50	--	--
	114-MW57D-96.5-100.5-20240621	6/21/2024	96.5-100.5	N	JD90886	BEDROCK	28.7	92.3	--	--	--	< 0.20 UJ	--	--	245	--	8.24	--	--
	114-MW57D-96.5-100.5-20240918	9/18/2024	96.5-100.5	N	JD96352	BEDROCK	18.7 J-	90.2	--	--	--	< 0.20 UJ	--	--	278	--	8.22	--	--
	114-MW57D-96.5-100.5-20241218	12/18/2024	96.5-100.5	N	JE2940	BEDROCK	214	5.4 J+	--	--	--	< 0.20 U	--	286	285	7.79	7.68	--	--
114-MW57D-Port3	114-MW57D-104-108-20230628	6/28/2023	104-108	N	4602832531	BEDROCK	--	--	--	--	--	--	--	--	436 HF	--	8.4 HF	--	23.5 HF
	114-MW57D-104-108-20230628	6/28/2023	104-108	N	4602832532	BEDROCK	4.6	96.9	--	< 120 U	< 0.10 U	< 0.10 UHF	--	--	--	--	--	--	--
	114-MW57D-104.0-108.0-20230926	9/26/2023	104-108	N	4602890021	BEDROCK	16.6	106	--	44.5 J	< 0.10 UJ	0.30 J	--	--	237 HF	--	8.0 HF	--	19.4 HF
	114-MW57D-104-108-20231219	12/19/2023	104-108	N	JD79185	BEDROCK	15.1	124	--	< 250 U	--	--	23.7	--	265	--	8.08	--	--
	114-MW57D-104-108-20240329	3/29/2024	104-108	N	JD85454	BEDROCK	22.1 J-	76.9	--	--	--	< 0.20 UJ	--	--	199	--	7.43	--	--
	114-MW57D-104-108-20240621	6/21/2024	104-108	N	JD90886	BEDROCK	17.4	128	--	--	--	< 0.20 UJ	--	--	251	--	8.05	--	--
	114-MW57D-104-108-20240918	9/18/2024	104-108	N	JD96352	BEDROCK	14.7 J-	107	--	--	--	< 0.20 UJ	--	--	283	--	8.11	--	--
	114-MW57D-104-108-20241218	12/18/2024	104-108	N	JE2940	BEDROCK	387 J-	4.6 J+	--	--	--	< 0.20 U	--	318	296	7.72	7.49	--	--

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PPG, Jersey City, New Jersey

							Chromium				Field Geochemistry					
						Analyte	CHROMIUM		CHROMIUM (HEXAVALENT)		Oxidation-Reduction Potential (ORP)	Oxygen, Dissolved	pH	Specific Conductivity (Field)	Temperature (Field)	Turbidity
						CAS-RN	7440-47-3	7440-47-3	18540-29-9	18540-29-9	REDOX	DO	pH	SC-F	TEMP-F	TURB
						Fraction	D	T	D	T	T	T	T	T	T	T
						GWQS	70	70								
						Units	ug/L	ug/L	ug/L	ug/L	mv	mg/L	su	mS/cm	deg C	NTU
Well ID	Sample ID	Sample Date	Sample Depth Interval (ft bTOIC)	Sample Type	Lab SDG	Water Bearing Zone										
114-MW57D-Port4	114-MW57D-109-113-20230628	6/28/2023	109-113	N	4602832531	BEDROCK	--	< 4.0 U	--	< 10.0 U	3	3.06	8.02	0.77	21.08	1.34
	114-MW57D-109-113-20230628	6/28/2023	109-113	N	4602832532	BEDROCK	--	--	--	--	--	--	--	--	--	--
	114-MW57D-109.0-113.0-20230926	9/26/2023	109-113	N	4602890021	BEDROCK	--	3.2 J	--	< 10.0 U	13.2	3.61	8.29	0.662	15.52	0.86
	114-MW57D-109-113-20231219	12/19/2023	109-113	N	JD79185	BEDROCK	--	6.8 J	--	< 10 U	--	--	--	--	--	--
	114-MW57D-109-113-20240329	3/29/2024	109-113	N	JD85454	BEDROCK	--	3.5 J	--	< 10 U	-348.4	0.35	8.25	1.321	11.7	0.8
	114-MW57D-109-113-20240621	6/21/2024	109-113	N	JD90886	BEDROCK	--	3.6 J	--	< 10 U	-179.3	0.97	8.12	1.207	30.7	0.71
	114-MW57D-109-113-20240918	9/18/2024	109-113	N	JD96352	BEDROCK	--	5.2 J	--	< 10 U	-340.3	2.08	8.18	1.063	20.5	1.7
	114-MW57D-109-113-20241218	12/18/2024	109-113	N	JE2940	BEDROCK	--	**77.0**	< 10 U	4.6 J	-- NEV	-- NEV	-- NEV	-- NEV	-- NEV	22.5
114-MW58C	114-MW58C-75.0-20230629	6/29/2023	75	N	4602833321	WEATHERED BEDROCK	--	2.9 J	--	< 10.0 UJ	-56.9	2.13	7.99	0.836	18.3	8.66
	114-MW58C-75.0-20230629	6/29/2023	75	N	4602833322	WEATHERED BEDROCK	--	--	--	--	--	--	--	--	--	--
114-MW58C-R	114-MW58C-R-84.5-20240214	2/14/2024	84.5	N	JD82442	WEATHERED BEDROCK	--	47.1	--	56	-515.2	0.46	12.88	8.34	12.1	3.51
	114-MW58C-R-84.5-20240214-X	2/14/2024	84.5	FD	JD82442	WEATHERED BEDROCK	--	46.4	--	50	--	--	--	--	--	--
	114-MW58C-R-84.5-20240617	6/17/2024	84.5	N	JD90605	WEATHERED BEDROCK	--	< 10 U	--	< 10 U	-97.2	3.38	11.14	0.625	17.4	9.09
	114-MW58C-R-84.5-20240919	9/19/2024	84.5	N	JD96459	WEATHERED BEDROCK	--	< 10 U	--	< 10 U	-148.6	0.15	11.75	1.42	17.7	0.4
	114-MW58C-R-84.5-20241213	12/13/2024	84.5	N	JE2642	WEATHERED BEDROCK	--	< 10 U	--	< 10 UJ	-64.8	0.19	11.1	0.88	14.1	0.28
114-MW60C	114-MW60C-122-20230628	6/28/2023	122	N	4602832531	WEATHERED BEDROCK	--	**117**	--	< 10.0 U	-189.7	0.69	9.85	3.095	22.29	22.5
	114-MW60C-122-20230628	6/28/2023	122	N	4602832532	WEATHERED BEDROCK	--	--	--	--	--	--	--	--	--	--
	114-MW60C-122-20230726	7/26/2023	122	N	4602849651	WEATHERED BEDROCK	--	8.4	--	< 10.0 U	-263.1	0.09	11.32	4.893	26.17	3.61
	114-MW60C-122-20230726-X	7/26/2023	122	FD	4602849651	WEATHERED BEDROCK	--	6.0	--	< 10.0 U	--	--	--	--	--	--
	114-MW60C-122-20230823	8/23/2023	122	N	4602867531	WEATHERED BEDROCK	--	4.2	--	< 10.0 U	-163.5	99.2	10.15	4.545	24.19	1.32
	114-MW60C-122-20230823-X	8/23/2023	122	FD	4602867531	WEATHERED BEDROCK	--	5.7	--	< 10.0 U	--	--	--	--	--	--
114-MW60C-R	114-MW60C-R-117.5-20240214	2/14/2024	117.5	N	JD82442	WEATHERED BEDROCK	--	29.1	--	33	-541.8	0.4	12.72	7.32	13.4	5.97
	114-MW60C-R-117.5-20240619	6/19/2024	117.5	N	JD90728	WEATHERED BEDROCK	--	59.4	--	66	-129	0.27	12.11	3.568	20.8	5.5
	114-MW60C-R-117.5-20240619-X	6/19/2024	117.5	FD	JD90728	WEATHERED BEDROCK	--	59.3	--	70	--	--	--	--	--	--
	114-MW60C-R-117.5-20240918	9/18/2024	117.5	N	JD96352	WEATHERED BEDROCK	--	68.3	--	76	-169.6	0.11	12.28	4.96	18.1	0.76
	114-MW60C-R-117.5-20240918-X	9/18/2024	117.5	FD	JD96352	WEATHERED BEDROCK	--	66.8	--	75	--	--	--	--	--	--
	114-MW60C-R-117.5-20241218	12/18/2024	117.5	N	JE2940	WEATHERED BEDROCK	--	50.8	--	60	-93.7	0.46	12.05	3.55	15.6	0.95

Table 4-1
Groundwater Analytical Results for Bedrock Monitoring Wells
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Garfield Avenue Group Sites
PPG, Jersey City, New Jersey

							Lab Geochemistry											
						Analyte	TOTAL ORGANIC CARBON	SULFATE	METHANE	IRON	IRON (FERRIC)	IRON (FERROUS)	MANGANESE	Oxidation-Reduction Potential (ORP)		pH		Temperature	
						CAS-RN	TOC	14808-79-8	74-82-8	7439-89-6	20074-52-6	15438-31-0	7439-96-5	REDOX	REDOX	pH	pH	TEMP	TEMP
						Fraction	T	T	T	D	D	D	D	D	T	D	T	D	T
						GWQS		250		300			50						
						Units	mg/L	mg/L	ug/L	ug/L	mg/L	mg/L	ug/L	mv	mv	su	su	deg C	deg C
Well ID	**Sample ID**	**Sample Date**	**Sample Depth Interval (ft bTOIC)**	**Sample Type**	**Lab SDG**	**Water Bearing Zone**													
114-MW57D-Port4	114-MW57D-109-113-20230628	6/28/2023	109-113	N	4602832531	BEDROCK	--	--	--	--	--	--	--	--	428 HF	--	8.4 HF	--	23.0 HF
	114-MW57D-109-113-20230628	6/28/2023	109-113	N	4602832532	BEDROCK	6.2	97.2	--	< 120 U	< 0.10 U	0.11 HF	--	--	--	--	--	--	--
	114-MW57D-109.0-113.0-20230926	9/26/2023	109-113	N	4602890021	BEDROCK	20.6	87.0	--	24.9 J	< 0.10 UJ	< 0.10 UJ	--	--	241 HF	--	8.1 HF	--	19.6 HF
	114-MW57D-109-113-20231219	12/19/2023	109-113	N	JD79185	BEDROCK	17.5	111	--	< 250 U	--	--	24.0	--	269	--	8.11	--	--
	114-MW57D-109-113-20240329	3/29/2024	109-113	N	JD85454	BEDROCK	21.1 J-	49.7	--	--	--	< 0.20 UJ	--	--	202	--	7.54	--	--
	114-MW57D-109-113-20240621	6/21/2024	109-113	N	JD90886	BEDROCK	20.6	123	--	--	--	< 0.20 UJ	--	--	252	--	8.13	--	--
	114-MW57D-109-113-20240918	9/18/2024	109-113	N	JD96352	BEDROCK	16.8 J-	100	--	--	--	< 0.20 UJ	--	--	284	--	8.03	--	--
	114-MW57D-109-113-20241218	12/18/2024	109-113	N	JE2940	BEDROCK	355 J-	7.4 J+	--	--	--	< 0.20 UJ	--	318	299	7.63	7.62	--	--
114-MW58C	114-MW58C-75.0-20230629	6/29/2023	75	N	4602833321	WEATHERED BEDROCK	--	--	--	--	--	--	--	--	--	--	8.3 HF	--	23.8 HF
	114-MW58C-75.0-20230629	6/29/2023	75	N	4602833322	WEATHERED BEDROCK	1.4	131	--	143	0.14	< 0.10 UHF	--	--	--	--	--	--	--
114-MW58C-R	114-MW58C-R-84.5-20240214	2/14/2024	84.5	N	JD82442	WEATHERED BEDROCK	8.2	22.6	--	--	--	< 0.20 U	--	--	87.1	--	12.40	--	--
	114-MW58C-R-84.5-20240214-X	2/14/2024	84.5	FD	JD82442	WEATHERED BEDROCK	7.6	25.7	--	--	--	< 0.20 U	--	--	93.4	--	12.39	--	--
	114-MW58C-R-84.5-20240617	6/17/2024	84.5	N	JD90605	WEATHERED BEDROCK	3.6	146	--	--	--	< 0.20 UJ	--	--	110	--	11.24	--	--
	114-MW58C-R-84.5-20240919	9/19/2024	84.5	N	JD96459	WEATHERED BEDROCK	1.1 J+	117	--	--	--	< 0.20 UJ	--	--	104	--	11.26	--	--
	114-MW58C-R-84.5-20241213	12/13/2024	84.5	N	JE2642	WEATHERED BEDROCK	2.3	149	--	--	--	< 0.20 UJ	--	--	195	--	10.26	--	--
114-MW60C	114-MW60C-122-20230628	6/28/2023	122	N	4602832531	WEATHERED BEDROCK	--	--	--	--	--	--	--	--	108 HF	--	8.6 HF	--	23.5 HF
	114-MW60C-122-20230628	6/28/2023	122	N	4602832532	WEATHERED BEDROCK	15.5	64.6	--	< 120 U	< 0.10 U	0.11 HF	--	--	--	--	--	--	--
	114-MW60C-122-20230726	7/26/2023	122	N	4602849651	WEATHERED BEDROCK	38.4 J	67.9 J	--	< 120 U	< 0.10 UJ	0.099 J	--	--	-90 HF	--	9.7 HF	--	22.3 HF
	114-MW60C-122-20230726-X	7/26/2023	122	FD	4602849651	WEATHERED BEDROCK	23.8 J	104 J	--	< 120 U	< 0.10 UJ	0.15 J	--	--	-75 HF	--	9.4 HF	--	23.1 HF
	114-MW60C-122-20230823	8/23/2023	122	N	4602867531	WEATHERED BEDROCK	42.6	60.4	--	--	--	--	--	--	-130 HF	--	10.8 HF	--	23.1 HF
	114-MW60C-122-20230823-X	8/23/2023	122	FD	4602867531	WEATHERED BEDROCK	37.3	54.2	--	--	--	--	--	--	-130 HF	--	10.6 HF	--	23.7 HF
114-MW60C-R	114-MW60C-R-117.5-20240214	2/14/2024	117.5	N	JD82442	WEATHERED BEDROCK	13.2	2.2	--	--	--	< 0.20 UJ	--	--	85.2	--	12.29	--	--
	114-MW60C-R-117.5-20240619	6/19/2024	117.5	N	JD90728	WEATHERED BEDROCK	1.0	13.5 JB	--	--	--	< 0.20 UJ	--	--	140	--	12.20	--	--
	114-MW60C-R-117.5-20240619-X	6/19/2024	117.5	FD	JD90728	WEATHERED BEDROCK	1.1	12.9 JB	--	--	--	< 0.20 UJ	--	--	137	--	12.22	--	--
	114-MW60C-R-117.5-20240918	9/18/2024	117.5	N	JD96352	WEATHERED BEDROCK	1.9 J	23.0	--	--	--	< 0.20 U	--	--	102	--	11.95	--	--
	114-MW60C-R-117.5-20240918-X	9/18/2024	117.5	FD	JD96352	WEATHERED BEDROCK	< 1.0 UJ	24.1	--	--	--	< 0.20 U	--	--	101	--	11.98	--	--
	114-MW60C-R-117.5-20241218	12/18/2024	117.5	N	JE2940	WEATHERED BEDROCK	1.5	34.6	--	--	--	< 0.20 U	--	--	144	--	11.84	--	--

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Groundwater Analytical Results for Bedrock Monitoring Wells
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							Chromium				Field Geochemistry					
						Analyte	CHROMIUM		CHROMIUM (HEXAVALENT)		Oxidation-Reduction Potential (ORP)	Oxygen, Dissolved	pH	Specific Conductivity (Field)	Temperature (Field)	Turbidity
						CAS-RN	7440-47-3	7440-47-3	18540-29-9	18540-29-9	REDOX	DO	pH	SC-F	TEMP-F	TURB
						Fraction	D	T	D	T	T	T	T	T	T	T
						GWQS	70	70								
						Units	ug/L	ug/L	ug/L	ug/L	mv	mg/L	su	mS/cm	deg C	NTU
Well ID	Sample ID	Sample Date	Sample Depth Interval (ft bTOIC)	Sample Type	Lab SDG	Water Bearing Zone										
114-MW61D	114-MW-61D-117.3-20211215	12/15/2021	117.3	N	4602492051	BEDROCK	--	42.9	--	37.4 JB	--	--	--	--	--	--
	114-MW-61D-120.8-20211215	12/15/2021	120.8	N	4602492051	BEDROCK	--	40.8	--	53.9 JB	--	--	--	--	--	--
	114-MW-61D-125.8-20211215	12/15/2021	125.8	N	4602492051	BEDROCK	--	35.0	--	< 31.9 UB	--	--	--	--	--	--
	114-MW-61D-130.8-20211216	12/16/2021	130.8	N	4602492741	BEDROCK	--	67.3	--	58.6 J+	--	--	--	--	--	--
	114-MW-61D-130.8-20211216X	12/16/2021	130.8	FD	4602492741	BEDROCK	--	**88.3**	--	68.6 J+	--	--	--	--	--	--
	114-MW-61D-135.8-20211216	12/16/2021	135.8	N	4602492741	BEDROCK	--	59.8	--	45.3 J+	--	--	--	--	--	--
	114-MW61D-130.8-20220421	4/21/2022	130.8	N	4602567051	BEDROCK	--	28.3	--	26.4 J	--	--	--	--	--	--
	114-MW61D-117-20230629	6/29/2023	117	N	4602833321	BEDROCK	< 4.0 U	20.0	< 10.0 U	< 10.0 UJ	-68.5	0.95	9.12	0.282	24.26	46.5
	114-MW61D-117-20230629	6/29/2023	117	N	4602833322	BEDROCK	--	--	--	--	--	--	--	--	--	--
	114-MW61D-121-20230630	6/30/2023	121	N	4602833941	BEDROCK	--	13.6	--	< 10.0 U	-67.9	0.66	9.19	0.305	31.78	24.7
	114-MW61D-121-20230630	6/30/2023	121	N	4602833942	BEDROCK	--	--	--	--	--	--	--	--	--	--
	114-MW61D-126-20230630	6/30/2023	126	N	4602833941	BEDROCK	--	10.0	--	< 10.0 U	-98.4	0.81	9.11	0.298	25.08	12
	114-MW61D-126-20230630	6/30/2023	126	N	4602833942	BEDROCK	--	--	--	--	--	--	--	--	--	--
	114-MW61D-131-20230703	7/3/2023	131	N	4602835471	BEDROCK	< 4.0 U	17.1	< 10.0 RA	< 10.0 RA	-19.6	3.45	8.96	0.331	28.91	53.6
	114-MW61D-131-20230703	7/3/2023	131	N	4602835472	BEDROCK	--	--	--	--	--	--	--	--	--	--
	114-MW61D-136-20230703	7/3/2023	136	N	4602835471	BEDROCK	< 4.0 U	**157**	< 10.0 RA	< 10.0 RA	0.9	3.44	8.94	0.36	34.94	-- OR
	114-MW61D-136-20230703	7/3/2023	136	N	4602835472	BEDROCK	--	--	--	--	--	--	--	--	--	--
	114-MW61D-117-20230921	9/21/2023	117	N	4602887311	BEDROCK	--	3.3 J	--	< 10.0 U	-149.7	0.42	8.24	0.2783	23.2	9.17
	114-MW61D-121-20230922	9/22/2023	121	N	4602888091	BEDROCK	4.2	6.4	< 10.0 U	< 10.0 U	33.3	0.18	8.51	0.308	22	40.2
	114-MW61D-126.0-20230926	9/26/2023	126	N	4602890021	BEDROCK	< 4.0 U	21.0	< 10.0 U	< 10.0 U	-49	4.16	9.26	0.231	15.55	102
	114-MW61D-131.0-20230926	9/26/2023	131	N	4602890021	BEDROCK	< 4.0 U	4.4	< 10.0 U	< 10.0 U	-3.8	2.42	9.23	0.233	15.27	15.8
	114-MW61D-136.0-20230927	9/27/2023	136	N	4602890621	BEDROCK	< 4.0 U	10.7	< 10.0 U	< 10.0 U	17	1.79	8.64	0.267	16.39	43.4
	114-MW61D-131.0-20231219	12/19/2023	131	N	JD79185	BEDROCK	< 10 U	< 10 U	< 10 U	< 10 U	-91.2	8.39	8.94	0.4016	11	17.9
	114-MW61D-136.0-20231219	12/19/2023	136	N	JD79185	BEDROCK	< 10 U	6.2 J	< 10 U	< 10 U	-215.9	0.49	9.05	0.4033	14.3	43
	114-MW61D-121.0-20231220	12/20/2023	121	N	JD79285	BEDROCK	< 10 U	< 10 U	< 10 U	< 10 U	-1.7	11.57	8.9	0.3988	14	14.1
	114-MW61D-126.0-20231220	12/20/2023	126	N	JD79285	BEDROCK	< 10 U	5.0 J	< 10 U	< 10 U	-49.6	3.17	9	0.3762	11.9	19.7
	114-MW61D-117.0-20231222	12/22/2023	117	N	JD79443	BEDROCK	0.64 J	7.8 J	< 10 U	< 10 U	16	12.71	9.14	0.286	10.9	29
	114-MW61D-117.0-20240318	3/18/2024	117	N	JD84684	BEDROCK	--	< 10 U	--	< 10 U	37.2	0.09	8.76	0.339	13	4.97
	114-MW61D-121.0-20240318	3/18/2024	121	N	JD84684	BEDROCK	--	3.3 J	--	< 10 U	38.7	0.23	8.76	0.3416	14	6.01
	114-MW61D-126.0-20240318	3/18/2024	126	N	JD84684	BEDROCK	--	3.1 J	--	< 10 U	44.5	0.26	8.79	0.3507	13.1	5.5
	114-MW61D-131.0-20240319	3/19/2024	131	N	JD84758	BEDROCK	--	< 10 U	--	< 10 U	78.2	0.27	8.8	0.3274	12.4	9.26
	114-MW61D-136.0-20240319	3/19/2024	136	N	JD84758	BEDROCK	--	< 10 U	--	< 10 U	56	0.25	8.79	0.3295	12.9	8.12
	114-MW61D-117.0-20240617	6/17/2024	117	N	JD90605	BEDROCK	--	< 10 UB	--	< 10 U	-236.1	0.86	8.79	0.2741	25.2	8.33
	114-MW61D-117.0-20240617-X	6/17/2024	117	FD	JD90605	BEDROCK	--	< 10 UB	--	< 10 U	--	--	--	--	--	--
	114-MW61D-121.0-20240617	6/17/2024	121	N	JD90605	BEDROCK	--	< 10 UB	--	< 10 U	-233.8	0.94	8.76	0.2714	27.1	4.54
	114-MW61D-126.0-20240619	6/19/2024	126	N	JD90728	BEDROCK	--	5.1 J	--	< 10 U	-23.7	0.02	8.24	0.14	22.76	8.7
	114-MW61D-131.0-20240619	6/19/2024	131	N	JD90728	BEDROCK	--	4.4 J	--	< 10 U	-56.3	0.02	8.14	0.172	22.58	67.2
	114-MW61D-136.0-20240619	6/19/2024	136	N	JD90728	BEDROCK	--	4.6 J	--	< 10 U	-50.5	0.02	8.17	0.147	25.1	9.54
	114-MW61D-117.0-20240916	9/16/2024	117	N	JD96195	BEDROCK	--	< 10 U	--	< 10 U	-118.5	0.27	8.88	0.30	21.1	8.52
	114-MW61D-121.0-20240916	9/16/2024	121	N	JD96195	BEDROCK	--	< 10 U	--	< 10 U	-119.4	0.77	8.85	0.30	24.1	4.26
	114-MW61D-121.0-20240916-X	9/16/2024	121	FD	JD96195	BEDROCK	--	< 10 U	--	< 10 U	--	--	--	--	--	--
	114-MW61D-126.0-20240917	9/17/2024	126	N	JD96274	BEDROCK	--	3.8 J	--	< 10 U	-214.5	2.33	8.66	0.28	17.9	8.82
	114-MW61D-131.0-20240917	9/17/2024	131	N	JD96274	BEDROCK	--	< 10 U	--	< 10 U	-225.3	0.34	8.7	0.28	18.7	7.45
	114-MW61D-136.0-20240918	9/18/2024	136	N	JD96352	BEDROCK	--	4.2 J	--	< 10 U	-326.9	0.65	8.77	0.29	17.1	9.1
	114-MW61D-117.0-20241213	12/13/2024	117	N	JE2642	BEDROCK	--	< 10 U	--	< 10 UJ	-173.2	7.63	9.1	0.29	9.6	3.05
	114-MW61D-121.0-20241217	12/17/2024	121	N	JE2865	BEDROCK	--	< 10 U	--	< 10 U	-153.4	0.38	8.78	0.28	13.3	4.62
	114-MW61D-121.0-20241217-X	12/17/2024	121	FD	JE2865	BEDROCK	--	< 10 U	--	4.2 J	--	--	--	--	--	--
	114-MW61D-126.0-20241217	12/17/2024	126	N	JE2865	BEDROCK	--	< 10 U	--	< 10 U	-155.6	0.32	8.8	0.28	14.4	4.21
	114-MW61D-131.0-20241218	12/18/2024	131	N	JE2940	BEDROCK	--	< 10 U	--	< 10 U	-163.7	0.4	8.88	0.28	12.9	4.65
	114-MW61D-136.0-20241218	12/18/2024	136	N	JE2940	BEDROCK	--	< 10 U	--	3.4 J	-173.3	0.42	8.83	0.29	14.8	7.81

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AECOM

							Lab Geochemistry											
						Analyte	TOTAL ORGANIC CARBON	SULFATE	METHANE	IRON	IRON (FERRIC)	IRON (FERROUS)	MANGANESE	Oxidation-Reduction Potential (ORP)		pH		Temperature	
						CAS-RN	TOC	14808-79-8	74-82-8	7439-89-6	20074-52-6	15438-31-0	7439-96-5	REDOX	REDOX	pH	pH	TEMP	TEMP
						Fraction	T	T	T	D	D	D	D	D	T	D	T	D	T
						GWQS		250		300			50						
						Units	mg/L	mg/L	ug/L	ug/L	mg/L	mg/L	ug/L	mv	mv	su	su	deg C	deg C
Well ID	Sample ID	Sample Date	Sample Depth Interval (ft bTOIC)	Sample Type	Lab SDG	Water Bearing Zone												
114-MW61D	114-MW-61D-117.3-20211215	12/15/2021	117.3	N	4602492051	BEDROCK	--	--	--	--	--	--	--	--	269 HF	--	10 HF	--	22.2 HF
	114-MW-61D-120.8-20211215	12/15/2021	120.8	N	4602492051	BEDROCK	--	--	--	--	--	--	--	--	282 HF	--	10 HF	--	22.4 HF
	114-MW-61D-125.8-20211215	12/15/2021	125.8	N	4602492051	BEDROCK	--	--	--	--	--	--	--	--	294 HF	--	10 HF	--	22.3 HF
	114-MW-61D-130.8-20211216	12/16/2021	130.8	N	4602492741	BEDROCK	--	--	--	--	--	--	--	--	522 HF	--	9.7 HF	--	21.5 HF
	114-MW-61D-130.8-20211216X	12/16/2021	130.8	FD	4602492741	BEDROCK	--	--	--	--	--	--	--	--	390 HF	--	9.8 HF	--	21.6 HF
	114-MW-61D-135.8-20211216	12/16/2021	135.8	N	4602492741	BEDROCK	--	--	--	--	--	--	--	--	374 HF	--	9.8 HF	--	22.1 HF
	114-MW61D-130.8-20220421	4/21/2022	130.8	N	4602567051	BEDROCK	--	--	--	--	--	--	--	--	325 HF	--	8.9 HF	--	20.5 HF
	114-MW61D-117-20230629	6/29/2023	117	N	4602833321	BEDROCK	--	--	--	--	--	--	--	500 HF	111 HF	9.2 HF	9.0 HF	23.1 HF	23.7 HF
	114-MW61D-117-20230629	6/29/2023	117	N	4602833322	BEDROCK	2.1	20.6	--	< 120 U	< 0.10 U	< 0.10 UHF	--	--	--	--	--	--	--
	114-MW61D-121-20230630	6/30/2023	121	N	4602833941	BEDROCK	--	--	--	--	--	--	--	--	494 HF	--	9.2 HF	--	22.1 HF
	114-MW61D-121-20230630	6/30/2023	121	N	4602833942	BEDROCK	2.6	43.3	--	< 120 U	< 0.10 U	< 0.10 UHF	--	--	--	--	--	--	--
	114-MW61D-126-20230630	6/30/2023	126	N	4602833941	BEDROCK	--	--	--	--	--	--	--	--	464 HF	--	7.2 HF	--	22.0 HF
	114-MW61D-126-20230630	6/30/2023	126	N	4602833942	BEDROCK	2.3	39.6	--	< 120 U	< 0.10 U	< 0.10 UHF	--	--	--	--	--	--	--
	114-MW61D-131-20230703	7/3/2023	131	N	4602835471	BEDROCK	--	--	--	--	--	--	--	501 HF	438 HF	9.2 HF	9.1 HF	20.3 HF	22.4 HF
	114-MW61D-131-20230703	7/3/2023	131	N	4602835472	BEDROCK	15.7	30.8	--	< 120 U	< 0.10 U	< 0.10 UHF	--	--	--	--	--	--	--
	114-MW61D-136-20230703	7/3/2023	136	N	4602835471	BEDROCK	--	--	--	--	--	--	--	486 HF	443 HF	9.2 HF	9.1 HF	21.3 HF	22.7 HF
	114-MW61D-136-20230703	7/3/2023	136	N	4602835472	BEDROCK	21.3	25.9	--	< 120 U	< 0.10 U	< 0.10 UHF	--	--	--	--	--	--	--
	114-MW61D-117-20230921	9/21/2023	117	N	4602887311	BEDROCK	2.5	28.5	--	< 120 U	< 0.10 UJ	< 0.10 UJ	--	--	401 HF	--	9.0 HF	--	20.5 HF
	114-MW61D-121-20230922	9/22/2023	121	N	4602888091	BEDROCK	3.3 JB	28.9	--	< 120 U	< 0.10 UJ	< 0.10 UJ	--	460 HF	538 HF	8.9 HF	9.0 HF	20.3 HF	19.0 HF
	114-MW61D-126.0-20230926	9/26/2023	126	N	4602890021	BEDROCK	4.8	24.1	--	102 J	< 0.10 UJ	0.93 J	--	261 HF	263 HF	8.9 HF	9.0 HF	19.3 HF	19.5 HF
	114-MW61D-131.0-20230926	9/26/2023	131	N	4602890021	BEDROCK	4.0	23.8	--	37.0 J	< 0.10 UJ	0.20 J	--	264 HF	254 HF	9.1 HF	9.1 HF	19.0 HF	19.6 HF
	114-MW61D-136.0-20230927	9/27/2023	136	N	4602890621	BEDROCK	2.4 JB	39.6	--	< 120 U	< 0.10 UJ	0.17 J	--	165 HF	158 HF	9.1 HF	8.8 HF	21.6 HF	21.0 HF
	114-MW61D-131.0-20231219	12/19/2023	131	N	JD79185	BEDROCK	0.81 J	42.5	--	< 250 U	--	--	< 10 U	268	254	8.79	8.70	--	--
	114-MW61D-136.0-20231219	12/19/2023	136	N	JD79185	BEDROCK	1.7	40.1	--	< 250 U	--	--	< 10 U	273	270	8.91	8.91	--	--
	114-MW61D-121.0-20231220	12/20/2023	121	N	JD79285	BEDROCK	0.69 J	48.7	--	< 250 U	--	< 0.20 UJ	< 10 U	260	265	8.81	8.82	--	--
	114-MW61D-126.0-20231220	12/20/2023	126	N	JD79285	BEDROCK	0.71 J	46.1	--	< 250 U	--	< 0.20 UJ	< 10 U	262	232	8.90	8.93	--	--
	114-MW61D-117.0-20231222	12/22/2023	117	N	JD79443	BEDROCK	1.0	56.8	--	25.7 J	--	--	0.68 J	306	306	8.86	8.90	--	--
	114-MW61D-117.0-20240318	3/18/2024	117	N	JD84684	BEDROCK	1.1	46.9	--	--	--	< 0.20 UJ	--	--	621	--	8.49	--	--
	114-MW61D-121.0-20240318	3/18/2024	121	N	JD84684	BEDROCK	1.1	45.7	--	--	--	< 0.20 UJ	--	--	615	--	8.50	--	--
	114-MW61D-126.0-20240318	3/18/2024	126	N	JD84684	BEDROCK	0.97 J	43.7	--	--	--	< 0.20 UJ	--	--	616	--	8.55	--	--
	114-MW61D-131.0-20240319	3/19/2024	131	N	JD84758	BEDROCK	1.5	41.6	--	--	--	< 0.20 UJ	--	--	364	--	8.56	--	--
	114-MW61D-136.0-20240319	3/19/2024	136	N	JD84758	BEDROCK	2.0	42.6	--	--	--	< 0.20 UJ	--	--	359	--	8.57	--	--
	114-MW61D-117.0-20240617	6/17/2024	117	N	JD90605	BEDROCK	0.96 J	44.0	--	--	--	< 0.20 UJ	--	--	258	--	8.73	--	--
	114-MW61D-117.0-20240617-X	6/17/2024	117	FD	JD90605	BEDROCK	< 1.0 U	42.7	--	--	--	< 0.20 UJ	--	--	251	--	8.73	--	--
	114-MW61D-121.0-20240617	6/17/2024	121	N	JD90605	BEDROCK	2.5	41.7	--	--	--	< 0.20 UJ	--	--	222	--	8.76	--	--
	114-MW61D-126.0-20240619	6/19/2024	126	N	JD90728	BEDROCK	< 1.0 U	39.6	--	--	--	< 0.20 UJ	--	--	336	--	8.76	--	--
	114-MW61D-131.0-20240619	6/19/2024	131	N	JD90728	BEDROCK	2.1	40.9	--	--	--	< 0.20 UJ	--	--	338	--	8.74	--	--
	114-MW61D-136.0-20240619	6/19/2024	136	N	JD90728	BEDROCK	0.78 J	44.1	--	--	--	< 0.20 UJ	--	--	347	--	8.74	--	--
	114-MW61D-117.0-20240916	9/16/2024	117	N	JD96195	BEDROCK	< 1.0 U	39.3 J	--	--	--	< 0.20 UJ	--	--	248	--	8.87	--	--
	114-MW61D-121.0-20240916	9/16/2024	121	N	JD96195	BEDROCK	0.95 J	39.1 J	--	--	--	< 0.20 UJ	--	--	250	--	8.85	--	--
	114-MW61D-121.0-20240916-X	9/16/2024	121	FD	JD96195	BEDROCK	0.74 J	38.9 J	--	--	--	< 0.20 UJ	--	--	256	--	8.77	--	--
	114-MW61D-126.0-20240917	9/17/2024	126	N	JD96274	BEDROCK	< 1.0 U	39.1	--	--	--	< 0.20 UJ	--	--	215	--	8.88	--	--
	114-MW61D-131.0-20240917	9/17/2024	131	N	JD96274	BEDROCK	< 1.0 U	39.7	--	--	--	< 0.20 UJ	--	--	218	--	8.83	--	--
	114-MW61D-136.0-20240918	9/18/2024	136	N	JD96352	BEDROCK	0.73 J	39.1	--	--	--	< 0.20 UJ	--	--	244	--	8.79	--	--
	114-MW61D-117.0-20241213	12/13/2024	117	N	JE2642	BEDROCK	1.4	32.9	--	--	--	< 0.20 UJ	--	--	274	--	8.85	--	--
	114-MW61D-121.0-20241217	12/17/2024	121	N	JE2865	BEDROCK	2.7 J+	33.8	--	--	--	< 0.20 U	--	--	309	--	8.88	--	--
	114-MW61D-121.0-20241217-X	12/17/2024	121	FD	JE2865	BEDROCK	2.6 J+	33.4	--	--	--	< 0.20 U	--	--	303	--	8.86	--	--
	114-MW61D-126.0-20241217	12/17/2024	126	N	JE2865	BEDROCK	2.6 J+	33.3	--	--	--	< 0.20 U	--	--	288	--	8.89	--	--
	114-MW61D-131.0-20241218	12/18/2024	131	N	JE2940	BEDROCK	2.2	33.4	--	--	--	< 0.20 U	--	--	270	--	8.83	--	--
	114-MW61D-136.0-20241218	12/18/2024	136	N	JE2940	BEDROCK	2.3	34.2	--	--	--	< 0.20 U	--	--	280	--	8.87	--	--

Table 4-1
Groundwater Analytical Results for Bedrock Monitoring Wells
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PPG, Jersey City, New Jersey

							Chromium				Field Geochemistry					
						Analyte	CHROMIUM		CHROMIUM (HEXAVALENT)		Oxidation-Reduction Potential (ORP)	Oxygen, Dissolved	pH	Specific Conductivity (Field)	Temperature (Field)	Turbidity
						CAS-RN	7440-47-3	7440-47-3	18540-29-9	18540-29-9	REDOX	DO	pH	SC-F	TEMP-F	TURB
						Fraction	D	T	D	T	T	T	T	T	T	T
						GWQS	70	70								
						Units	ug/L	ug/L	ug/L	ug/L	mv	mg/L	su	mS/cm	deg C	NTU
Well ID	Sample ID	Sample Date	Sample Depth Interval (ft bTOIC)	Sample Type	Lab SDG	Water Bearing Zone										
114-MW62C	114-MW62C-73-20230629	6/29/2023	73	N	4602833321	WEATHERED BEDROCK	--	< 4.0 U	--	< 10.0 UJ	19.2	1.99	6.7	1.27	19.23	7.15
	114-MW62C-73-20230629	6/29/2023	73	N	4602833322	WEATHERED BEDROCK	--	--	--	--	--	--	--	--	--	--
	114-MW62C-73.0-20230925	9/25/2023	73	N	4602889531	WEATHERED BEDROCK	--	7.3	--	< 10.0 U	134.9	0.25	7.14	1.388	16.5	1.26
	114-MW62C-73.0-20231222	12/22/2023	73	N	JD79443	WEATHERED BEDROCK	--	9.5 J	--	5.2 J	94.1	0.58	6.95	1.457	9.2	0.83
	114-MW62C-73.0-20240319	3/19/2024	73	N	JD84758	WEATHERED BEDROCK	--	< 10 U	--	< 10 U	374.9	0.31	6.78	1.429	12.3	1.01
	114-MW62C-73.0-20240617	6/17/2024	73	N	JD90605	WEATHERED BEDROCK	--	< 10 U	--	< 10 U	74	0.37	6.94	1.159	16.8	1.03
	114-MW62C-73.0-20240918	9/18/2024	73	N	JD96352	WEATHERED BEDROCK	--	4.7 J	--	< 10 U	-76	0.6	6.79	1.45	17.9	1.82
	114-MW62C-73.0-20241213	12/13/2024	73	N	JE2642	WEATHERED BEDROCK	--	< 10 U	--	< 10 U	85.3	0.29	7.01	1.55	9.6	9.02
114-MW64C	114-MW64C-94.5-20230628	6/28/2023	94.5	N	4602832531	WEATHERED BEDROCK	--	14.0	--	< 10.0 U	-152.5	0.92	7.85	1.28	19.96	5.57
	114-MW64C-94.5-20230628	6/28/2023	94.5	N	4602832532	WEATHERED BEDROCK	--	--	--	--	--	--	--	--	--	--
114-MW66D	114-MW-66D-118.5-20211214	12/14/2021	118.5	N	4602491481	BEDROCK	--	**58600**	--	55700	--	--	--	--	--	--
	114-MW-66D-121.5-20211214	12/14/2021	121.5	N	4602491481	BEDROCK	--	**61300**	--	56800	--	--	--	--	--	--
	114-MW-66D-124.0-20211214	12/14/2021	124	N	4602491481	BEDROCK	--	**62100**	--	54000	--	--	--	--	--	--
	114-MW-66D-128.0-20211215	12/15/2021	128	N	4602492051	BEDROCK	--	**49600**	--	54500	--	--	--	--	--	--
	114-MW-66D-128.0-20211215X	12/15/2021	128	FD	4602492051	BEDROCK	--	**50900**	--	50700	--	--	--	--	--	--
	114-MW-66D-140.0-20211221	12/21/2021	140	N	4602496041	BEDROCK	--	**57300**	--	55000	--	--	--	--	--	--
114-MW66D-Port1	114-MW66D-91-97-20220421	4/21/2022	91-97	N	4602567051	BEDROCK	--	**805 J**	--	2410 J	--	--	--	--	--	--
	114-MW66D-91-97-20220421-X	4/21/2022	91-97	FD	4602567051	BEDROCK	--	3.1 J	--	< 10.0 UJ	--	--	--	--	--	--
	114-MW66D-91-97-20220513	5/13/2022	91-97	N	4602580871	BEDROCK	--	**2580**	--	161	--	--	--	--	--	--
	114-MW66D-91-97-20220513-X	5/13/2022	91-97	FD	4602580871	BEDROCK	--	**2470**	--	164	--	--	--	--	--	--
	114-MW66D-91-97-20220603	6/3/2022	91-97	N	4602593611	BEDROCK	--	**1600 J**	--	1050 J	--	--	--	--	--	--
	114-MW66D-91-97-20220603-X	6/3/2022	91-97	FD	4602593611	BEDROCK	--	**299 J**	--	1090 J	--	--	--	--	--	--
	114-MW66D-91-97-20220705	7/5/2022	91-97	N	4602613181	BEDROCK	--	**427**	--	51.4	--	--	--	--	--	--
	114-MW66D-91-97-20220705-X	7/5/2022	91-97	FD	4602613181	BEDROCK	--	**385**	--	58.0	--	--	--	--	--	--
	114-MW66D-91-97-20220804	8/4/2022	91-97	N	4602632541	BEDROCK	--	**909**	--	389	--	--	--	--	--	--
	114-MW66D-91-97-20220804-X	8/4/2022	91-97	FD	4602632541	BEDROCK	--	**1110**	--	422	--	--	--	--	--	--
	114-MW66D-91-97-20230628	6/28/2023	91-97	N	4602832531	BEDROCK	--	**4110**	--	3870	--	--	--	--	--	--
	114-MW66D-91-97-20230628	6/28/2023	91-97	N	4602832532	BEDROCK	--	--	--	--	--	--	--	--	--	--
	114-MW66D-91.0-97.0-20230927	9/27/2023	91-97	N	4602890621	BEDROCK	--	**3120**	--	2720	37.1	6.62	10.28	0.942	20.57	3.57
	114-MW66D-91.0-97.0-20230927X	9/27/2023	91-97	FD	4602890621	BEDROCK	--	**2810**	--	2570	--	--	--	--	--	--
	114-MW66D-91-97-20231215	12/15/2023	91-97	N	JD78984	BEDROCK	--	**2820 J**	--	4100 RA	-50.4	2.58	10.57	0.995	12.1	4.94
	114-MW66D-91-97-20240319	3/19/2024	91-97	N	JD84758	BEDROCK	--	**1310**	--	330	-88.7	2.2	10.76	1.077	8.9	9.12
	114-MW66D-91-97-20240617	6/17/2024	91-97	N	JD90605	BEDROCK	--	**1370**	--	660	-73.3	0.92	10.62	1.176	27.7	5.16
	114-MW66D-91-97-20240917	9/17/2024	91-97	N	JD96274	BEDROCK	--	**4710**	--	4300	-159.5	1.94	10.92	0.962	19.9	3.5
	114-MW66D-91-97-20241217	12/17/2024	91-97	N	JE2865	BEDROCK	--	**2540**	--	3300	117.9	5.27	10.04	0.931	16.7	2.25
114-MW66D-Port2	114-MW66D-107-111-20220421	4/21/2022	107-111	N	4602567051	BEDROCK	--	2.8 J	--	< 10.0 UJ	--	--	--	--	--	--
	114-MW66D-107-111-20220603	6/3/2022	107-111	N	4602593611	BEDROCK	--	4.1	--	< 10.0 U	--	--	--	--	--	--
	114-MW66D-107-111-20220705	7/5/2022	107-111	N	4602613181	BEDROCK	--	4.1	--	< 10.0 U	--	--	--	--	--	--
	114-MW66D-107-111-20230628	6/28/2023	107-111	N	4602832531	BEDROCK	--	**82.2**	--	51.6	57.2	5.03	8.25	0.696	26.94	1.78
	114-MW66D-107-111-20230628	6/28/2023	107-111	N	4602832532	BEDROCK	--	--	--	--	--	--	--	--	--	--
	114-MW66D-107.0-111.0-20230927	9/27/2023	107-111	N	4602890621	BEDROCK	--	**110**	--	< 10.0 U	--	--	--	--	--	--
	114-MW66D-107-111-20231215	12/15/2023	107-111	N	JD78984	BEDROCK	--	**102**	--	17 RA	-113.5	1.71	9.03	0.753	12.1	2.42
	114-MW66D-107-111-20240319	3/19/2024	107-111	N	JD84758	BEDROCK	--	48.5	--	< 10 U	-87.5	2.75	8.72	0.789	8.3	2.71
	114-MW66D-107-111-20240617	6/17/2024	107-111	N	JD90605	BEDROCK	--	12.2	--	< 10 U	-61.2	2.25	8.34	0.701	28.5	2.81
	114-MW66D-107-111-20240917	9/17/2024	107-111	N	JD96274	BEDROCK	--	41.5	--	< 10 U	-193.4	2.26	8.52	0.7	19.5	1.68
	114-MW66D-107-111-20241217	12/17/2024	107-111	N	JE2865	BEDROCK	--	39.1	--	< 10 U	-2.2	3.34	8.55	0.712	16.3	1.57

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AECOM

							Lab Geochemistry													
						Analyte	TOTAL ORGANIC CARBON	SULFATE	METHANE	IRON	IRON (FERRIC)	IRON (FERROUS)	MANGANESE	Oxidation-Reduction Potential (ORP)		pH		Temperature	
						CAS-RN	TOC	14808-79-8	74-82-8	7439-89-6	20074-52-6	15438-31-0	7439-96-5	REDOX	REDOX	pH	pH	TEMP	TEMP
						Fraction	T	T	T	D	D	D	D	D	T	D	T	D	T
						GWQS		250		300			50						
						Units	mg/L	mg/L	ug/L	ug/L	mg/L	mg/L	ug/L	mv	mv	su	su	deg C	deg C
Well ID	**Sample ID**	**Sample Date**	**Sample Depth Interval (ft bTOIC)**	**Sample Type**	**Lab SDG**	**Water Bearing Zone**													
114-MW62C	114-MW62C-73-20230629	6/29/2023	73	N	4602833321	WEATHERED BEDROCK	--	--	--	--	--	--	--	--	191 HF	--	8.0 HF	--	24.5 HF
	114-MW62C-73-20230629	6/29/2023	73	N	4602833322	WEATHERED BEDROCK	31.6	34.0	--	< 120 U	< 0.10 U	< 0.10 UHF	--	--	--	--	--	--	--
	114-MW62C-73.0-20230925	9/25/2023	73	N	4602889531	WEATHERED BEDROCK	1.8	48.4	--	< 120 U	R	R	--	--	382 HF	--	7.8 HF	--	21.8 HF
	114-MW62C-73.0-20231222	12/22/2023	73	N	JD79443	WEATHERED BEDROCK	1.0	57.6	--	< 250 U	--	--	--	--	321	--	7.35	--	--
	114-MW62C-73.0-20240319	3/19/2024	73	N	JD84758	WEATHERED BEDROCK	0.99 J	55.5	--	--	--	0.042 J	--	--	382	--	8.56	--	--
	114-MW62C-73.0-20240617	6/17/2024	73	N	JD90605	WEATHERED BEDROCK	2.1	52.0	--	--	--	< 0.20 UJ	--	--	304	--	7.66	--	--
	114-MW62C-73.0-20240918	9/18/2024	73	N	JD96352	WEATHERED BEDROCK	< 1.0 U	61.2	--	--	--	< 0.20 U	--	--	380	--	7.28	--	--
	114-MW62C-73.0-20241213	12/13/2024	73	N	JE2642	WEATHERED BEDROCK	2.0	65.3	--	--	--	< 0.20 UJ	--	--	376	--	7.93	--	--
114-MW64C	114-MW64C-94.5-20230628	6/28/2023	94.5	N	4602832531	WEATHERED BEDROCK	--	--	--	--	--	--	--	--	215 HF	--	8.3 HF	--	23.2 HF
	114-MW64C-94.5-20230628	6/28/2023	94.5	N	4602832532	WEATHERED BEDROCK	2.4	72.1	--	< 120 U	< 0.10 U	< 0.10 UHF	--	--	--	--	--	--	--
114-MW66D	114-MW-66D-118.5-20211214	12/14/2021	118.5	N	4602491481	BEDROCK	--	--	--	--	--	--	--	--	298 HF	--	8.1 HF	--	19.1 HF
	114-MW-66D-121.5-20211214	12/14/2021	121.5	N	4602491481	BEDROCK	--	--	--	--	--	--	--	--	320 HF	--	8.1 HF	--	21.6 HF
	114-MW-66D-124.0-20211214	12/14/2021	124	N	4602491481	BEDROCK	--	--	--	--	--	--	--	--	322 HF	--	8.1 HF	--	21.5 HF
	114-MW-66D-128.0-20211215	12/15/2021	128	N	4602492051	BEDROCK	--	--	--	--	--	--	--	--	399 HF	--	8.0 HF	--	21.1 HF
	114-MW-66D-128.0-20211215X	12/15/2021	128	FD	4602492051	BEDROCK	--	--	--	--	--	--	--	--	402 HF	--	8.0 HF	--	21.0 HF
	114-MW-66D-140.0-20211221	12/21/2021	140	N	4602496041	BEDROCK	--	--	--	--	--	--	--	--	186 HF	--	8.5 HF	--	22.3 HF
114-MW66D-Port1	114-MW66D-91-97-20220421	4/21/2022	91-97	N	4602567051	BEDROCK	--	--	--	--	--	--	--	--	323 HF	--	8.6 HF	--	20.6 HF
	114-MW66D-91-97-20220421-X	4/21/2022	91-97	FD	4602567051	BEDROCK	--	--	--	--	--	--	--	--	371 HF	--	8.2 HF	--	21.1 HF
	114-MW66D-91-97-20220513	5/13/2022	91-97	N	4602580871	BEDROCK	--	--	--	--	--	--	--	--	443 HF	--	8.1 HF	--	20.7 HF
	114-MW66D-91-97-20220513-X	5/13/2022	91-97	FD	4602580871	BEDROCK	--	--	--	--	--	--	--	--	457 HF	--	8.5 HF	--	21.0 HF
	114-MW66D-91-97-20220603	6/3/2022	91-97	N	4602593611	BEDROCK	6.9	--	--	--	--	--	--	--	363 HF	--	8.7 HF	--	20.6 HF
	114-MW66D-91-97-20220603-X	6/3/2022	91-97	FD	4602593611	BEDROCK	--	--	--	--	--	--	--	--	--	--	--	--	--
	114-MW66D-91-97-20220705	7/5/2022	91-97	N	4602613181	BEDROCK	6.2	--	--	--	--	--	--	--	379 HF	--	7.3 HF	--	20.7 HF
	114-MW66D-91-97-20220705-X	7/5/2022	91-97	FD	4602613181	BEDROCK	--	--	--	--	--	--	--	--	333 HF	--	8.3 HF	--	20.6 HF
	114-MW66D-91-97-20220804	8/4/2022	91-97	N	4602632541	BEDROCK	--	--	--	--	--	--	--	--	450 HF	--	8.1 HF	--	21.5 HF
	114-MW66D-91-97-20220804-X	8/4/2022	91-97	FD	4602632541	BEDROCK	--	--	--	--	--	--	--	--	--	--	--	--	--
	114-MW66D-91-97-20230628	6/28/2023	91-97	N	4602832531	BEDROCK	--	--	--	--	--	--	--	--	-19 HF	--	9.7 HF	--	23.6 HF
	114-MW66D-91-97-20230628	6/28/2023	91-97	N	4602832532	BEDROCK	5.3	28.9	--	< 120 U	< 0.10 U	< 0.10 UHF	--	--	--	--	--	--	--
	114-MW66D-91.0-97.0-20230927	9/27/2023	91-97	N	4602890621	BEDROCK	6.6	91.5	--	< 120 U	< 0.10 UJ	< 0.10 UJ	--	--	95.0 HF	--	10.3 HF	--	21.0 HF
	114-MW66D-91.0-97.0-20230927X	9/27/2023	91-97	FD	4602890621	BEDROCK	6.5	91.5	--	< 120 U	< 0.10 UJ	< 0.10 UJ	--	--	133 HF	--	10.4 HF	--	22.5 HF
	114-MW66D-91-97-20231215	12/15/2023	91-97	N	JD78984	BEDROCK	5.5	98.8	--	< 250 U	--	--	< 10 U	--	74.1	--	10.65	--	--
	114-MW66D-91-97-20240319	3/19/2024	91-97	N	JD84758	BEDROCK	7.3	96.2	--	--	--	< 0.20 UJ	--	--	64.0	--	10.30	--	--
	114-MW66D-91-97-20240617	6/17/2024	91-97	N	JD90605	BEDROCK	12.0	100	--	--	--	< 0.20 UJ	--	--	28.7	--	10.80	--	--
	114-MW66D-91-97-20240917	9/17/2024	91-97	N	JD96274	BEDROCK	6.1 J+	114	--	--	--	< 0.20 UJ	--	--	129	--	11.00	--	--
	114-MW66D-91-97-20241217	12/17/2024	91-97	N	JE2865	BEDROCK	15.8	109	--	--	--	< 0.20 U	--	--	221	--	10.68	--	--
114-MW66D-Port2	114-MW66D-107-111-20220421	4/21/2022	107-111	N	4602567051	BEDROCK	--	--	--	--	--	--	--	--	373 HF	--	8.2 HF	--	20.6 HF
	114-MW66D-107-111-20220603	6/3/2022	107-111	N	4602593611	BEDROCK	3.0	--	--	--	--	--	--	--	320 HF	--	8.7 HF	--	20.6 HF
	114-MW66D-107-111-20220705	7/5/2022	107-111	N	4602613181	BEDROCK	3.7	--	--	--	--	--	--	--	321 HF	--	8.1 HF	--	20.7 HF
	114-MW66D-107-111-20230628	6/28/2023	107-111	N	4602832531	BEDROCK	--	--	--	--	--	--	--	--	210 HF	--	8.5 HF	--	23.4 HF
	114-MW66D-107-111-20230628	6/28/2023	107-111	N	4602832532	BEDROCK	2.0	71.3	--	< 120 U	< 0.10 U	< 0.10 UHF	--	--	--	--	--	--	--
	114-MW66D-107.0-111.0-20230927	9/27/2023	107-111	N	4602890621	BEDROCK	2.6 JB	112	--	< 120 U	< 0.10 UJ	0.16 J	--	--	446 HF	--	8.7 HF	--	18.9 HF
	114-MW66D-107-111-20231215	12/15/2023	107-111	N	JD78984	BEDROCK	1.9	123	--	< 250 U	--	--	11.8	--	284	--	8.73	--	--
	114-MW66D-107-111-20240319	3/19/2024	107-111	N	JD84758	BEDROCK	1.6	134	--	--	--	< 0.20 UJ	--	--	376	--	8.05	--	--
	114-MW66D-107-111-20240617	6/17/2024	107-111	N	JD90605	BEDROCK	2.5	139	--	--	--	< 0.20 UJ	--	--	259	--	8.18	--	--
	114-MW66D-107-111-20240917	9/17/2024	107-111	N	JD96274	BEDROCK	0.87 J	128	--	--	--	< 0.20 UJ	--	--	230	--	8.44	--	--
	114-MW66D-107-111-20241217	12/17/2024	107-111	N	JE2865	BEDROCK	4.1 J+	116	--	--	--	< 0.20 U	--	--	280	--	8.53	--	--

Table 4-1
Groundwater Analytical Results for Bedrock Monitoring Wells
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							Chromium				Field Geochemistry					
						Analyte	CHROMIUM		CHROMIUM (HEXAVALENT)		Oxidation-Reduction Potential (ORP)	Oxygen, Dissolved	pH	Specific Conductivity (Field)	Temperature (Field)	Turbidity
						CAS-RN	7440-47-3	7440-47-3	18540-29-9	18540-29-9	REDOX	DO	pH	SC-F	TEMP-F	TURB
						Fraction	D	T	D	T	T	T	T	T	T	T
						GWQS	70	70								
						Units	ug/L	ug/L	ug/L	ug/L	mv	mg/L	su	mS/cm	deg C	NTU
Well ID	Sample ID	Sample Date	Sample Depth Interval (ft bTOIC)	Sample Type	Lab SDG	Water Bearing Zone										
114-MW66D-Port3	114-MW66D-118-123-20220421	4/21/2022	118-123	N	4602567051	BEDROCK	--	< 4.0 U	--	< 10.0 UJ	--	--	--	--	--	--
	114-MW66D-118-123-20220603	6/3/2022	118-123	N	4602593611	BEDROCK	--	3.4 J	--	< 10.0 U	--	--	--	--	--	--
	114-MW66D-118-123-20220705	7/5/2022	118-123	N	4602613181	BEDROCK	--	2.5 J	--	< 10.0 U	--	--	--	--	--	--
	114-MW66D-118-123-20230628	6/28/2023	118-123	N	4602832531	BEDROCK	--	4.2	--	< 10.0 U	8.6	4.66	8.19	0.643	26.6	1.32
	114-MW66D-118-123-20230628	6/28/2023	118-123	N	4602832532	BEDROCK	--	--	--	--	--	--	--	--	--	--
	114-MW66D-118.0-123.0-20230927	9/27/2023	118-123	N	4602890621	BEDROCK	--	8.2	--	< 10.0 U	29.5	3.69	8.73	0.731	19.81	0.93
	114-MW66D-118-123-20231215	12/15/2023	118-123	N	JD78984	BEDROCK	--	15.7	--	< 10 RA	-185.4	1.64	8.91	0.755	11.9	0.74
	114-MW66D-118-123-20240319	3/19/2024	118-123	N	JD84758	BEDROCK	--	< 10 U	--	< 10 U	-157.9	2.32	8.67	0.794	7.3	1.21
	114-MW66D-118-123-20240617	6/17/2024	118-123	N	JD90605	BEDROCK	--	< 10 UB	--	< 10 U	-126.9	0.99	8.64	0.707	30.3	0.82
	114-MW66D-118-123-20240917	9/17/2024	118-123	N	JD96274	BEDROCK	--	34.7	--	< 10 U	-250.1	1.83	9.06	0.719	19.9	0.92
	114-MW66D-118-123-20241217	12/17/2024	118-123	N	JE2865	BEDROCK	--	40.0	--	< 10 U	-63	3.8	9.16	0.719	15.5	1.12
114-MW66D-Port4	114-MW66D-124-129-20220421	4/21/2022	124-129	N	4602567051	BEDROCK	--	**189**	--	164 J	--	--	--	--	--	--
	114-MW66D-124-129-20220603	6/3/2022	124-129	N	4602593611	BEDROCK	--	< 4.0 U	--	< 10.0 U	--	--	--	--	--	--
	114-MW66D-124-129-20220705	7/5/2022	124-129	N	4602613181	BEDROCK	--	< 4.0 U	--	< 10.0 U	--	--	--	--	--	--
	114-MW66D-124-129-20230628	6/28/2023	124-129	N	4602832531	BEDROCK	--	4.6	--	< 10.0 U	-40	2.99	8.15	0.613	27.59	0.68
	114-MW66D-124-129-20230628	6/28/2023	124-129	N	4602832532	BEDROCK	--	--	--	--	--	--	--	--	--	--
	114-MW66D-124.0-129.0-20230927	9/27/2023	124-129	N	4602890621	BEDROCK	--	3.8 J	--	< 10.0 U	9.5	3.01	8.55	0.685	20.8	0.48
	114-MW66D-124-129-20231215	12/15/2023	124-129	N	JD78984	BEDROCK	--	3.9 J	--	< 10 RA	-208.9	1.8	9.08	0.72	11.6	0.61
	114-MW66D-124-129-20240319	3/19/2024	124-129	N	JD84758	BEDROCK	--	< 10 U	--	< 10 U	-169.5	2.21	8.55	0.686	7.8	1.58
	114-MW66D-124-129-20240617	6/17/2024	124-129	N	JD90605	BEDROCK	--	< 10 UB	--	< 10 U	-140.8	0.73	8.47	0.66	29.5	0.46
	114-MW66D-124-129-20240917	9/17/2024	124-129	N	JD96274	BEDROCK	--	8.3 J	--	< 10 U	-305.2	1.52	9.36	0.722	20.3	0.7
	114-MW66D-124-129-20241217	12/17/2024	124-129	N	JE2865	BEDROCK	--	6.0 J	--	< 10 U	-87	2.43	8.28	0.3764	15.3	0.79
114-MW66D-Port5	114-MW66D-137-140-20220421	4/21/2022	137-140	N	4602567051	BEDROCK	--	**181**	--	165 J	--	--	--	--	--	--
	114-MW66D-137-140-20220603	6/3/2022	137-140	N	4602593611	BEDROCK	--	< 4.0 U	--	< 10.0 U	--	--	--	--	--	--
	114-MW66D-137-140-20220705	7/5/2022	137-140	N	4602613181	BEDROCK	--	< 4.0 U	--	< 10.0 U	--	--	--	--	--	--
	114-MW66D-137-140-20230628	6/28/2023	137-140	N	4602832531	BEDROCK	--	3.5 J	--	< 10.0 U	2.4	5.26	8.05	0.612	31.86	3.68
	114-MW66D-137-140-20230628	6/28/2023	137-140	N	4602832532	BEDROCK	--	--	--	--	--	--	--	--	--	--
	114-MW66D-137.0-140.0-20230927	9/27/2023	137-140	N	4602890621	BEDROCK	--	3.2 J	--	< 10.0 U	34.7	2.87	8.13	0.684	21.38	0.48
	114-MW66D-137-140-20231215	12/15/2023	137-140	N	JD78984	BEDROCK	--	< 10 U	--	< 10 RA	-252.7	2.19	8.62	0.696	11.8	0.44
	114-MW66D-137-140-20240319	3/19/2024	137-140	N	JD84758	BEDROCK	--	3.3 J	--	< 10 U	-174.8	1.53	8.46	0.713	7.6	1.18
	114-MW66D-137-140-20240617	6/17/2024	137-140	N	JD90605	BEDROCK	--	< 10 U	--	< 10 U	-164.9	0.54	8.17	0.663	30.1	0.35
	114-MW66D-137-140-20240917	9/17/2024	137-140	N	JD96274	BEDROCK	--	< 10 U	--	< 10 U	--	--	9.02	--	21.2	0.46
	114-MW66D-137-140-20241217	12/17/2024	137-140	N	JE2865	BEDROCK	--	4.1 J	--	< 10 U	-187	1.87	9	0.678	15.6	0.87
114-MW71D	114-MW-71D-119.0-20211214	12/14/2021	119	N	4602491481	BEDROCK	--	42.9	--	17.3	--	--	--	--	--	--
	114-MW-71D-126.0-20211214	12/14/2021	126	N	4602491481	BEDROCK	--	53.5	--	25.2	--	--	--	--	--	--
	114-MW-71D-132.5-20211214	12/14/2021	132.5	N	4602491481	BEDROCK	--	54.8	--	19.5	--	--	--	--	--	--
	114-MW-71D-137.0-20211215	12/15/2021	137	N	4602492051	BEDROCK	--	44.2	--	< 21.9 UB	--	--	--	--	--	--
	114-MW-71D-141.5-20211221	12/21/2021	141.5	N	4602496041	BEDROCK	--	29.0	--	< 10.0 U	--	--	--	--	--	--
114-MW72D	114-MW-72D-103.5-20211215	12/15/2021	103.5	N	4602492051	BEDROCK	--	**2200**	--	2400	--	--	--	--	--	--
	114-MW-72D-113.5-20211215	12/15/2021	113.5	N	4602492051	BEDROCK	--	**2250**	--	2490	--	--	--	--	--	--
	114-MW-72D-125.0-20211216	12/16/2021	125	N	4602492741	BEDROCK	--	**2580**	--	2480 J+	--	--	--	--	--	--

Table 4-1
Groundwater Analytical Results for Bedrock Monitoring Wells
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PPG, Jersey City, New Jersey

							Lab Geochemistry													
						Analyte	TOTAL ORGANIC CARBON	SULFATE	METHANE	IRON	IRON (FERRIC)	IRON (FERROUS)	MANGANESE	Oxidation-Reduction Potential (ORP)		pH		Temperature	
						CAS-RN	TOC	14808-79-8	74-82-8	7439-89-6	20074-52-6	15438-31-0	7439-96-5	REDOX	REDOX	pH	pH	TEMP	TEMP
						Fraction	T	T	T	D	D	D	D	D	T	D	T	D	T
						GWQS		250		300			50						
						Units	mg/L	mg/L	ug/L	ug/L	mg/L	mg/L	ug/L	mv	mv	su	su	deg C	deg C
Well ID	**Sample ID**	**Sample Date**	**Sample Depth Interval (ft bTOIC)**	**Sample Type**	**Lab SDG**	**Water Bearing Zone**													
114-MW66D-Port3	114-MW66D-118-123-20220421	4/21/2022	118-123	N	4602567051	BEDROCK	--	--	--	--	--	--	--	--	379 HF	--	8.3 HF	--	20.7 HF
	114-MW66D-118-123-20220603	6/3/2022	118-123	N	4602593611	BEDROCK	3.7	--	--	--	--	--	--	--	339 HF	--	7.4 HF	--	20.8 HF
	114-MW66D-118-123-20220705	7/5/2022	118-123	N	4602613181	BEDROCK	3.7	--	--	--	--	--	--	--	470 HF	--	8.5 HF	--	20.7 HF
	114-MW66D-118-123-20230628	6/28/2023	118-123	N	4602832531	BEDROCK	--	--	--	--	--	--	--	--	188 HF	--	8.4 HF	--	22.9 HF
	114-MW66D-118-123-20230628	6/28/2023	118-123	N	4602832532	BEDROCK	4.3	72.6	--	< 120 U	< 0.10 U	< 0.10 UHF	--	--	--	--	--	--	--
	114-MW66D-118.0-123.0-20230927	9/27/2023	118-123	N	4602890621	BEDROCK	5.5	111	--	< 120 U	< 0.10 UJ	< 0.10 UJ	--	--	194 HF	--	8.6 HF	--	22.5 HF
	114-MW66D-118-123-20231215	12/15/2023	118-123	N	JD78984	BEDROCK	4.2	127	--	< 250 U	--	--	5.5 J	--	486	--	8.68	--	--
	114-MW66D-118-123-20240319	3/19/2024	118-123	N	JD84758	BEDROCK	3.9	133	--	--	--	< 0.20 UJ	--	--	375	--	8.12	--	--
	114-MW66D-118-123-20240617	6/17/2024	118-123	N	JD90605	BEDROCK	5.9	134	--	--	--	< 0.20 UJ	--	--	251	--	8.55	--	--
	114-MW66D-118-123-20240917	9/17/2024	118-123	N	JD96274	BEDROCK	3.4 J+	135	--	--	--	< 0.20 UJ	--	--	223	--	8.92	--	--
	114-MW66D-118-123-20241217	12/17/2024	118-123	N	JE2865	BEDROCK	9.6	116	--	--	--	< 0.20 U	--	--	275	--	9.13	--	--
114-MW66D-Port4	114-MW66D-124-129-20220421	4/21/2022	124-129	N	4602567051	BEDROCK	--	--	--	--	--	--	--	--	349 HF	--	8.7 HF	--	21.1 HF
	114-MW66D-124-129-20220603	6/3/2022	124-129	N	4602593611	BEDROCK	3.7	--	--	--	--	--	--	--	352 HF	--	8.3 HF	--	21.0 HF
	114-MW66D-124-129-20220705	7/5/2022	124-129	N	4602613181	BEDROCK	3.9	--	--	--	--	--	--	--	337 HF	--	7.4 HF	--	20.8 HF
	114-MW66D-124-129-20230628	6/28/2023	124-129	N	4602832531	BEDROCK	--	--	--	--	--	--	--	--	205 HF	--	8.4 HF	--	22.9 HF
	114-MW66D-124-129-20230628	6/28/2023	124-129	N	4602832532	BEDROCK	7.3	57.9	--	< 120 U	< 0.10 U	< 0.10 UHF	--	--	--	--	--	--	--
	114-MW66D-124.0-129.0-20230927	9/27/2023	124-129	N	4602890621	BEDROCK	9.4	97.8	--	< 120 U	< 0.10 UJ	< 0.10 UJ	--	--	208 HF	--	8.0 HF	--	22.4 HF
	114-MW66D-124-129-20231215	12/15/2023	124-129	N	JD78984	BEDROCK	6.8	113	--	< 250 U	--	--	5.9 J	--	288	--	8.57	--	--
	114-MW66D-124-129-20240319	3/19/2024	124-129	N	JD84758	BEDROCK	6.4	97.9	--	--	--	< 0.20 UJ	--	--	376	--	7.88	--	--
	114-MW66D-124-129-20240617	6/17/2024	124-129	N	JD90605	BEDROCK	9.8	118	--	--	--	< 0.20 UJ	--	--	254	--	8.27	--	--
	114-MW66D-124-129-20240917	9/17/2024	124-129	N	JD96274	BEDROCK	6.0 J+	128	--	--	--	< 0.20 UJ	--	--	213	--	9.20	--	--
	114-MW66D-124-129-20241217	12/17/2024	124-129	N	JE2865	BEDROCK	12.1	106	--	--	--	< 0.20 U	--	--	297	--	8.91	--	--
114-MW66D-Port5	114-MW66D-137-140-20220421	4/21/2022	137-140	N	4602567051	BEDROCK	--	--	--	--	--	--	--	--	442 HF	--	7.7 HF	--	20.9 HF
	114-MW66D-137-140-20220603	6/3/2022	137-140	N	4602593611	BEDROCK	3.1	--	--	--	--	--	--	--	464 HF	--	7.7 HF	--	21.1 HF
	114-MW66D-137-140-20220705	7/5/2022	137-140	N	4602613181	BEDROCK	3.2	--	--	--	--	--	--	--	418 HF	--	8.4 HF	--	20.6 HF
	114-MW66D-137-140-20230628	6/28/2023	137-140	N	4602832531	BEDROCK	--	--	--	--	--	--	--	--	228 HF	--	8.3 HF	--	22.9 HF
	114-MW66D-137-140-20230628	6/28/2023	137-140	N	4602832532	BEDROCK	18.9	54.0	--	< 120 U	< 0.10 U	0.12 HF	--	--	--	--	--	--	--
	114-MW66D-137.0-140.0-20230927	9/27/2023	137-140	N	4602890621	BEDROCK	22.5	84.3	--	< 120 U	< 0.10 UJ	0.099 J	--	--	232 HF	--	8.0 HF	--	22.0 HF
	114-MW66D-137-140-20231215	12/15/2023	137-140	N	JD78984	BEDROCK	16.7	103	--	< 250 U	--	--	5.7 J	--	282	--	8.09	--	--
	114-MW66D-137-140-20240319	3/19/2024	137-140	N	JD84758	BEDROCK	16.2	99.8	--	--	--	< 0.20 UJ	--	--	370	--	7.74	--	--
	114-MW66D-137-140-20240617	6/17/2024	137-140	N	JD90605	BEDROCK	28.0	114	--	--	--	< 0.20 UJ	--	--	263	--	7.75	--	--
	114-MW66D-137-140-20240917	9/17/2024	137-140	N	JD96274	BEDROCK	16.1 J+	127	--	--	--	< 0.20 UJ	--	--	221	--	8.79	--	--
	114-MW66D-137-140-20241217	12/17/2024	137-140	N	JE2865	BEDROCK	22.5	98.4	--	--	--	< 0.20 U	--	--	311	--	8.57	--	--
114-MW71D	114-MW-71D-119.0-20211214	12/14/2021	119	N	4602491481	BEDROCK	--	--	--	--	--	--	--	--	226 HF	--	12.2 HF	--	21.8 HF
	114-MW-71D-126.0-20211214	12/14/2021	126	N	4602491481	BEDROCK	--	--	--	--	--	--	--	--	186 HF	--	12.1 HF	--	21.8 HF
	114-MW-71D-132.5-20211214	12/14/2021	132.5	N	4602491481	BEDROCK	--	--	--	--	--	--	--	--	189 HF	--	12.2 HF	--	21.6 HF
	114-MW-71D-137.0-20211215	12/15/2021	137	N	4602492051	BEDROCK	--	--	--	--	--	--	--	--	235 HF	--	12.2 HF	--	22.4 HF
	114-MW-71D-141.5-20211221	12/21/2021	141.5	N	4602496041	BEDROCK	--	--	--	--	--	--	--	--	235 HF	--	12.2 HF	--	21.9 HF
114-MW72D	114-MW-72D-103.5-20211215	12/15/2021	103.5	N	4602492051	BEDROCK	--	--	--	--	--	--	--	--	235 HF	--	12.5 HF	--	21.6 HF
	114-MW-72D-113.5-20211215	12/15/2021	113.5	N	4602492051	BEDROCK	--	--	--	--	--	--	--	--	203 HF	--	12.5 HF	--	21.8 HF
	114-MW-72D-125.0-20211216	12/16/2021	125	N	4602492741	BEDROCK	--	--	--	--	--	--	--	--	301 HF	--	12.5 HF	--	22.0 HF

Table 4-1
Groundwater Analytical Results for Bedrock Monitoring Wells
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							Chromium				Field Geochemistry					
						Analyte	CHROMIUM		CHROMIUM (HEXAVALENT)		Oxidation-Reduction Potential (ORP)	Oxygen, Dissolved	pH	Specific Conductivity (Field)	Temperature (Field)	Turbidity
						CAS-RN	7440-47-3	7440-47-3	18540-29-9	18540-29-9	REDOX	DO	pH	SC-F	TEMP-F	TURB
						Fraction	D	T	D	T	T	T	T	T	T	T
						GWQS	70	70								
						Units	ug/L	ug/L	ug/L	ug/L	mv	mg/L	su	mS/cm	deg C	NTU
Well ID	Sample ID	Sample Date	Sample Depth Interval (ft bTOIC)	Sample Type	Lab SDG	Water Bearing Zone										
114-MW72D-Port1	114-MW72D-102-106-20220421	4/21/2022	102-106	N	4602567051	BEDROCK	--	**130**	--	136 J	--	--	--	--	--	--
	114-MW72D-102-106-20220603	6/3/2022	102-106	N	4602593611	BEDROCK	--	29.0	--	20.4	--	--	--	--	--	--
	114-MW72D-102-106-20220705	7/5/2022	102-106	N	4602613181	BEDROCK	--	**79.6**	--	76.8	--	--	--	--	--	--
	114-MW72D-102-106-20220804	8/4/2022	102-106	N	4602632541	BEDROCK	--	43.8	--	36.7	--	--	--	--	--	--
	114-MW72D-102-106-20230627	6/27/2023	102-106	N	4602831931	BEDROCK	--	**98.2**	--	54.7	-53.6	2.24	12.47	6.784	18	3.21
	114-MW72D-102-106-20230627	6/27/2023	102-106	N	4602831932	BEDROCK	--	--	--	--	--	--	--	--	--	--
	114-MW72D-102-106-20230726	7/26/2023	102-106	N	4602849651	BEDROCK	--	**104**	--	92.8	-132	1.67	12.72	6.98	25.35	0.9
	114-MW72D-102.0-106.0-20230927	9/27/2023	102-106	N	4602890621	BEDROCK	**117**	**124**	99.5	108	3.3	3.13	12.7	8.959	17.41	0.37
	114-MW72D-102-106-20231220	12/20/2023	102-106	N	JD79285	BEDROCK	**132**	**134**	120	120	-221.3	5.68	12.88	8.24	4.4	16.9
	114-MW72D-102-106-20240319	3/19/2024	102-106	N	JD84758	BEDROCK	--	**105**	--	110	-180.8	1.49	12.73	9.52	15.3	0.55
	114-MW72D-102-106-20240621	6/21/2024	102-106	N	JD90886	BEDROCK	**154**	**403**	130	150	-- NEV	-- NEV	-- NEV	-- NEV	-- NEV	34.5
	114-MW72D-102-106-20240813	8/13/2024	102-106	N	JD93987	BEDROCK	--	**183**	--	140	-134.8	2.36	12.42	7.45	19.8	2.5
	114-MW72D-102-106-20240919	9/19/2024	102-106	N	JD96459	BEDROCK	--	**285**	--	300	-90.7	2	12.47	6.82	21.1	0.41
	114-MW72D-102-106-20241217	12/17/2024	102-106	N	JE2865	BEDROCK	**407**	**517**	520	530	-- NEV	-- NEV	-- NEV	-- NEV	-- NEV	17.1
114-MW72D-Port2	114-MW72D-110-114-20220421	4/21/2022	110-114	N	4602567051	BEDROCK	--	**143**	--	83.7 J	--	--	--	--	--	--
	114-MW72D-110-114-20220603	6/3/2022	110-114	N	4602593611	BEDROCK	--	63.6	--	53.6	--	--	--	--	--	--
	114-MW72D-110-114-20220705	7/5/2022	110-114	N	4602613181	BEDROCK	--	**86.8**	--	92.2	--	--	--	--	--	--
	114-MW72D-110-114-20220804	8/4/2022	110-114	N	4602632541	BEDROCK	--	52.4	--	62.0	--	--	--	--	--	--
	114-MW72D-110-114-20230627	6/27/2023	110-114	N	4602831931	BEDROCK	--	**125**	--	61.3	-54.2	2.18	12.55	7.543	18.81	1.39
	114-MW72D-110-114-20230627	6/27/2023	110-114	N	4602831932	BEDROCK	--	--	--	--	--	--	--	--	--	--
	114-MW72D-110-114-20230726	7/26/2023	110-114	N	4602849651	BEDROCK	--	**136**	--	129	-108	9.12	12.86	7.73	24.4	8.85
	114-MW72D-110.0-114.0-20230927	9/27/2023	110-114	N	4602890621	BEDROCK	**82.7**	**90.6**	78.6	80.8	13.8	4.59	12.79	8.06	16.2	0.62
	114-MW72D-110-114-20231220	12/20/2023	110-114	N	JD79285	BEDROCK	**138**	**131**	110	100	-219.4	6.54	12.94	8.82	4	15.7
	114-MW72D-110-114-20240319	3/19/2024	110-114	N	JD84758	BEDROCK	--	**128 J**	--	180 J	-173.2	2.2	12.78	9.83	13.7	2.21
	114-MW72D-110-114-20240621	6/21/2024	110-114	N	JD90886	BEDROCK	67.2	**196**	69	100	-- NEV	-- NEV	-- NEV	-- NEV	-- NEV	-- NEV
	114-MW72D-110-114-20240813	8/13/2024	110-114	N	JD93987	BEDROCK	--	**144**	--	130	-161.9	1.67	12.56	8.34	20	1.82
	114-MW72D-110-114-20240919	9/19/2024	110-114	N	JD96459	BEDROCK	--	**204**	--	220	-98.6	1.69	12.61	7.2	20.6	0.68
	114-MW72D-110-114-20241217	12/17/2024	110-114	N	JE2865	BEDROCK	--	**259**	--	340	-133	3.5	12.66	7.47	15.3	4.48
114-MW72D-Port3	114-MW72D-116-119-20220421	4/21/2022	116-119	N	4602567051	BEDROCK	--	**1710**	--	923 J	--	--	--	--	--	--
	114-MW72D-116-119-20220603	6/3/2022	116-119	N	4602593611	BEDROCK	--	25.3	--	22.6	--	--	--	--	--	--
	114-MW72D-116-119-20220705	7/5/2022	116-119	N	4602613181	BEDROCK	--	31.5	--	19.4	--	--	--	--	--	--
	114-MW72D-116-119-20230627	6/27/2023	116-119	N	4602831931	BEDROCK	--	62.8	--	42.4	-88.6	1.97	12.48	7.322	19.14	0.97
	114-MW72D-116-119-20230627	6/27/2023	116-119	N	4602831932	BEDROCK	--	--	--	--	--	--	--	--	--	--
	114-MW72D-116-119-20230726	7/26/2023	116-119	N	4602849651	BEDROCK	--	23.5	--	33.0	-156	8.82	12.97	7.7	24.38	9.6
	114-MW72D-116.0-119.0-20230927	9/27/2023	116-119	N	4602890621	BEDROCK	57.8	59.0	56.5	60.9	-9.9	4.66	12.75	8.058	15.86	1.52
	114-MW72D-116-119-20231220	12/20/2023	116-119	N	JD79285	BEDROCK	**72.1**	**75.1**	78	76	-240.1	5.74	12.99	8.46	4.5	20.2
	114-MW72D-116-119-20240319	3/19/2024	116-119	N	JD84758	BEDROCK	--	**78.0 J**	--	130 J	-182.9	1.84	12.77	9.38	13.7	1.05
	114-MW72D-116-119-20240621	6/21/2024	116-119	N	JD90886	BEDROCK	26.6	**168**	30	110	-- NEV	-- NEV	-- NEV	-- NEV	-- NEV	-- NEV
	114-MW72D-116-119-20240813	8/13/2024	116-119	N	JD93987	BEDROCK	--	**79.2**	--	84	-160.8	1.55	12.56	8.32	19.9	4.05
	114-MW72D-116-119-20240919	9/19/2024	116-119	N	JD96459	BEDROCK	--	**89.0**	--	93	-127.2	1.21	12.59	7.81	21.2	1.1
	114-MW72D-116-119-20241217	12/17/2024	116-119	N	JE2865	BEDROCK	--	**145**	--	150	-- NEV	-- NEV	-- NEV	-- NEV	-- NEV	-- NEV

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							Lab Geochemistry													
						Analyte	TOTAL ORGANIC CARBON	SULFATE	METHANE	IRON	IRON (FERRIC)	IRON (FERROUS)	MANGANESE	Oxidation-Reduction Potential (ORP)		pH		Temperature	
						CAS-RN	TOC	14808-79-8	74-82-8	7439-89-6	20074-52-6	15438-31-0	7439-96-5	REDOX	REDOX	pH	pH	TEMP	TEMP
						Fraction	T	T	T	D	D	D	D	D	T	D	T	D	T
						GWQS		250		300			50						
						Units	mg/L	mg/L	ug/L	ug/L	mg/L	mg/L	ug/L	mv	mv	su	su	deg C	deg C
Well ID	**Sample ID**	**Sample Date**	**Sample Depth Interval (ft bTOIC)**	**Sample Type**	**Lab SDG**	**Water Bearing Zone**													
114-MW72D-Port1	114-MW72D-102-106-20220421	4/21/2022	102-106	N	4602567051	BEDROCK	--	--	--	--	--	--	--	--	355 HF	--	8.7 HF	--	21.0 HF
	114-MW72D-102-106-20220603	6/3/2022	102-106	N	4602593611	BEDROCK	13.8	--	--	--	--	--	--	--	310 HF	--	6.8 HF	--	20.9 HF
	114-MW72D-102-106-20220705	7/5/2022	102-106	N	4602613181	BEDROCK	8.9	--	--	--	--	--	--	--	443 HF	--	7.5 HF	--	20.7 HF
	114-MW72D-102-106-20220804	8/4/2022	102-106	N	4602632541	BEDROCK	--	--	--	--	--	--	--	--	481 HF	--	12.7 HF	--	21.3 HF
	114-MW72D-102-106-20230627	6/27/2023	102-106	N	4602831931	BEDROCK	--	--	--	--	--	--	--	--	35.0 HF	--	12.5 HF	--	22.7 HF
	114-MW72D-102-106-20230627	6/27/2023	102-106	N	4602831932	BEDROCK	14.0	2.49	--	< 120 U	< 0.10 U	< 0.10 UHF	--	--	--	--	--	--	--
	114-MW72D-102-106-20230726	7/26/2023	102-106	N	4602849651	BEDROCK	9.7 J-	3.16	--	< 120 U	< 0.10 UJ	< 0.10 UJ	--	--	145 HF	--	12.4 HF	--	23.6 HF
	114-MW72D-102.0-106.0-20230927	9/27/2023	102-106	N	4602890621	BEDROCK	27.0	1.95	--	< 120 U	< 0.10 UJ	0.095 J	--	121 HF	363 HF	12.5 HF	12.4 HF	23.0 HF	24.0 HF
	114-MW72D-102-106-20231220	12/20/2023	102-106	N	JD79285	BEDROCK	20.5	3.5 JB	--	< 250 U	--	< 0.20 UJ	< 10 U	99.9	101	12.43	12.44	--	--
	114-MW72D-102-106-20240319	3/19/2024	102-106	N	JD84758	BEDROCK	26.1	3.3	--	--	--	< 0.20 UJ	--	--	181	--	12.32	--	--
	114-MW72D-102-106-20240621	6/21/2024	102-106	N	JD90886	BEDROCK	15.7	6.2 JB	--	--	--	< 0.20 UJ	--	81.8	79.6	12.36	12.42	--	--
	114-MW72D-102-106-20240813	8/13/2024	102-106	N	JD93987	BEDROCK	14.3	5.0	--	--	--	< 0.20 UJ	--	--	174	--	12.51	--	--
	114-MW72D-102-106-20240919	9/19/2024	102-106	N	JD96459	BEDROCK	12.7 J+	6.8	--	--	--	< 0.20 UJ	--	--	58.7	--	12.36	--	--
	114-MW72D-102-106-20241217	12/17/2024	102-106	N	JE2865	BEDROCK	11.9	10.0	--	--	--	< 0.20 U	--	125	121	12.35	12.36	--	--
114-MW72D-Port2	114-MW72D-110-114-20220421	4/21/2022	110-114	N	4602567051	BEDROCK	--	--	--	--	--	--	--	--	341 HF	--	6.7 HF	--	20.6 HF
	114-MW72D-110-114-20220603	6/3/2022	110-114	N	4602593611	BEDROCK	9.2	--	--	--	--	--	--	--	319 HF	--	8.9 HF	--	20.9 HF
	114-MW72D-110-114-20220705	7/5/2022	110-114	N	4602613181	BEDROCK	10.5	--	--	--	--	--	--	--	322 HF	--	7.5 HF	--	21.1 HF
	114-MW72D-110-114-20220804	8/4/2022	110-114	N	4602632541	BEDROCK	--	--	--	--	--	--	--	--	464 HF	--	12.7 HF	--	21.4 HF
	114-MW72D-110-114-20230627	6/27/2023	110-114	N	4602831931	BEDROCK	--	--	--	--	--	--	--	--	86.0 HF	--	12.5 HF	--	23.9 HF
	114-MW72D-110-114-20230627	6/27/2023	110-114	N	4602831932	BEDROCK	18.0	2.31	--	< 120 U	< 0.10 U	< 0.10 UHF	--	--	--	--	--	--	--
	114-MW72D-110-114-20230726	7/26/2023	110-114	N	4602849651	BEDROCK	10.9 J-	2.76	--	< 120 U	< 0.10 UJ	< 0.10 UJ	--	--	141 HF	--	12.5 HF	--	24.1 HF
	114-MW72D-110.0-114.0-20230927	9/27/2023	110-114	N	4602890621	BEDROCK	19.3	2.42	--	< 120 U	< 0.10 UJ	< 0.10 UJ	--	118 HF	325 HF	12.5 HF	12.4 HF	21.4 HF	23.6 HF
	114-MW72D-110-114-20231220	12/20/2023	110-114	N	JD79285	BEDROCK	32.6	< 2.3 UB	--	< 250 U	--	< 0.20 UJ	< 10 U	108	112	12.49	12.49	--	--
	114-MW72D-110-114-20240319	3/19/2024	110-114	N	JD84758	BEDROCK	36.5	2.3	--	--	--	< 0.20 UJ	--	--	182	--	12.39	--	--
	114-MW72D-110-114-20240621	6/21/2024	110-114	N	JD90886	BEDROCK	18.1	7.9 JB	--	--	--	< 0.20 UJ	--	92.8	92.7	12.30	12.32	--	--
	114-MW72D-110-114-20240813	8/13/2024	110-114	N	JD93987	BEDROCK	31.9	3.2	--	--	--	< 0.20 UJ	--	--	127	--	12.49	--	--
	114-MW72D-110-114-20240919	9/19/2024	110-114	N	JD96459	BEDROCK	17.2 J+	3.8	--	--	--	< 0.20 UJ	--	--	56.7	--	12.45	--	--
	114-MW72D-110-114-20241217	12/17/2024	110-114	N	JE2865	BEDROCK	19.7	5.6	--	--	--	< 0.20 U	--	--	109	--	12.45	--	--
114-MW72D-Port3	114-MW72D-116-119-20220421	4/21/2022	116-119	N	4602567051	BEDROCK	--	--	--	--	--	--	--	--	348 HF	--	9.2 HF	--	20.9 HF
	114-MW72D-116-119-20220603	6/3/2022	116-119	N	4602593611	BEDROCK	12.6	--	--	--	--	--	--	--	369 HF	--	7.8 HF	--	20.6 HF
	114-MW72D-116-119-20220705	7/5/2022	116-119	N	4602613181	BEDROCK	13.9	--	--	--	--	--	--	--	363 HF	--	6.5 HF	--	20.9 HF
	114-MW72D-116-119-20230627	6/27/2023	116-119	N	4602831931	BEDROCK	--	--	--	--	--	--	--	--	-41 HF	--	12.5 HF	--	24.6 HF
	114-MW72D-116-119-20230627	6/27/2023	116-119	N	4602831932	BEDROCK	23.2	2.44	--	< 120 U	< 0.10 U	< 0.10 UHF	--	--	--	--	--	--	--
	114-MW72D-116-119-20230726	7/26/2023	116-119	N	4602849651	BEDROCK	20.9 J-	3.24	--	< 120 U	< 0.10 UJ	< 0.10 UJ	--	--	-42 HF	--	12.5 HF	--	22.3 HF
	114-MW72D-116.0-119.0-20230927	9/27/2023	116-119	N	4602890621	BEDROCK	45.9	1.91 J	--	< 120 U	< 0.10 UJ	< 0.10 UJ	--	-35 HF	-80 HF	12.5 HF	12.4 HF	22.0 HF	23.6 HF
	114-MW72D-116-119-20231220	12/20/2023	116-119	N	JD79285	BEDROCK	43.4	< 2.4 UB	--	< 250 U	--	< 0.20 UJ	< 10 U	-19.1	-20.2	12.48	12.49	--	--
	114-MW72D-116-119-20240319	3/19/2024	116-119	N	JD84758	BEDROCK	46.5	2.1	--	--	--	< 0.20 UJ	--	--	49.4	--	12.39	--	--
	114-MW72D-116-119-20240621	6/21/2024	116-119	N	JD90886	BEDROCK	27.1	9.2	--	--	--	< 0.20 UJ	--	93.8	93.6	12.29	12.31	--	--
	114-MW72D-116-119-20240813	8/13/2024	116-119	N	JD93987	BEDROCK	27.1	3.3	--	--	--	< 0.20 UJ	--	--	82.4	--	12.54	--	--
	114-MW72D-116-119-20240919	9/19/2024	116-119	N	JD96459	BEDROCK	23.3 J+	3.8	--	--	--	< 0.20 UJ	--	--	13.2	--	12.45	--	--
	114-MW72D-116-119-20241217	12/17/2024	116-119	N	JE2865	BEDROCK	27.8	5.6	--	--	--	< 0.20 UJ	--	--	102	--	12.45	--	--

Table 4-1
Groundwater Analytical Results for Bedrock Monitoring Wells
Addendum to Groundwater Remedial Investigation Report
Garfield Avenue Group Sites
PPG, Jersey City, New Jersey

							Chromium				Field Geochemistry					
						Analyte	CHROMIUM		CHROMIUM (HEXAVALENT)		Oxidation-Reduction Potential (ORP)	Oxygen, Dissolved	pH	Specific Conductivity (Field)	Temperature (Field)	Turbidity
						CAS-RN	7440-47-3	7440-47-3	18540-29-9	18540-29-9	REDOX	DO	pH	SC-F	TEMP-F	TURB
						Fraction	D	T	D	T	T	T	T	T	T	T
						GWQS	70	70								
						Units	ug/L	ug/L	ug/L	ug/L	mv	mg/L	su	mS/cm	deg C	NTU
Well ID	Sample ID	Sample Date	Sample Depth Interval (ft bTOIC)	Sample Type	Lab SDG	Water Bearing Zone										
114-MW72D-Port4	114-MW72D-123-126-20220421	4/21/2022	123-126	N	4602567051	BEDROCK	--	**994**	--	247 J	--	--	--	--	--	--
	114-MW72D-123-126-20220603	6/3/2022	123-126	N	4602593611	BEDROCK	--	18.0	--	12.6	--	--	--	--	--	--
	114-MW72D-123-126-20220705	7/5/2022	123-126	N	4602613181	BEDROCK	--	12.8	--	< 10.0 U	--	--	--	--	--	--
	114-MW72D-123-126-20230627	6/27/2023	123-126	N	4602831931	BEDROCK	--	23.4	--	22.4	-108.9	1.92	12.46	7.105	19.54	0.96
	114-MW72D-123-126-20230627	6/27/2023	123-126	N	4602831932	BEDROCK	--	--	--	--	--	--	--	--	--	--
	114-MW72D-123-126-20230726	7/26/2023	123-126	N	4602849651	BEDROCK	--	69.1	--	63.5	-176	7.89	12.94	7.57	24.88	3.1
	114-MW72D-123.0-126.0-20230927	9/27/2023	123-126	N	4602890621	BEDROCK	21.3 J	23.2 J	42.1 J	35.5 J	-36.2	4.22	12.72	7.72	16.25	1.04
	114-MW72D-123-126-20231220	12/20/2023	123-126	N	JD79285	BEDROCK	33.7 J	36.3	55 J	36 J	-255.6	3.83	12.92	8.36	4.6	24.5
	114-MW72D-123-126-20240319	3/19/2024	123-126	N	JD84758	BEDROCK	--	44.0 J	--	120 J	-195.8	2.37	12.77	5.25	13.7	3.02
	114-MW72D-123-126-20240621	6/21/2024	123-126	N	JD90886	BEDROCK	10.6	**125**	19	20	-- NEV	-- NEV	-- NEV	-- NEV	-- NEV	-- NEV
	114-MW72D-123-126-20240813	8/13/2024	123-126	N	JD93987	BEDROCK	--	**72.6**	--	95	-166	1.43	12.59	8.36	19.9	9.96
	114-MW72D-123-126-20240919	9/19/2024	123-126	N	JD96459	BEDROCK	--	55.1	--	66	-127.1	1.6	12.59	7.63	20.8	0.98
	114-MW72D-123-126-20241217	12/17/2024	123-126	N	JE2865	BEDROCK	--	**103**	--	120	-137.4	2.73	12.75	7.38	15.1	1.49
114-MW75WR	114-MW75WR-118.5-20240116	1/16/2024	118.5	N	JD80633	WEATHERED BEDROCK	< 10 U	< 10 U	< 10 U	< 10 U	-310.8	0.18	7.87	1.959	11.8	13.4
	114-MW75WR-118.5-20240321	3/21/2024	118.5	N	JD84943	WEATHERED BEDROCK	--	1.6 J	--	< 10 U	-197.9	0.24	7.66	1.847	10.6	1.53
	114-MW75WR-118.0-20240530	5/30/2024	118	N	JD89452	WEATHERED BEDROCK	< 10 U	< 10 U	< 10 U	< 10 U	-202.1	0.32	7.59	2.038	15.5	1.57
	114-MW75WR-118.0-20240807	8/7/2024	118	N	JD93595	WEATHERED BEDROCK	< 10 U	7.2 B	9.8 B	8.6 B	-32.2	0.15	6.59	1.74	19.5	311
	114-MW75WR-118.0-20240906	9/6/2024	118	N	JD95614	WEATHERED BEDROCK	5.3 B	< 10 U	< 10 U	< 10 U	-227.4	0.18	7.62	2.10	19.3	6.72
	114-MW75WR-118.0-20241001	10/1/2024	118	N	JD97187	WEATHERED BEDROCK	< 10 U	< 10 U	< 10 U	< 10 U	-255	0.16	7.73	2.35	19.9	3.74
	114-MW75WR-118.0-20241105	11/5/2024	118	N	JD99684	WEATHERED BEDROCK	< 10 U	< 10 U	< 10 U	< 10 U	-62.7	0.14	7.68	1.87	20.3	2.79
	114-MW75WR-118.0-20241204	12/4/2024	118	N	JE1940	WEATHERED BEDROCK	< 10 U	< 10 U	5.5 B	< 10 U	-263.2	2.38	7.33	2.05	11.9	3.87
114-MW76D	114-MW76D-103.75-20240705	7/5/2024	103.75	N	JD91702	BEDROCK	--	0.67 J	--	< 10 U	-276.1	0.7	11.8	2.323	25.3	5.22
	114-MW76D-108.75-20240709	7/9/2024	108.75	N	JD91859	BEDROCK	--	< 10 U	--	< 10 U	-330.5	0.28	11.96	2.395	22.3	3.6
	114-MW76D-108.75-20240709-X	7/9/2024	108.75	FD	JD91859	BEDROCK	--	< 10 U	--	< 10 U	--	--	--	--	--	--
	114-MW76D-113.75-20240709	7/9/2024	113.75	N	JD91859	BEDROCK	--	< 10 U	--	< 10 U	-304.8	1.31	12	2.372	22.2	8.37
	114-MW76D-118.75-20240709	7/9/2024	118.75	N	JD91859	BEDROCK	--	< 10 U	--	< 10 U	-368	1.66	12	2.395	20.5	9.49
	114-MW76D-123.75-20240710	7/10/2024	123.75	N	JD91932	BEDROCK	--	< 10 U	--	< 10 U	-413.6	3.3	12	2.33	21.4	9.63
	114-MW76D-103.75-20240812	8/12/2024	103.75	N	JD93902	BEDROCK	--	< 10 U	--	< 10 U	-235.9	0.17	11.84	2.123	22.8	1.6
	114-MW76D-108.75-20240812	8/12/2024	108.75	N	JD93902	BEDROCK	--	< 10 U	--	< 10 U	-254.9	0.09	11.78	2.111	24.3	3.32
	114-MW76D-113.75-20240813	8/13/2024	113.75	N	JD93987	BEDROCK	--	< 10 U	--	< 10 U	-254.9	0.09	11.78	2.111	24.3	3.32
	114-MW76D-113.75-20240813-X	8/13/2024	113.75	FD	JD93987	BEDROCK	--	< 10 U	--	< 10 U	--	--	--	--	--	--
	114-MW76D-118.75-20240813	8/13/2024	118.75	N	JD93987	BEDROCK	--	< 10 U	--	< 10 U	-187	0.1	12.16	2.049	18.6	9.47
	114-MW76D-123.75-20240813	8/13/2024	123.75	N	JD93987	BEDROCK	--	< 10 U	--	< 10 U	-119	0.1	12.09	2.039	20.2	9.22
	114-MW76D-103.75-20240916	9/16/2024	103.75	N	JD96195	BEDROCK	--	< 10 U	--	< 10 U	-147.5	0.31	11.8	1.80	19.3	2.49
	114-MW76D-108.75-20240916	9/16/2024	108.75	N	JD96195	BEDROCK	--	< 10 U	--	< 10 U	-126	0.22	11.81	1.82	21	3.23
	114-MW76D-113.75-20240917	9/17/2024	113.75	N	JD96274	BEDROCK	--	< 10 U	--	< 10 U	-272.5	0.23	11.94	1.57	19.3	6.64
	114-MW76D-118.75-20240917	9/17/2024	118.75	N	JD96274	BEDROCK	--	< 10 U	--	< 10 U	-321.7	0.13	11.91	1.55	20	7.71
	114-MW76D-123.75-20240918	9/18/2024	123.75	N	JD96352	BEDROCK	--	3.4 J	--	< 10 U	-375.9	0.22	12.04	1.77	17.9	7.97
	114-MW76D-103.75-20241216	12/16/2024	103.75	N	JE2768	BEDROCK	--	< 10 U	--	< 10 U	-163.9	0.19	11.84	1.06	11	2.27
	114-MW76D-108.75-20241216	12/16/2024	108.75	N	JE2768	BEDROCK	--	< 10 U	--	< 10 U	-189.2	0.32	11.93	1.08	11.4	4.43
	114-MW76D-113.75-20241217	12/17/2024	113.75	N	JE2865	BEDROCK	--	< 10 U	--	< 10 U	-173.9	0.2	11.93	1.11	14	4.76
	114-MW76D-118.75-20241217	12/17/2024	118.75	N	JE2865	BEDROCK	--	< 10 U	--	< 10 U	-187.5	0.2	1.85	1.12	15.2	1.95
	114-MW76D-123.75-20241218	12/18/2024	123.75	N	JE2940	BEDROCK	--	< 10 U	--	< 10 U	-182.8	0.38	11.74	1.20	14.8	8.03
	114-MW76D-123.75-20241218-X	12/18/2024	123.75	FD	JE2940	BEDROCK	--	< 10 U	--	< 10 U	--	--	--	--	--	--

Table 4-1
Groundwater Analytical Results for Bedrock Monitoring Wells
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Garfield Avenue Group Sites
PPG, Jersey City, New Jersey

AECOM

							Lab Geochemistry													
						Analyte	TOTAL ORGANIC CARBON	SULFATE	METHANE	IRON	IRON (FERRIC)	IRON (FERROUS)	MANGANESE	Oxidation-Reduction Potential (ORP)		pH		Temperature	
						CAS-RN	TOC	14808-79-8	74-82-8	7439-89-6	20074-52-6	15438-31-0	7439-96-5	REDOX	REDOX	pH	pH	TEMP	TEMP
						Fraction	T	T	T	D	D	D	D	D	T	D	T	D	T
						GWQS		250		300			50						
						Units	mg/L	mg/L	ug/L	ug/L	mg/L	mg/L	ug/L	mv	mv	su	su	deg C	deg C
Well ID	**Sample ID**	**Sample Date**	**Sample Depth Interval (ft bTOIC)**	**Sample Type**	**Lab SDG**	**Water Bearing Zone**													
114-MW72D-Port4	114-MW72D-123-126-20220421	4/21/2022	123-126	N	4602567051	BEDROCK	--	--	--	--	--	--	--	--	384 HF	--	9.1 HF	--	20.9 HF
	114-MW72D-123-126-20220603	6/3/2022	123-126	N	4602593611	BEDROCK	10.6	--	--	--	--	--	--	--	391 HF	--	6.7 HF	--	21.0 HF
	114-MW72D-123-126-20220705	7/5/2022	123-126	N	4602613181	BEDROCK	13.1	--	--	--	--	--	--	--	380 HF	--	6.1 HF	--	20.8 HF
	114-MW72D-123-126-20230627	6/27/2023	123-126	N	4602831931	BEDROCK	--	--	--	--	--	--	--	--	-56 HF	--	12.5 HF	--	23.3 HF
	114-MW72D-123-126-20230627	6/27/2023	123-126	N	4602831932	BEDROCK	31.7	2.68	--	< 120 U	< 0.10 U	< 0.10 UHF	--	--	--	--	--	--	--
	114-MW72D-123-126-20230726	7/26/2023	123-126	N	4602849651	BEDROCK	14.6 J-	2.88	--	< 120 U	< 0.10 UJ	< 0.10 UJ	--	--	-15 HF	--	12.5 HF	--	23.4 HF
	114-MW72D-123.0-126.0-20230927	9/27/2023	123-126	N	4602890621	BEDROCK	50.8	2.05 J	--	< 120 U	< 0.10 UJ	< 0.10 UJ	--	-48 HF	-100 HF	12.5 HF	12.6 HF	21.6 HF	22.1 HF
	114-MW72D-123-126-20231220	12/20/2023	123-126	N	JD79285	BEDROCK	37.1	< 2.5 UB	--	< 250 U	--	< 0.20 UJ	< 10 U	-26.1	-26.2	12.48	12.48	--	--
	114-MW72D-123-126-20240319	3/19/2024	123-126	N	JD84758	BEDROCK	57.1	2.3	--	--	--	< 0.20 UJ	--	--	30.7	--	12.38	--	--
	114-MW72D-123-126-20240621	6/21/2024	123-126	N	JD90886	BEDROCK	24.3	6.8	--	--	--	< 0.20 UJ	--	85.1	75.5	12.34	12.35	--	--
	114-MW72D-123-126-20240813	8/13/2024	123-126	N	JD93987	BEDROCK	29.7	3.1	--	--	--	< 0.20 UJ	--	--	121	--	12.54	--	--
	114-MW72D-123-126-20240919	9/19/2024	123-126	N	JD96459	BEDROCK	11.8 J+	3.6	--	--	--	< 0.20 UJ	--	--	42.0	--	12.45	--	--
	114-MW72D-123-126-20241217	12/17/2024	123-126	N	JE2865	BEDROCK	27.1	5.5	--	--	--	< 0.20 U	--	--	46.1	--	12.44	--	--
114-MW75WR	114-MW75WR-118.5-20240116	1/16/2024	118.5	N	JD80633	WEATHERED BEDROCK	5.9	60.5	--	--	--	< 0.20 U	--	319	365	7.97	7.87	--	--
	114-MW75WR-118.5-20240321	3/21/2024	118.5	N	JD84943	WEATHERED BEDROCK	3.2	117	--	--	--	< 0.20 UJ	--	--	263	--	7.32	--	--
	114-MW75WR-118.0-20240530	5/30/2024	118	N	JD89452	WEATHERED BEDROCK	0.76 J	127	17.4	< 250 U	--	< 0.20 UJ	**157**	307	295	7.52	7.92	--	--
	114-MW75WR-118.0-20240807	8/7/2024	118	N	JD93595	WEATHERED BEDROCK	30.6	105	--	--	--	--	--	212	69.2	7.20	7.06	--	--
	114-MW75WR-118.0-20240906	9/6/2024	118	N	JD95614	WEATHERED BEDROCK	< 1.0 U	126	--	--	--	--	--	259	275	7.88	7.85	--	--
	114-MW75WR-118.0-20241001	10/1/2024	118	N	JD97187	WEATHERED BEDROCK	1.1	131	--	--	--	--	--	214	229	7.75	7.68	--	--
	114-MW75WR-118.0-20241105	11/5/2024	118	N	JD99684	WEATHERED BEDROCK	< 1.0 U	130	--	--	--	--	--	296	293	7.35	7.33	--	--
	114-MW75WR-118.0-20241204	12/4/2024	118	N	JE1940	WEATHERED BEDROCK	1.7	< 2.0 U	--	--	--	< 0.20 U	--	172	175	7.77	7.27	--	--
114-MW76D	114-MW76D-103.75-20240705	7/5/2024	103.75	N	JD91702	BEDROCK	4.4	--	--	--	--	--	--	--	124	--	12.03	--	--
	114-MW76D-108.75-20240709	7/9/2024	108.75	N	JD91859	BEDROCK	4.4	--	--	--	--	--	--	--	115	--	11.96	--	--
	114-MW76D-108.75-20240709-X	7/9/2024	108.75	FD	JD91859	BEDROCK	4.4	--	--	--	--	--	--	--	135	--	11.97	--	--
	114-MW76D-113.75-20240709	7/9/2024	113.75	N	JD91859	BEDROCK	4.2	--	--	--	--	--	--	--	141	--	11.97	--	--
	114-MW76D-118.75-20240709	7/9/2024	118.75	N	JD91859	BEDROCK	4.4	--	--	--	--	--	--	--	141	--	11.97	--	--
	114-MW76D-123.75-20240710	7/10/2024	123.75	N	JD91932	BEDROCK	4.8	--	--	--	--	--	--	--	143	--	11.93	--	--
	114-MW76D-103.75-20240812	8/12/2024	103.75	N	JD93902	BEDROCK	4.4	53.6	--	--	--	< 0.20 UJ	--	--	174	--	11.76	--	--
	114-MW76D-108.75-20240812	8/12/2024	108.75	N	JD93902	BEDROCK	4.3	51.1	--	--	--	< 0.20 UJ	--	--	148	--	11.86	--	--
	114-MW76D-113.75-20240813	8/13/2024	113.75	N	JD93987	BEDROCK	3.8	57.8	--	--	--	< 0.20 UJ	--	--	235	--	11.86	--	--
	114-MW76D-113.75-20240813-X	8/13/2024	113.75	FD	JD93987	BEDROCK	4.3	56.8	--	--	--	< 0.20 UJ	--	--	229	--	11.90	--	--
	114-MW76D-118.75-20240813	8/13/2024	118.75	N	JD93987	BEDROCK	4.1	56.8	--	--	--	< 0.20 UJ	--	--	215	--	11.91	--	--
	114-MW76D-123.75-20240813	8/13/2024	123.75	N	JD93987	BEDROCK	3.8	56.4	--	--	--	< 0.20 UJ	--	--	216	--	11.92	--	--
	114-MW76D-103.75-20240916	9/16/2024	103.75	N	JD96195	BEDROCK	1.7	62.6 J	--	--	--	< 0.20 UJ	--	--	116	--	11.71	--	--
	114-MW76D-108.75-20240916	9/16/2024	108.75	N	JD96195	BEDROCK	2.8	63.3 J	--	--	--	< 0.20 UJ	--	--	122	--	11.72	--	--
	114-MW76D-113.75-20240917	9/17/2024	113.75	N	JD96274	BEDROCK	< 2.0 U	65.5	--	--	--	< 0.20 UJ	--	--	105	--	11.70	--	--
	114-MW76D-118.75-20240917	9/17/2024	118.75	N	JD96274	BEDROCK	4.5 J+	65.5	--	--	--	< 0.20 UJ	--	--	99.5	--	11.74	--	--
	114-MW76D-123.75-20240918	9/18/2024	123.75	N	JD96352	BEDROCK	< 1.0 U	63.1	--	--	--	< 0.20 UJ	--	--	106	--	11.68	--	--
	114-MW76D-103.75-20241216	12/16/2024	103.75	N	JE2768	BEDROCK	3.0 JB	69.7	--	--	--	< 0.20 UJ	--	--	129	--	11.53	--	--
	114-MW76D-108.75-20241216	12/16/2024	108.75	N	JE2768	BEDROCK	3.2 JB	68.7	--	--	--	< 0.20 UJ	--	--	122	--	11.56	--	--
	114-MW76D-113.75-20241217	12/17/2024	113.75	N	JE2865	BEDROCK	3.2 J+	70.0	--	--	--	< 0.20 U	--	--	201	--	11.47	--	--
	114-MW76D-118.75-20241217	12/17/2024	118.75	N	JE2865	BEDROCK	2.8 J+	70.4	--	--	--	< 0.20 U	--	--	165	--	11.49	--	--
	114-MW76D-123.75-20241218	12/18/2024	123.75	N	JE2940	BEDROCK	2.9	71.7	--	--	--	< 0.20 U	--	--	164	--	11.47	--	--
	114-MW76D-123.75-20241218-X	12/18/2024	123.75	FD	JE2940	BEDROCK	3.0	71.7	--	--	--	< 0.20 U	--	--	163	--	11.51	--	--

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							Chromium				Field Geochemistry					
						Analyte	CHROMIUM		CHROMIUM (HEXAVALENT)		Oxidation-Reduction Potential (ORP)	Oxygen, Dissolved	pH	Specific Conductivity (Field)	Temperature (Field)	Turbidity
						CAS-RN	7440-47-3	7440-47-3	18540-29-9	18540-29-9	REDOX	DO	pH	SC-F	TEMP-F	TURB
						Fraction	D	T	D	T	T	T	T	T	T	T
						GWQS	70	70								
						Units	ug/L	ug/L	ug/L	ug/L	mv	mg/L	su	mS/cm	deg C	NTU
Well ID	Sample ID	Sample Date	Sample Depth Interval (ft bTOIC)	Sample Type	Lab SDG	Water Bearing Zone										
114-MW76WR	114-MW76WR-60.0-20240521	5/21/2024	60	N	JD88878	WEATHERED BEDROCK	--	**87800**	--	83400	-80.4	2.99	11.77	5.09	21.7	3.66
	114-MW76WR-57.5-20240528	5/28/2024	57.5	N	JD89297	WEATHERED BEDROCK	**74500**	**76500**	78000	85700	-68.4	0.44	12.01	4.106	18.5	1.52
	114-MW76WR-62.5-20240528	5/28/2024	62.5	N	JD89297	WEATHERED BEDROCK	**76200**	**71100**	67700	74200	-80.5	0.4	12.07	4.083	18.9	1.33
	114-MW76WR-57.0-20240805	8/5/2024	57	N	JD93435	WEATHERED BEDROCK	**50200**	**49500**	62300	64700	-228.6	0.16	11.98	4.44	20.3	0.98
	114-MW76WR-62.0-20240806	8/6/2024	62	N	JD93519	WEATHERED BEDROCK	**45700**	**47400**	64400	66000	-253.8	0.36	12.05	4.58	19.9	3.83
	114-MW76WR-57.0-20240904	9/4/2024	57	N	JD95426	WEATHERED BEDROCK	**53900**	**50800**	54600	57200	32.4	0.89	12.55	4671	19.9	1.75
	114-MW76WR-57.0-20241016	10/16/2024	57	N	JD98353	WEATHERED BEDROCK	**51300**	**54400**	55600	56500	84.9	0.34	11.99	4.19	16.6	2.02
	114-MW76WR-57.0-20241104	11/4/2024	57	N	JD99628	WEATHERED BEDROCK	**51200**	**49900**	51500	52300	-376.2	0.45	12.17	4.50	16.3	0.62
	114-MW76WR-57.0-20241205	12/5/2024	57	N	JE2028	WEATHERED BEDROCK	**35800**	**34000**	43800	45800	-145.1	0.13	12.05	3.64	12.3	3.33
114-MW77WR	114-MW77WR-60.0-20240521	5/21/2024	60	N	JD88878	WEATHERED BEDROCK	--	**27300**	--	30300	-182.2	0.75	11.65	2.08	17.5	8.56
	114-MW77WR-57.0-20240528	5/28/2024	57	N	JD89297	WEATHERED BEDROCK	**20600**	**18700**	21800	22200	-138.5	0.32	12.16	2.236	19	3.16
	114-MW77WR-62.0-20240528	5/28/2024	62	N	JD89297	WEATHERED BEDROCK	**19300**	**18400**	20600	21400	-142.6	0.26	12.2	2.358	18.8	2.38
	114-MW77WR-57.0-20240805	8/5/2024	57	N	JD93435	WEATHERED BEDROCK	**11100**	**11100**	17300	15900	-216.4	0.08	11.88	2.66	20.5	0.8
	114-MW77WR-62.0-20240805	8/5/2024	62	N	JD93435	WEATHERED BEDROCK	**9430**	**10000**	11500	11600	-208.1	0.11	11.94	2.78	19.3	0.58
	114-MW77WR-57.0-20240903	9/3/2024	57	N	JD95322	WEATHERED BEDROCK	**16500**	**17900**	19000	19300	-146.7	0.19	11.78	2.00	22.6	0.63
114-MW78WR	114-MW78WR-79.0-20240522	5/22/2024	79	N	JD88951	WEATHERED BEDROCK	--	4.9 J	< 10 U	< 10 U	-124.1	0.69	10.28	1.483	19.9	13.9
	114-MW78WR-76.5-20240529	5/29/2024	76.5	N	JD89361	WEATHERED BEDROCK	5.7 J	5.6 J	< 10 U	< 10 U	-63.6	0.83	9.51	1.146	17.2	6.15
	114-MW78WR-81.5-20240529	5/29/2024	81.5	N	JD89361	WEATHERED BEDROCK	5.9 J	4.8 J	< 10 U	< 10 U	-102	0.61	10.09	1.162	17.2	3.35
	114-MW78WR-76.0-20240806	8/6/2024	76	N	JD93519	WEATHERED BEDROCK	3.7 B	5.2 B	< 10 U	< 10 U	-19.1	0.9	10.19	1.37	23.4	1.14
	114-MW78WR-81.0-20240806	8/6/2024	81	N	JD93519	WEATHERED BEDROCK	4.8 B	5.5 B	< 10 U	< 10 U	-57.9	5.78	10.34	1.38	20.6	1.19
	114-MW78WR-81.0-20240905	9/5/2024	81	N	JD95510	WEATHERED BEDROCK	6.5 B	5.7 B	< 10 U	< 10 U	-238.1	0.32	11.75	1.89	21.5	3.93
	114-MW78WR-81.0-20240930	9/30/2024	81	N	JD97124	WEATHERED BEDROCK	3.1 B	4.5 B	< 10 U	< 10 U	-92.2	0.13	10.74	1.39	19.9	1.96
	114-MW78WR-81.0-20241104	11/4/2024	81	N	JD99628	WEATHERED BEDROCK	< 10 U	< 10 U	< 10 U	< 10 U	-2.3	0.63	11.51	1.69	17.7	2.5
	114-MW78WR-81.0-20241205	12/5/2024	81	N	JE2028	WEATHERED BEDROCK	3.1 B	4.0 B	< 10 U	< 10 U	-177.3	0.22	11.5	1.74	14	3.84
114-MW79WR	114-MW79WR-73.0-20240619	6/19/2024	73	N	JD90731	WEATHERED BEDROCK	**2210**	**2120**	2200	2200	-201.9	0.72	11.47	1053	18.3	5.05
	114-MW79WR-78.5-20240619	6/19/2024	78.5	N	JD90731	WEATHERED BEDROCK	**5120**	**4810**	5500	5600	-163.2	0.73	11.36	1126	17.4	19.4
	114-MW79WR-73.0-20240807	8/7/2024	73	N	JD93595	WEATHERED BEDROCK	**825**	**929**	51	35	-154.8	0.28	5.58	4.80	18.4	45.6
	114-MW79WR-78.0-20240807	8/7/2024	78	N	JD93595	WEATHERED BEDROCK	**921**	**991**	48	51	-141.4	0.2	5.62	5	17.8	58.4
	114-MW79WR-78.0-20240807-X	8/7/2024	78	FD	JD93595	WEATHERED BEDROCK	**967**	**982**	45	53	--	--	--	--	--	--
	114-MW79WR-78.0-20240903	9/3/2024	78	N	JD95322	WEATHERED BEDROCK	**592**	**612**	< 10 U	< 10 U	-119.9	0.07	5.52	4450	24.7	43.6
	114-MW79WR-78.0-20240903-X	9/3/2024	78	FD	JD95322	WEATHERED BEDROCK	**593**	**625**	< 10 U	< 10 U	--	--	--	--	--	--
	114-MW79WR-78.0-20240930	9/30/2024	78	N	JD97124	WEATHERED BEDROCK	**691**	**692**	14	14	-158.9	0.1	5.42	4.68	22.2	51
	114-MW79WR-78.0-20240930-X	9/30/2024	78	FD	JD97124	WEATHERED BEDROCK	**722**	**691**	7.2 B	4.9 B	--	--	--	--	--	--
	114-MW79WR-78.0-20241104	11/4/2024	78	N	JD99628	WEATHERED BEDROCK	**1090**	**997**	110	110	-330.4	0.14	5.66	6.72	18.7	28.5
	114-MW79WR-78.0-20241104-X	11/4/2024	78	FD	JD99628	WEATHERED BEDROCK	**1030**	**994**	26	26	--	--	--	--	--	--
	114-MW79WR-78.0-20241204	12/4/2024	78	N	JE1940	WEATHERED BEDROCK	**679**	**698**	7.8 B	4.3 B	-237.7	0.05	5.66	4.16	12	38.7
114-MW80WR	114-MW80WR-86.5-20240627	6/27/2024	86.5	N	JD91283	WEATHERED BEDROCK	4.2	6.3 J	< 10 U	< 10 U	-469.3	0.33	8.91	0.808	20.9	9.6
	114-MW80WR-91.5-20240627	6/27/2024	91.5	N	JD91283	WEATHERED BEDROCK	< 10 U	5.1 J	< 10 U	< 10 U	-441.1	0.11	8.65	0.812	19.1	9.47
	114-MW80WR-86.5-20240807	8/7/2024	86.5	N	JD93595	WEATHERED BEDROCK	< 10 U	< 10 U	< 10 U	< 10 U	-180.5	0.32	8.92	0.89	20.1	0.94
	114-MW80WR-91.5-20240807	8/7/2024	91.5	N	JD93595	WEATHERED BEDROCK	< 10 U	4.5 B	< 10 U	< 10 U	-172.7	0.18	9.08	0.88	20.4	1.99
	114-MW80WR-91.5-20240905	9/5/2024	91.5	N	JD95510	WEATHERED BEDROCK	6.0 B	5.5 B	< 10 U	< 10 U	-147.9	0.35	9.32	0.79	22.5	4.72
	114-MW80WR-91.5-20240930	9/30/2024	91.5	N	JD97124	WEATHERED BEDROCK	< 10 U	3.5 B	< 10 U	< 10 U	-122.2	0.15	9.15	0.85	18.5	1.46
	114-MW80WR-91.5-20241105	11/5/2024	91.5	N	JD99684	WEATHERED BEDROCK	< 10 U	4.2 B	< 10 U	< 10 U	19.9	0.25	9.01	0.82	17.9	2.09
	114-MW80WR-91.5-20241205	12/5/2024	91.5	N	JE2028	WEATHERED BEDROCK	< 10 U	6.1 B	< 10 U	< 10 U	-167.9	0.14	9.09	0.95	13.3	3.12

Table 4-1
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PPG, Jersey City, New Jersey

AECOM

							Lab Geochemistry													
						Analyte	TOTAL ORGANIC CARBON	SULFATE	METHANE	IRON	IRON (FERRIC)	IRON (FERROUS)	MANGANESE	Oxidation-Reduction Potential (ORP)		pH		Temperature	
						CAS-RN	TOC	14808-79-8	74-82-8	7439-89-6	20074-52-6	15438-31-0	7439-96-5	REDOX	REDOX	pH	pH	TEMP	TEMP
						Fraction	T	T	T	D	D	D	D	D	T	D	T	D	T
						GWQS		250		300			50						
						Units	mg/L	mg/L	ug/L	ug/L	mg/L	mg/L	ug/L	mv	mv	su	su	deg C	deg C
Well ID	**Sample ID**	**Sample Date**	**Sample Depth Interval (ft bTOIC)**	**Sample Type**	**Lab SDG**	**Water Bearing Zone**													
114-MW76WR	114-MW76WR-60.0-20240521	5/21/2024	60	N	JD88878	WEATHERED BEDROCK	--	--	--	--	--	--	--	--	98.4	--	11.88	--	--
	114-MW76WR-57.5-20240528	5/28/2024	57.5	N	JD89297	WEATHERED BEDROCK	9.0	**405**	466	< 250 U	--	--	< 10 U	139	133	11.92	11.92	--	--
	114-MW76WR-62.5-20240528	5/28/2024	62.5	N	JD89297	WEATHERED BEDROCK	9.0	**334**	614	< 250 U	--	--	< 10 U	134	134	11.99	11.93	--	--
	114-MW76WR-57.0-20240805	8/5/2024	57	N	JD93435	WEATHERED BEDROCK	6.9	**329**	--	--	--	--	--	151	154	11.93	11.89	--	--
	114-MW76WR-62.0-20240806	8/6/2024	62	N	JD93519	WEATHERED BEDROCK	7.4	**320**	--	--	--	--	--	138	145	11.92	12.00	--	--
	114-MW76WR-57.0-20240904	9/4/2024	57	N	JD95426	WEATHERED BEDROCK	7.6	**282**	--	--	--	--	--	115	118	11.77	11.77	--	--
	114-MW76WR-57.0-20241016	10/16/2024	57	N	JD98353	WEATHERED BEDROCK	16.8	**268**	--	--	--	--	--	114	126	11.81	11.80	--	--
	114-MW76WR-57.0-20241104	11/4/2024	57	N	JD99628	WEATHERED BEDROCK	19.0	**259**	--	--	--	--	--	108	107	11.68	11.60	--	--
	114-MW76WR-57.0-20241205	12/5/2024	57	N	JE2028	WEATHERED BEDROCK	47.0	233	--	--	--	--	--	88.7	86.1	11.74	11.78	--	--
114-MW77WR	114-MW77WR-60.0-20240521	5/21/2024	60	N	JD88878	WEATHERED BEDROCK	--	--	--	--	--	--	--	--	109	--	11.60	--	--
	114-MW77WR-57.0-20240528	5/28/2024	57	N	JD89297	WEATHERED BEDROCK	4.4 J	141	142	< 250 U	--	--	< 10 U	139	131	11.81	11.80	--	--
	114-MW77WR-62.0-20240528	5/28/2024	62	N	JD89297	WEATHERED BEDROCK	3.9 J	130	130	< 250 U	--	--	< 10 U	133	128	11.86	11.86	--	--
	114-MW77WR-57.0-20240805	8/5/2024	57	N	JD93435	WEATHERED BEDROCK	< 5.0 U	136	--	--	--	--	--	131	178	11.78	11.90	--	--
	114-MW77WR-62.0-20240805	8/5/2024	62	N	JD93435	WEATHERED BEDROCK	< 5.0 U	96.6	--	--	--	--	--	152	153	11.93	11.96	--	--
	114-MW77WR-57.0-20240903	9/3/2024	57	N	JD95322	WEATHERED BEDROCK	2.7	159	--	--	--	--	--	128	128	11.55	11.56	--	--
114-MW78WR	114-MW78WR-79.0-20240522	5/22/2024	79	N	JD88951	WEATHERED BEDROCK	--	--	--	--	--	--	--	218	134	10.12	10.40	--	--
	114-MW78WR-76.5-20240529	5/29/2024	76.5	N	JD89361	WEATHERED BEDROCK	4.3	**448**	131	< 250 U	--	--	< 10 U	301	357	9.32	9.36	--	--
	114-MW78WR-81.5-20240529	5/29/2024	81.5	N	JD89361	WEATHERED BEDROCK	3.6	**444**	144	< 250 U	--	--	< 10 U	113	330	10.63	9.96	--	--
	114-MW78WR-76.0-20240806	8/6/2024	76	N	JD93519	WEATHERED BEDROCK	3.8	**437**	--	--	--	--	--	152	171	10.03	10.25	--	--
	114-MW78WR-81.0-20240806	8/6/2024	81	N	JD93519	WEATHERED BEDROCK	3.9	**428**	--	--	--	--	--	139	178	10.03	10.27	--	--
	114-MW78WR-81.0-20240905	9/5/2024	81	N	JD95510	WEATHERED BEDROCK	4.3	**361**	--	--	--	--	--	16.9	9.2	11.04	11.44	--	--
	114-MW78WR-81.0-20240930	9/30/2024	81	N	JD97124	WEATHERED BEDROCK	4.0	**398**	--	--	--	--	--	62.7	70.2	10.47	10.59	--	--
	114-MW78WR-81.0-20241104	11/4/2024	81	N	JD99628	WEATHERED BEDROCK	3.8	**345**	--	--	--	--	--	-14.9	-21.4	11.14	11.17	--	--
	114-MW78WR-81.0-20241205	12/5/2024	81	N	JE2028	WEATHERED BEDROCK	5.0	**367**	--	--	--	--	--	65.6	52.6	10.85	11.08	--	--
114-MW79WR	114-MW79WR-73.0-20240619	6/19/2024	73	N	JD90731	WEATHERED BEDROCK	2.6	140	76.0	< 250 U	--	--	< 10 U	189	205	11.22	11.20	--	--
	114-MW79WR-78.5-20240619	6/19/2024	78.5	N	JD90731	WEATHERED BEDROCK	3.2	144	110	< 250 U	--	--	3.8 J	215	233	10.23	10.53	--	--
	114-MW79WR-73.0-20240807	8/7/2024	73	N	JD93595	WEATHERED BEDROCK	3200	207	--	--	--	--	--	250	207	5.73	5.63	--	--
	114-MW79WR-78.0-20240807	8/7/2024	78	N	JD93595	WEATHERED BEDROCK	943	206	--	--	--	--	--	169	151	5.73	5.67	--	--
	114-MW79WR-78.0-20240807-X	8/7/2024	78	FD	JD93595	WEATHERED BEDROCK	986	204	--	--	--	--	--	237	143	5.72	5.67	--	--
	114-MW79WR-78.0-20240903	9/3/2024	78	N	JD95322	WEATHERED BEDROCK	2470	84.0	--	--	--	--	--	212	76.6	5.92	5.87	--	--
	114-MW79WR-78.0-20240903-X	9/3/2024	78	FD	JD95322	WEATHERED BEDROCK	2260	86.3	--	--	--	--	--	247	137	5.92	5.88	--	--
	114-MW79WR-78.0-20240930	9/30/2024	78	N	JD97124	WEATHERED BEDROCK	2900	35.4 B	--	--	--	--	--	86.5	40.0	5.64	5.70	--	--
	114-MW79WR-78.0-20240930-X	9/30/2024	78	FD	JD97124	WEATHERED BEDROCK	2900	21.0 B	--	--	--	--	--	32.7	31.2	5.51	5.63	--	--
	114-MW79WR-78.0-20241104	11/4/2024	78	N	JD99628	WEATHERED BEDROCK	2950	29.5 B	--	--	--	--	--	191	203	5.53	5.52	--	--
	114-MW79WR-78.0-20241104-X	11/4/2024	78	FD	JD99628	WEATHERED BEDROCK	2950	25.1 B	--	--	--	--	--	192	178	5.56	5.53	--	--
	114-MW79WR-78.0-20241204	12/4/2024	78	N	JE1940	WEATHERED BEDROCK	2420	19.4 B	--	--	--	--	--	74.6	58.9	5.92	7.23	--	--
114-MW80WR	114-MW80WR-86.5-20240627	6/27/2024	86.5	N	JD91283	WEATHERED BEDROCK	9.8	70.4	11800	89.3 JB	--	--	26.3	327	329	8.68	8.77	--	--
	114-MW80WR-91.5-20240627	6/27/2024	91.5	N	JD91283	WEATHERED BEDROCK	9.9	74.7	8510	146 JB	--	--	46.4	328	313	8.30	8.49	--	--
	114-MW80WR-86.5-20240807	8/7/2024	86.5	N	JD93595	WEATHERED BEDROCK	9.5	78.6	--	--	--	--	--	313	310	8.81	8.88	--	--
	114-MW80WR-91.5-20240807	8/7/2024	91.5	N	JD93595	WEATHERED BEDROCK	9.5	80.1	--	--	--	--	--	309	355	9.02	9.02	--	--
	114-MW80WR-91.5-20240905	9/5/2024	91.5	N	JD95510	WEATHERED BEDROCK	9.8	80.4	--	--	--	--	--	226	233	9.17	9.21	--	--
	114-MW80WR-91.5-20240930	9/30/2024	91.5	N	JD97124	WEATHERED BEDROCK	9.3	75.0	--	--	--	--	--	237	259	9.01	9.07	--	--
	114-MW80WR-91.5-20241105	11/5/2024	91.5	N	JD99684	WEATHERED BEDROCK	8.3	68.0	--	--	--	--	--	289	288	8.79	8.78	--	--
	114-MW80WR-91.5-20241205	12/5/2024	91.5	N	JE2028	WEATHERED BEDROCK	11.8	53.6	--	--	--	--	--	183	182	8.86	8.92	--	--

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PPG, Jersey City, New Jersey

							Chromium				Field Geochemistry					
						Analyte	CHROMIUM		CHROMIUM (HEXAVALENT)		Oxidation-Reduction Potential (ORP)	Oxygen, Dissolved	pH	Specific Conductivity (Field)	Temperature (Field)	Turbidity
						CAS-RN	7440-47-3	7440-47-3	18540-29-9	18540-29-9	REDOX	DO	pH	SC-F	TEMP-F	TURB
						Fraction	D	T	D	T	T	T	T	T	T	T
						GWQS	70	70								
						Units	ug/L	ug/L	ug/L	ug/L	mv	mg/L	su	mS/cm	deg C	NTU
Well ID	**Sample ID**	**Sample Date**	**Sample Depth Interval (ft bTOIC)**	**Sample Type**	**Lab SDG**	**Water Bearing Zone**										
114-MW81D	114-MW81D-103.5-20250115	1/15/2025	103.5	N	JE4228	BEDROCK	--	10.0	--	7.4 J	-126.4	0.28	12.89	6.33	7.2	0.95
	114-MW81D-107.5-20250115	1/15/2025	107.5	N	JE4228	BEDROCK	--	10.6	--	11	-123.4	0.2	12.95	6.33	7.7	0.81
	114-MW81D-115.0-20250116	1/16/2025	115	N	JE4326	BEDROCK	--	9.7 J	--	3.0 J	-263	3.56	12.95	6.31	8.1	0.59
	114-MW81D-115.0-20250116-X	1/16/2025	115	FD	JE4326	BEDROCK	--	10.3	--	< 10 U	--	--	--	--	--	--
	114-MW81D-123.0-20250116	1/16/2025	123	N	JE4326	BEDROCK	--	10.2	--	< 10 U	-271.3	3.28	12.9	6.23	10	0.79
	114-MW81D-127.0-20250117	1/17/2025	127	N	JE4369	BEDROCK	--	10.1	--	14	-187.4	2.31	12.83	6.07	13	0.48
	114-MW81D-103.5-20250214	2/14/2025	103.5	N	JE5758	BEDROCK	--	< 10.0 U	--	< 10 U	-190.6	0.21	12.84	6.11	10.9	0.77
	114-MW81D-107.5-20250217	2/17/2025	107.5	N	JE5836	BEDROCK	--	3.1	--	12 J-	-227.9	0.26	12.83	7.13	10.6	1.29
	114-MW81D-115.0-20250218	2/18/2025	115	N	JE5874	BEDROCK	--	< 10 U	--	3.6 J	-105.8	0.22	12.88	5.05	10.2	0.93
	114-MW81D-115.0-20250218-X	2/18/2025	115	FD	JE5874	BEDROCK	--	< 10 U	--	7.2 J	--	--	--	--	--	--
	114-MW81D-123.0-20250219	2/19/2025	123	N	JE5940	BEDROCK	--	< 10 UB	--	< 10 U	-98.9	0.35	12.77	7.19	11.1	0.89
	114-MW81D-127.0-20250219	2/19/2025	127	N	JE5940	BEDROCK	--	< 10 U	--	< 10 U	-96.6	0.21	12.78	7.1	12.5	0.68
114-PZ-52WR	114-PZ-52WR-74.0-20211217	12/17/2021	74	N	4602493661	WEATHERED BEDROCK	--	**30400**	--	27100	--	--	--	--	--	--
	114-PZ-52WR-74-20230630	6/30/2023	74	N	4602833941	WEATHERED BEDROCK	**294**	**5340**	< 1000 U	< 2000 U	41.3	8.42	5.13	0.813	18.63	-- OR
	114-PZ-52WR-74-20230630	6/30/2023	74	N	4602833942	WEATHERED BEDROCK	--	--	--	--	--	--	--	--	--	--
	114-PZ-52WR-74.0-20230922	9/22/2023	74	N	4602888091	WEATHERED BEDROCK	**1260**	**3170**	< 200 U	< 500 U	90.1	0.36	4.91	1.518	20.5	-- OR
	114-PZ-52WR-74.0-20231219	12/19/2023	74	N	JD79185	WEATHERED BEDROCK	**734**	**862**	47	48	-200.1	0.1	4.8	1.229	13.6	945
	114-PZ-52WR-74.0-20240320	3/20/2024	74	N	JD84853	WEATHERED BEDROCK	**466**	**474**	< 10 U	< 10 U	66.2	0.04	4.37	1.563	13.9	47.7
	114-PZ-52WR-74.0-20240531	5/31/2024	74	N	JD89525	WEATHERED BEDROCK	**547**	**640**	< 20 U	< 20 U	-54.3	0.05	4.59	1.404	17.8	1000
	114-PZ-52WR-74.0-20240806	8/6/2024	74	N	JD93519	WEATHERED BEDROCK	**619**	**743**	< 10 U	< 10 U	-207.1	0.63	5.16	1.80	24.4	881
	114-PZ-52WR-74.0-20240905	9/5/2024	74	N	JD95510	WEATHERED BEDROCK	**521**	**507**	81	85	10.8	0.12	4.84	2732	22.6	132
	114-PZ-52WR-74.0-20241001	10/1/2024	74	N	JD97187	WEATHERED BEDROCK	**873**	**863**	31	27	-77.9	0.1	4.6	2.52	18.3	328
	114-PZ-52WR-74.0-20241104	11/4/2024	74	N	JD99628	WEATHERED BEDROCK	**762**	**967**	53	61	-55.8	0.1	4.21	2.78	16.8	173
	114-PZ-52WR-74.0-20241204	12/4/2024	74	N	JE1940	WEATHERED BEDROCK	**1850**	**1040**	< 10 U	< 10 U	-64.3	0.19	4.19	3.63	12.1	111
114-PZ-66WR	114-PZ-66WR-82.2-20211216	12/16/2021	82.2	N	4602492741	WEATHERED BEDROCK	--	**195000**	--	198000 J+	--	--	--	--	--	--
	114-PZ-66WR-83-20230629	6/29/2023	83	N	4602833321	WEATHERED BEDROCK	--	**111000**	--	124000 J	67.9	4.79	7.36	2.06	20.38	4.13
	114-PZ-66WR-83-20230629	6/29/2023	83	N	4602833322	WEATHERED BEDROCK	--	--	--	--	--	--	--	--	--	--
	114-PZ-66WR-83-20230629-X	6/29/2023	83	FD	4602833321	WEATHERED BEDROCK	--	**109000 J**	--	233000 J	--	--	--	--	--	--
	114-PZ-66WR-83-20230629-X	6/29/2023	83	FD	4602833322	WEATHERED BEDROCK	--	--	--	--	--	--	--	--	--	--
	114-PZ-66WR-83.0-20230922	9/22/2023	83	N	4602888091	WEATHERED BEDROCK	--	**120000**	--	112000	77	0.51	7.83	1.714	19.17	6.55
	114-PZ-66WR-83.0-20230922-X	9/22/2023	83	FD	4602888091	WEATHERED BEDROCK	--	**119000**	--	111000	--	--	--	--	--	--
	114-PZ-66WR-83.0-20231220	12/20/2023	83	N	JD79285	WEATHERED BEDROCK	--	**159000**	--	157000	-147.8	0.33	7.31	2.465	13.7	1.13
	114-PZ-66WR-83.0-20231220-X	12/20/2023	83	FD	JD79285	WEATHERED BEDROCK	--	**155000**	--	164000	--	--	--	--	--	--
	114-PZ-66WR-83.0-20240320	3/20/2024	83	N	JD84853	WEATHERED BEDROCK	--	**195000**	--	167000	2.6	0.22	7.26	2.282	12.1	9.89
	114-PZ-66WR-83.0-20240320-X	3/20/2024	83	FD	JD84853	WEATHERED BEDROCK	--	**206000**	--	182000	--	--	--	--	--	--
	114-PZ-66WR-84.0-20240531	5/31/2024	84	N	JD89525	WEATHERED BEDROCK	**141000**	**149000 J**	183000	209000 J	81	0.33	7.23	2.66	19.3	5.87
	114-PZ-66WR-84.0-20240807	8/7/2024	84	N	JD93595	WEATHERED BEDROCK	**21000**	**25100**	20400	22300	-328.6	0.09	6.97	2.79	17	5.62
	114-PZ-66WR-84.0-20240903	9/3/2024	84	N	JD95322	WEATHERED BEDROCK	**5720**	**5690**	150	150	122.1	0.41	5.92	3826	20	2.92
	114-PZ-66WR-84.0-20240930	9/30/2024	84	N	JD97124	WEATHERED BEDROCK	**3530**	**4220**	9.5 B	8.4 B	27.9	0.22	5.86	4.93	20.7	2.93
	114-PZ-66WR-84.0-20241106	11/6/2024	84	N	JD99782	WEATHERED BEDROCK	**6100**	**5800**	51	63	-224	0.17	6.01	4.95	20.7	3.98
	114-PZ-66WR-84.0-20241206	12/6/2024	84	N	JE2113	WEATHERED BEDROCK	**6950**	**6690**	4.4 B	< 10 U	-130	0.28	5.82	4.63	13	6.26

Table 4-1
Groundwater Analytical Results for Bedrock Monitoring Wells
Addendum to Groundwater Remedial Investigation Report
Garfield Avenue Group Sites
PPG, Jersey City, New Jersey

AECOM

							Lab Geochemistry												
						Analyte	TOTAL ORGANIC CARBON	SULFATE	METHANE	IRON	IRON (FERRIC)	IRON (FERROUS)	MANGANESE	Oxidation-Reduction Potential (ORP)		pH		Temperature	
						CAS-RN	TOC	14808-79-8	74-82-8	7439-89-6	20074-52-6	15438-31-0	7439-96-5	REDOX	REDOX	pH	pH	TEMP	TEMP
						Fraction	T	T	T	D	D	D	D	D	T	D	T	D	T
						GWQS		250		300			50						
						Units	mg/L	mg/L	ug/L	ug/L	mg/L	mg/L	ug/L	mv	mv	su	su	deg C	deg C
Well ID	**Sample ID**	**Sample Date**	**Sample Depth Interval (ft bTOIC)**	**Sample Type**	**Lab SDG**	**Water Bearing Zone**													
114-MW81D	114-MW81D-103.5-20250115	1/15/2025	103.5	N	JE4228	BEDROCK	2.0	33.3	--	--	--	< 0.20 U	--	--	89.3	--	12.40	--	--
	114-MW81D-107.5-20250115	1/15/2025	107.5	N	JE4228	BEDROCK	2.0	33.5	--	--	--	< 0.20 U	--	--	88.6	--	12.40	--	--
	114-MW81D-115.0-20250116	1/16/2025	115	N	JE4326	BEDROCK	2.4	33.5	--	--	--	< 0.20 U	--	--	94.6	--	12.37	--	--
	114-MW81D-115.0-20250116-X	1/16/2025	115	FD	JE4326	BEDROCK	2.4	33.2	--	--	--	< 0.20 U	--	--	96.9	--	12.43	--	--
	114-MW81D-123.0-20250116	1/16/2025	123	N	JE4326	BEDROCK	2.4	32.7	--	--	--	< 0.20 U	--	--	99.4	--	12.44	--	--
	114-MW81D-127.0-20250117	1/17/2025	127	N	JE4369	BEDROCK	2.2	30.4	--	--	--	< 0.20 U	--	--	114	--	12.26	--	--
	114-MW81D-103.5-20250214	2/14/2025	103.5	N	JE5758	BEDROCK	1.8	26.0	--	--	--	< 0.20 UJ	--	--	68.1	--	11.60	--	--
	114-MW81D-107.5-20250217	2/17/2025	107.5	N	JE5836	BEDROCK	2.0 J-	24.0	--	--	--	< 0.20 UJ	--	--	93.3	--	11.76	--	--
	114-MW81D-115.0-20250218	2/18/2025	115	N	JE5874	BEDROCK	2.0	22.4	--	--	--	< 0.20 UJ	--	--	57.1	--	12.31	--	--
	114-MW81D-115.0-20250218-X	2/18/2025	115	FD	JE5874	BEDROCK	1.9	22.5	--	--	--	< 0.20 UJ	--	--	58.2	--	12.52	--	--
	114-MW81D-123.0-20250219	2/19/2025	123	N	JE5940	BEDROCK	2.3	22.6	--	--	--	< 0.20 U	--	--	62.3	--	12.63	--	--
	114-MW81D-127.0-20250219	2/19/2025	127	N	JE5940	BEDROCK	1.8	23.2	--	--	--	< 0.20 U	--	--	54.7	--	12.67	--	--
114-PZ-52WR	114-PZ-52WR-74.0-20211217	12/17/2021	74	N	4602493661	WEATHERED BEDROCK	--	--	--	--	--	--	--	--	418 HF	--	7.5 HF	--	21.7 HF
	114-PZ-52WR-74-20230630	6/30/2023	74	N	4602833941	WEATHERED BEDROCK	--	--	--	--	--	--	--	578 HF	523 HF	4.8 HF	4.8 HF	22.0 HF	22.5 HF
	114-PZ-52WR-74-20230630	6/30/2023	74	N	4602833942	WEATHERED BEDROCK	6550	2.53 J	--	**35800**	35.8	< 10.0 UHF	--	--	--	--	--	--	--
	114-PZ-52WR-74.0-20230922	9/22/2023	74	N	4602888091	WEATHERED BEDROCK	3390	243	--	**55400**	< 0.10 UJ	57.4 J	--	348 HF	369 HF	4.7 HF	4.6 HF	20.6 HF	19.6 HF
	114-PZ-52WR-74.0-20231219	12/19/2023	74	N	JD79185	WEATHERED BEDROCK	1530	158	--	**68200**	--	--	**3330**	292	278	4.81	4.80	--	--
	114-PZ-52WR-74.0-20240320	3/20/2024	74	N	JD84853	WEATHERED BEDROCK	1190	**280**	--	--	--	21.7 J	--	372	374	4.57	4.60	--	--
	114-PZ-52WR-74.0-20240531	5/31/2024	74	N	JD89525	WEATHERED BEDROCK	1720	39.7	3330	**53300**	--	47.6 J	**2630**	328	317	4.66	4.70	--	--
	114-PZ-52WR-74.0-20240806	8/6/2024	74	N	JD93519	WEATHERED BEDROCK	1230	10	--	--	--	--	--	350	333	5.22	5.23	--	--
	114-PZ-52WR-74.0-20240905	9/5/2024	74	N	JD95510	WEATHERED BEDROCK	2080	< 40 U	--	--	--	--	--	334	326	5.03	5.07	--	--
	114-PZ-52WR-74.0-20241001	10/1/2024	74	N	JD97187	WEATHERED BEDROCK	2420	158	--	--	--	--	--	297	278	4.74	4.78	--	--
	114-PZ-52WR-74.0-20241104	11/4/2024	74	N	JD99628	WEATHERED BEDROCK	2610	211	--	--	--	--	--	299	299	4.44	4.39	--	--
	114-PZ-52WR-74.0-20241204	12/4/2024	74	N	JE1940	WEATHERED BEDROCK	4610	**451**	--	--	--	132	--	208	222	4.40	4.42	--	--
114-PZ-66WR	114-PZ-66WR-82.2-20211216	12/16/2021	82.2	N	4602492741	WEATHERED BEDROCK	--	--	--	--	--	--	--	--	418 HF	--	7.9 HF	--	22.0 HF
	114-PZ-66WR-83-20230629	6/29/2023	83	N	4602833321	WEATHERED BEDROCK	--	--	--	--	--	--	--	--	516 HF	--	8.2 HF	--	24.2 HF
	114-PZ-66WR-83-20230629	6/29/2023	83	N	4602833322	WEATHERED BEDROCK	3.5	171	--	< 120 U	< 0.10 U	< 0.10 UHFF1	--	--	--	--	--	--	--
	114-PZ-66WR-83-20230629-X	6/29/2023	83	FD	4602833321	WEATHERED BEDROCK	--	--	--	--	--	--	--	--	497 HF	--	8.2 HF	--	23.7 HF
	114-PZ-66WR-83-20230629-X	6/29/2023	83	FD	4602833322	WEATHERED BEDROCK	3.4	174	--	< 120 U	< 0.10 U	0.16 HF	--	--	--	--	--	--	--
	114-PZ-66WR-83.0-20230922	9/22/2023	83	N	4602888091	WEATHERED BEDROCK	3.5 JB	**296**	--	< 120 U	R	R	--	--	582 HF	--	7.9 HF	--	18.8 HF
	114-PZ-66WR-83.0-20230922-X	9/22/2023	83	FD	4602888091	WEATHERED BEDROCK	3.4 JB	**296**	--	< 120 U	< 0.10 UJ	< 0.10 UJ	--	--	552 HF	--	8.0 HF	--	19.1 HF
	114-PZ-66WR-83.0-20231220	12/20/2023	83	N	JD79285	WEATHERED BEDROCK	1.8 J	**374**	--	**< 2500 U**	--	0.48 J-	**146**	--	303	--	7.52	--	--
	114-PZ-66WR-83.0-20231220-X	12/20/2023	83	FD	JD79285	WEATHERED BEDROCK	2.4	**375**	--	< 250 U	--	0.53 J-	**155**	--	309	--	7.48	--	--
	114-PZ-66WR-83.0-20240320	3/20/2024	83	N	JD84853	WEATHERED BEDROCK	< 5.0 U	**390**	--	--	--	0.067 J	--	--	335	--	7.58	--	--
	114-PZ-66WR-83.0-20240320-X	3/20/2024	83	FD	JD84853	WEATHERED BEDROCK	< 5.0 U	**400**	--	--	--	0.059 J	--	--	338	--	7.41	--	--
	114-PZ-66WR-84.0-20240531	5/31/2024	84	N	JD89525	WEATHERED BEDROCK	4.6 J	**378**	696	< 250 U	--	< 0.20 UJ	**145**	340	338	7.65	7.74	--	--
	114-PZ-66WR-84.0-20240807	8/7/2024	84	N	JD93595	WEATHERED BEDROCK	124	**335**	--	--	--	--	--	327	318	7.07	7.03	--	--
	114-PZ-66WR-84.0-20240903	9/3/2024	84	N	JD95322	WEATHERED BEDROCK	1360	**291**	--	--	--	--	--	359	349	6.43	6.37	--	--
	114-PZ-66WR-84.0-20240930	9/30/2024	84	N	JD97124	WEATHERED BEDROCK	1560	**256**	--	--	--	--	--	331	316	6.28	6.23	--	--
	114-PZ-66WR-84.0-20241106	11/6/2024	84	N	JD99782	WEATHERED BEDROCK	1400	69.9	--	--	--	--	--	284	288	6.16	6.21	--	--
	114-PZ-66WR-84.0-20241206	12/6/2024	84	N	JE2113	WEATHERED BEDROCK	1830	< 40 U	--	--	--	24.2	--	270	260	6.22	6.23	--	--

Table 4-1
Groundwater Analytical Results for Bedrock Monitoring Wells
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Garfield Avenue Group Sites
PPG, Jersey City, New Jersey

Notes:

1. There is no established NJ GWQS for hexavalent chromium. Results are compared to the 70 ug/L GWQS for total chromium.
2. Samples collected as part of treatment monitoring events, or other miscellaneous purposes and not used in remedial decision making, are not subject to data validation.

< 10.0 U	Constituent not detected at concentration greater than the sample reporting limit.
13.6	Constituent detected at concentration greater than the sample reporting limit.
311	Constituent detected at concentration greater than the applicable NJ GWQS.

Abbreviations:

bTOIC	below top of inner casing
CAS-RN	Chemical Abstracts Service Registry Number
D	dissolved
deg C	degree Celsius
FD	field duplicate
ft	feet
GWQS	Groundwater Quality Standard(s)
mg/L	milligrams per liter
mS/cm	micro Siemens per centimeter
mv	millivolts
N	normal sample type
N/A	not applicable
NEV	not enough volume
NJ	New Jersey
NTU	nephelometric turbidity units
OR	over range
ORP	oxidation-reduction potential
SDG	sample delivery group
su	standard pH units
T	total
TOC	total organic carbon
ug/L	micrograms per liter
--	analyte not tested

Data Qualifiers:

B	Indicates the analyte was detected in the blank but not greater than the sample reporting limit.
F1	Indicates the matrix spike and/or matrix spike duplicate recovery exceeds control limits.
H	Indicates the analysis was performed outside of the sample holding time.
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.
J	The compound was positively identified; however, the associated numerical value is an estimated concentration only.
J-	Indicates the analyte was positively identified; the associated numerical value is an estimated quantity with a potential low bias.
J+	Indicates the analyte was positively identified; the associated numerical value is an estimated quantity with a potential high bias.
JB	Indicates the analyte concentration is greater than three times, but less than or equal to ten times the concentration in the associated method/prep blank. The presence of that analyte in the sample is considered "real". The concentration is quantitatively qualified (JB) due to method blank contamination.
R	The sample result was rejected due to serious deficiencies; the presence or absence of the analyte could not be confirmed.
RA	The sample results are rejected but still considered useable.
U	Indicates the analyte was analyzed for but not detected.
UB	Indicates the analyte was detected in the sample and blank, but not above the sample reporting limit.
UJ	Indicates the analyte was not detected greater than the reporting limit and the reporting limit was approximate.

Table 4-2
Analytical Results from Quality Assurance Samples
Addendum to Groundwater Remedial Investigation Report
Garfield Avenue Group Sites
PPG, Jersey City, New Jersey

AECOM

				Chromium			Geochemistry											
			Analyte	CHROMIUM	CHROMIUM (HEXAVALENT)		TOTAL ORGANIC CARBON	SULFATE	METHANE	IRON	IRON (FERRIC)	IRON (FERROUS)	MANGANESE	Oxidation-Reduction Potential (ORP)		pH		Temperature
			CAS-RN	7440-47-3	18540-29-9	18540-29-9	TOC	14808-79-8	74-82-8	7439-89-6	20074-52-6	15438-31-0	7439-96-5	REDOX	REDOX	pH	pH	TEMP
			Fraction	T	D	T	T	T	T	D	D	D	D	D	T	D	T	T
			Units	ug/L	ug/L	ug/L	mg/L	mg/L	ug/L	ug/L	mg/L	mg/L	ug/L	mv	mv	su	su	deg C
Sample ID	Sample Date	Sample Type	Lab SDG															
114-BEDROCK RI-FB-20211123	11/23/2021	FB	4602478531	< 4.0 U	--	< 10.0 U	--	--	--	--	--	--	--	--	308 HF	--	7.3 HF	22.1 HF
FB-20211214	12/14/2021	FB	4602491481	< 4.0 U	--	< 10.0 U	--	--	--	--	--	--	--	--	533 HF	--	6.9 HF	21.6 HF
FB-20211215-1	12/15/2021	FB	4602492051	< 4.0 U	--	12.0	--	--	--	--	--	--	--	--	310 HF	--	6.6 HF	21.6 HF
FB-20211216	12/16/2021	FB	4602492741	< 4.0 U	--	< 10.0 U	--	--	--	--	--	--	--	--	380 HF	--	7.2 HF	22.0 HF
FB-20211217	12/17/2021	FB	4602493661	< 4.0 U	--	< 10.0 U	--	--	--	--	--	--	--	--	392 HF	--	6.9 HF	21.7 HF
FB-20211221	12/21/2021	FB	4602496041	< 4.0 U	--	< 10.0 U	--	--	--	--	--	--	--	--	271 HF	--	6.1 HF	22.6 HF
GW-RI-FB-20220421	4/21/2022	FB	4602567051	< 4.0 U	--	< 10.0 U	--	--	--	--	--	--	--	--	324 HF	--	9.2 HF	21.3 HF
GW-RI-FB-20220513	5/13/2022	FB	4602580871	< 4.0 U	--	< 20.0 U	--	--	--	--	--	--	--	--	435 HF	--	8.3 HF	20.7 HF
GW-RI-FB-20220603	6/3/2022	FB	4602593611	< 4.0 U	--	< 10.0 U	--	--	--	--	--	--	--	--	--	--	--	--
GW-RI-FB-20220705	7/5/2022	FB	4602613181	< 4.0 U	--	< 10.0 U	--	--	--	--	--	--	--	--	358 HF	--	8.4 HF	20.6 HF
GW-RI-FB-20220804	8/4/2022	FB	4602632541	< 4.0 U	--	< 10.0 U	--	--	--	--	--	--	--	--	--	--	--	--
GW-RI-FB-20220805	8/5/2022	FB	4602633361	< 4.0 U	--	< 10.0 U	--	--	--	--	--	--	--	--	--	--	--	--
GW-RI-FB-20230627	6/27/2023	FB	4602831932	< 4.0 U	--	< 10.0 U	< 1.0 U	< 0.48 U	--	< 120 U	< 0.10 U	< 0.10 UHF	--	--	434 HF	--	5.7 HF	24.5 HF
GW-RI-FB-20230628	6/28/2023	FB	4602832532	< 4.0 U	--	< 10.0 U	< 1.0 U	< 0.48 U	--	< 120 U	< 0.10 U	< 0.10 UHF	--	--	206 HF	--	6.3 HF	25.5 HF
GW-RI-FB-20230629	6/29/2023	FB	4602833322	< 4.0 U	--	< 10.0 UJ	< 1.0 U	< 0.48 U	--	< 120 U	< 0.10 U	< 0.10 UHF	--	--	257 HF	--	6.3 HF	27.3 HF
GW-RI-FB-20230630	6/30/2023	FB	4602833942	< 4.0 U	--	< 10.0 U	10.9	< 0.48 U	--	< 120 U	< 0.10 U	< 0.10 UHF	--	--	460 HF	--	6.1 HF	22.0 HF
GW-RI-FB-20230703	7/3/2023	FB	4602835472	< 4.0 U	--	< 10.0 RA	< 1.0 U	< 0.48 U	--	< 120 U	< 0.10 U	< 0.10 UHF	--	--	450 HF	--	5.8 HF	22.7 HF
GW-RI-FB-20230726	7/26/2023	FB	4602849651	< 4.0 U	--	< 10.0 U	< 1.0 U	< 0.48 U	--	< 120 U	< 0.10 UJ	< 0.10 UJ	--	--	420 HF	--	8.1 HF	24.3 HF
GW-RI-FB-20230823	8/23/2023	FB	4602867531	< 4.0 U	--	< 10.0 U	0.79 J	< 0.48 U	--	--	--	--	--	--	301 HF	--	6.6 HF	26.4 HF
GW-RI-FB-20230921	9/21/2023	FB	4602887311	< 4.0 U	--	< 10.0 U	< 1.0 U	< 0.48 U	--	--	--	--	--	--	418 HF	--	7.0 HF	22.1 HF
GW-RI-FB-20230922	9/22/2023	FB	4602888091	< 4.0 U	--	< 10.0 U	0.50 J	< 0.48 U	--	--	--	--	--	--	381 HF	--	6.7 HF	19.4 HF
GW-RI-FB-20230925	9/25/2023	FB	4602889531	< 4.0 U	--	< 10.0 U	< 1.0 U	< 0.48 U	--	--	--	--	--	--	402 HF	--	7.0 HF	21.6 HF
GW-RI-FB-20230926	9/26/2023	FB	4602890021	< 4.0 U	--	< 10.0 U	< 1.0 U	< 0.48 U	--	--	--	--	--	--	251 HF	--	7.1 HF	19.3 HF
GW-RI-FB-20230927	9/27/2023	FB	4602890621	< 4.0 U	--	< 10.0 U	0.50 J	< 0.48 U	--	--	--	--	--	--	237 HF	--	7.7 HF	22.2 HF
GW-RI-FB-20231215	12/15/2023	FB	JD78984	< 2.0 U	< 10 U	--	< 1.0 U	1.4 J	--	< 50 U	--	--	< 2.0 U	496	--	7.26	--	--
GW-RI-FB-20231219	12/19/2023	FB	JD79185	< 2.0 U	--	< 10 U	< 1.0 U	< 2.0 U	--	< 50 U	--	--	< 2.0 U	--	382	--	7.57	--
GW-RI-FB-20231220	12/20/2023	FB	JD79285	< 2.0 U	--	< 10 U	< 1.0 U	1.0 J	--	< 50 U	--	< 0.20 U	< 2.0 U	--	377	--	7.97	--
GW-RI-FB-20231222	12/22/2023	FB	JD79443	0.63 J	--	< 10 U	< 1.0 U	1.4 J	--	--	--	--	--	--	374	--	7.87	--
GW-RI-FB-20231227	12/27/2023	FB	JD79684	< 2.0 U	--	< 10 U	< 1.0 U	--	--	--	--	--	--	--	358	--	7.92	--
GW-RI-FB-20240214	2/14/2024	FB	JD82442	< 2.0 U	--	< 10 U	< 1.0 U	< 2.0 U	--	--	--	< 0.20 U	--	--	188	--	8.36	--
GW-RI-FB-20240318	3/18/2024	FB	JD84684	< 2.0 U	--	< 10 U	< 1.0 U	< 2.0 U	--	--	--	< 0.20 UJ	--	--	605	--	8.08	--
GW-RI-FB-20240319	3/19/2024	FB	JD84758	< 2.0 U	--	< 10 U	< 1.0 U	< 2.0 U	--	--	--	< 0.20 UJ	--	--	325	--	7.56	--
GW-RI-FB-20240320	3/20/2024	FB	JD84853	0.72 J	--	< 10 U	< 1.0 U	< 2.0 UB	--	--	--	< 0.20 UJ	--	--	405	--	7.23	--
GW-RI-FB-20240321	3/21/2024	FB	JD84943	< 2.0 U	--	< 10 U	< 1.0 U	1.1 J	--	--	--	< 0.20 UJ	--	--	275	--	7.69	--
GW-RI-FB-20240329	3/29/2024	FB	JD85454	< 2.0 U	--	< 10 U	< 1.0 U	< 2.0 U	--	--	--	< 0.20 UJ	--	--	370	--	5.65	--
P4-IRM-FB-20240520	5/20/2024	FB	JD88834	< 2.0 U	--	< 10 U	< 1.0 U	< 2.0 U	< 0.11 U	--	--	--	--	--	229	--	7.27	--
P4-IRM-FB-20240521	5/21/2024	FB	JD88878	0.68 J	--	< 10 U	--	--	--	--	--	--	--	--	263	--	7.38	--
P4-IRM-FB-20240522	5/22/2024	FB	JD88951	< 2.0 U	--	< 10 U	--	--	--	--	--	--	--	--	348	--	8.06	--
P4-IRM-TB-20240528	5/28/2024	TB	JD89297	--	--	--	--	--	< 0.11 U	--	--	--	--	--	--	--	--	--
P4-IRM-FB-20240528	5/28/2024	FB	JD89297	< 2.0 U	--	< 10 U	< 1.0 U	< 2.0 U	< 0.11 U	--	--	--	--	--	304	--	7.31	--
P4-IRM-TB-20240529	5/29/2024	TB	JD89361	--	--	--	--	--	< 0.11 U	--	--	--	--	--	--	--	--	--
P4-IRM-FB-20240529	5/29/2024	FB	JD89361	< 2.0 U	--	< 10 U	< 1.0 U	< 2.0 U	0.10 J	--	--	--	--	--	400	--	7.36	--
P4-IRM-TB-20240530	5/30/2024	TB	JD89452	--	--	--	--	--	0.15	--	--	--	--	--	--	--	--	--
P4-IRM-FB-20240530	5/30/2024	FB	JD89452	< 2.0 U	--	< 10 U	< 1.0 U	< 2.0 U	< 0.11 U	--	--	--	--	--	362	--	--	--
P4-IRM-TB-20240531	5/31/2024	TB	JD89525	--	--	--	--	--	0.14	--	--	--	--	--	--	--	--	--
P4-IRM-FB-20240531	5/31/2024	FB	JD89525	< 2.0 U	--	< 10 U	< 1.0 U	< 2.0 U	0.11	--	--	--	--	--	368	--	7.28	--
P4-IRM-TB-20240603	6/3/2024	TB	JD89648	--	--	--	--	--	0.16	--	--	--	--	--	--	--	--	--
P4-IRM-FB-20240603	6/3/2024	FB	JD89648	< 2.0 U	--	< 10 U	< 1.0 U	< 2.0 U	0.10 J	--	--	--	--	--	423	--	6.97	--
P4-IRM-TB-20240606	6/6/2024	TB	JD89884	--	--	--	--	--	0.12	--	--	--	--	--	--	--	--	--
P4-IRM-FB-20240606	6/6/2024	FB	JD89884	< 2.0 U	--	< 10 U	< 1.0 U	< 2.0 U	< 0.11 U	--	--	--	--	--	367	--	7.58	--
P4-IRM-FB-20240612	6/12/2024	FB	JD90312	< 2.0 U	--	< 10 U	< 1.0 U	1.1 J	< 0.11 U	--	--	--	--	--	349	--	7.82	--
P4-IRM-TB-20240612	6/12/2024	TB	JD90312	--	--	--	--	--	0.13	--	--	--	--	--	--	--	--	--
GW-RI-FB-20240617	6/17/2024	FB	JD90605	0.69 J	--	< 10 U	< 1.0 U	< 2.0 U	--	--	--	< 0.20 UJ	--	--	330	--	7.98	--
GW-RI-FB-20240619	6/19/2024	FB	JD90728	< 2.0 U	--	< 10 U	< 1.0 U	< 2.0 UB	--	--	--	< 0.20 UJ	--	--	258	--	8.29	--

Table 4-2
Analytical Results from Quality Assurance Samples
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				Chromium			Geochemistry											
			Analyte	CHROMIUM	CHROMIUM (HEXAVALENT)		TOTAL ORGANIC CARBON	SULFATE	METHANE	IRON	IRON (FERRIC)	IRON (FERROUS)	MANGANESE	Oxidation-Reduction Potential (ORP)		pH		Temperature
			CAS-RN	7440-47-3	18540-29-9	18540-29-9	TOC	14808-79-8	74-82-8	7439-89-6	20074-52-6	15438-31-0	7439-96-5	REDOX	REDOX	pH	pH	TEMP
			Fraction	T	D	T	T	T	T	D	D	D	D	D	T	D	T	T
			Units	ug/L	ug/L	ug/L	mg/L	mg/L	ug/L	ug/L	mg/L	mg/L	ug/L	mv	mv	su	su	deg C
Sample ID	Sample Date	Sample Type	Lab SDG															
PA-IRM-TB-20240619	6/19/2024	TB	JD90731	--	--	--	--	--	0.12	--	--	--	--	--	--	--	--	--
PA-IRM-FB-20240619	6/19/2024	FB	JD90731	< 2.0 U	--	< 10 U	< 1.0 U	< 2.0 UB	< 0.11 U	--	--	--	--	--	401	--	8.01	--
P4-IRM-TB-20240620	6/20/2024	TB	JD90827	--	--	--	--	--	0.11	--	--	--	--	--	--	--	--	--
P4-IRM-FB-20240620	6/20/2024	FB	JD90827	2.9	--	< 10 U	< 1.0 U	< 2.0 U	< 0.11 U	--	--	--	--	--	431	--	7.39	--
P4-IRM-FB-20240621	6/21/2024	FB	JD90888	0.73 J	--	< 10 U	< 1.0 U	< 2.0 U	0.080 J	--	--	--	--	--	400	--	8.11	--
P4-IRM-TB-20240621	6/21/2024	TB	JD90888	--	--	--	--	--	0.14	--	--	--	--	--	--	--	--	--
GW-RI-FB-20240621	6/21/2024	FB	JD90886	< 2.0 U	--	< 10 U	< 1.0 U	< 2.0 U	--	--	--	< 0.20 UJ	--	--	397	--	8.18	--
P4-IRM-FB-20240624	6/24/2024	FB	JD91036	< 2.0 U	--	< 10 U	1.8	< 2.0 U	< 0.11 U	--	--	--	--	--	290	--	8.06	--
P4-IRM-TB-20240624	6/24/2024	TB	JD91036	--	--	--	--	--	0.12	--	--	--	--	--	--	--	--	--
P4-IRM-FB-20240627-B	6/27/2024	FB	JD91283	< 2.0 U	--	< 10 U	< 1.0 U	< 2.0 U	0.49	--	--	--	--	--	421	--	8.20	--
P4-IRM-TB-20240627	6/27/2024	TB	JD91283	--	--	--	--	--	0.19	--	--	--	--	--	--	--	--	--
GW-RI-FB-20240705	7/5/2024	FB	JD91702	< 2.0 U	--	< 10 U	< 1.0 U	--	--	--	--	--	--	--	187	--	12.04	--
GW-RI-FB-20240709	7/9/2024	FB	JD91859	< 2.0 U	--	< 10 U	< 1.0 U	--	--	--	--	--	--	--	265	--	9.75	--
GW-RI-FB-20240710	7/10/2024	FB	JD91932	< 2.0 U	--	< 10 U	< 1.0 U	--	--	--	--	--	--	--	239	--	8.64	--
FB-20240726	7/26/2024	FB	JD92936	< 2.0 U	--	< 10 U	< 1.0 U	< 2.0 U	--	--	--	--	--	--	356	--	7.57	--
WB-FB-2024085	8/5/2024	FB	JD93435	< 2.0 U	--	< 10 U	< 1.0 U	< 2.0 U	--	--	--	--	--	--	396	--	8.27	--
WB-FB-20240806	8/6/2024	FB	JD93519	< 2.0 U	--	< 10 U	< 1.0 U	< 2.0 U	--	--	--	--	--	--	360	--	7.84	--
WB-FB-20240807	8/7/2024	FB	JD93595	< 2.0 U	--	< 10 U	< 1.0 U	< 2.0 U	--	--	--	--	--	--	309	--	7.55	--
FB-20240812	8/12/2024	FB	JD93902	< 2.0 U	--	< 10 U	< 1.0 U	< 2.0 U	--	--	--	--	--	--	519	--	8.56	--
FB-20240813	8/13/2024	FB	JD93987	0.99 J	--	< 10 U	< 1.0 U	< 2.0 U	--	--	--	--	--	--	201	--	8.53	--
BT-FB-20240821	8/21/2024	FB	JD94597	< 2.0 U	--	< 10 U	< 1.0 U	< 2.0 U	--	--	--	--	--	--	327	--	8.05	--
WB-BT-FB-20240903	9/3/2024	FB	JD95322	< 2.0 U	--	< 10 U	< 1.0 U	< 2.0 U	--	--	--	--	--	--	298	--	5.43	--
WB-BT-FB-20240904	9/4/2024	FB	JD95426	1.0 B	--	< 10 U	< 1.0 U	< 2.0 U	--	--	--	--	--	--	304	--	8.11	--
WB-BT-FB-20240905	9/5/2024	FB	JD95510	0.88 B	--	< 10 U	< 1.0 U	< 2.0 U	--	--	--	--	--	--	363	--	6.77	--
WB-BT-FB-20240906	9/6/2024	FB	JD95614	< 2.0 U	--	< 10 U	< 1.0 U	< 2.0 U	--	--	--	--	--	--	344	--	7.89	--
GW-RI-FB-20240916	9/16/2024	FB	JD96195	0.67 J	--	< 10 U	< 1.0 U	< 2.0 U	--	--	--	--	--	--	720	--	1.77	--
GW-RI-FB-20240917	9/17/2024	FB	JD96274	< 2.0 U	--	< 10 U	< 1.0 U	< 2.0 U	--	--	--	--	--	--	307	--	8.04	--
GW-RI-FB-20240918	9/18/2024	FB	JD96352	< 2.0 U	--	< 10 U	< 1.0 UJ	< 2.0 U	--	--	--	--	--	--	338	--	7.99	--
GW-RI-FB-20240919	9/19/2024	FB	JD96459	< 2.0 U	--	< 10 U	< 1.0 U	< 2.0 U	--	--	--	--	--	--	282	--	8.65	--
WBBT-FB-20240930	9/30/2024	FB	JD97124	< 2.0 U	--	< 10 U	< 1.0 U	< 2.0 U	--	--	--	--	--	--	249	--	5.36	--
WBBT-FB-20241001	10/1/2024	FB	JD97187	< 2.0 U	--	< 10 U	< 1.0 U	< 2.0 U	--	--	--	--	--	--	366	--	5.16	--
WBBT-FB-20241016	10/16/2024	FB	JD98353	< 2.0 U	--	< 10 U	< 1.0 U	< 2.0 U	--	--	--	--	--	--	327	--	8.43	--
WBBT-FB-20241104	11/4/2024	FB	JD99628	< 2.0 U	--	< 10 U	< 1.0 U	< 2.0 U	--	--	--	--	--	--	302	--	8.50	--
WBBT-FB-20241105	11/5/2024	FB	JD99684	1.4 B	--	< 10 U	< 1.0 U	< 2.0 U	--	--	--	--	--	--	367	--	7.87	--
WBBT-FB-20241106	11/6/2024	FB	JD99782	< 2.0 U	--	< 10 U	< 1.0 U	1.1 B	--	--	--	--	--	--	310	--	5.50	--
WBBT-FB-20241204	12/4/2024	FB	JE1940	< 2.0 U	--	< 10 U	< 1.0 U	< 2.0 U	--	--	--	--	--	--	239	--	7.60	--
WBBT-FB-20241205	12/5/2024	FB	JE2028	< 2.0 U	--	< 10 U	< 1.0 U	< 2.0 U	--	--	--	--	--	--	266	--	7.96	--
GW-RI-FB-20241213	12/13/2024	FB	JE2642	< 2.0 U	--	< 10 U	< 1.0 U	< 2.0 U	--	--	--	--	--	--	356	--	7.94	--
GW-RI-FB-20241216	12/16/2024	FB	JE2768	< 2.0 U	--	< 10 U	0.86 J	< 2.0 U	--	--	--	--	--	--	359	--	8.59	--
GW-RI-FB-20241217	12/17/2024	FB	JE2865	0.68 J	--	< 10 U	0.75 J	< 2.0 U	--	--	--	--	--	--	210	--	7.17	--
GW-RI-FB-20241218	12/18/2024	FB	JE2940	< 2.0 U	--	< 10 U	R	0.89 J	--	--	--	--	--	--	306	--	8.64	--
GW-RI-FB-20250115	1/15/2025	FB	JE4228	< 2.0 U	--	< 10 U	--	< 2.0 U	--	--	--	--	--	--	274	--	8.83	--
GW-RI-FB-20250116	1/16/2025	FB	JE4326	0.73 J	--	< 10 U	--	< 2.0 U	--	--	--	--	--	--	319	--	8.67	--
GW-RI-FB-20250117	1/17/2025	FB	JE4369	0.71 B	--	< 10 U	--	< 2.0 U	--	--	--	--	--	--	364	--	8.67	--

Table 4-2
Analytical Results from Quality Assurance Samples
Addendum to Groundwater Remedial Investigation Report
Garfield Avenue Group Sites
PPG, Jersey City, New Jersey

Notes:

1. Samples collected as part of treatment monitoring events, or other miscellaneous purposes and not used in remedial decision making, are not subject to data validation.

< 10.0 U	Constituent not detected at concentration greater than the sample reporting limit.
13.6	Constituent detected at concentration greater than the sample reporting limit.

Abbreviations:

CAS-RN	Chemical Abstracts Service Registry Number
D	dissolved
deg C	degree Celsius
FB	field blank
mg/L	milligrams per liter
mv	millivolts
N/A	not applicable
NJ	New Jersey
ORP	oxidation-reduction potential
SDG	sample delivery group
su	standard pH units
T	total
TB	trip blank
TOC	total organic carbon
ug/L	micrograms per liter
--	analyte not tested

Data Qualifiers:

B	Indicates the analyte was detected in the blank but not greater than the sample reporting limit.
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.
J	The compound was positively identified; however, the associated numerical value is an estimated concentration only.
R	The sample result was rejected due to serious deficiencies; the presence or absence of the analyte could not be confirmed.
RA	The sample results are rejected but still considered useable.
U	Indicates the analyte was analyzed for but not detected.
UB	Indicates the analyte was detected in the sample and blank, but not above the sample reporting limit.
UJ	Indicates the analyte was not detected greater than the reporting limit and the reporting limit was approximate.

Table 4-3
Historic Groundwater Analytical Results for Bedrock Monitoring Wells
Addendum to Groundwater Remedial Investigation Report
Garfield Avenue Group Sites
PPG, Jersey City, New Jersey

						Analyte	**CHROMIUM**	**CHROMIUM (HEXAVALENT)**
						Fraction	**T**	**T**
						CAS RN	**7440-47-3**	**18540-29-9**
						Units	**µg/l**	**µg/l**
						GWQS	**70**	**NA**
Well ID	**Water-Bearing Zone**	**Sample Depth (ft btwc)**	**Sample ID**	**Sample Type**	**Lab SDG**	**Date Collected**		
114-MW16B	Bedrock - Diabase	31.29 - 33	PPG114-MW16BJ54227-3	N	J54227	02/20/2007	**1820**	3000
114-MW16B	Bedrock - Diabase	30 - 35	PPG114-MW16BJ60618-20	N	J60618	05/11/2007	**104**	200 J
114-MW16B	Bedrock - Diabase	32.5	114-MW16B-GA01-32.5	N	460277521	06/16/2011	16.8	5.1 J
114-MW16B	Bedrock - Diabase	NA	114-MW16B-20151214	N	JC10597	12/14/2015	27.0	22
114-MW16B	Bedrock - Diabase	33	114-MW16B-33.0-20200821	N	JD12104	08/21/2020	--	< 5.8 U
114-MW16B	Bedrock - Diabase	33	114-MW16B-33.0-20200821	N	JD12104R	08/21/2020	2.8 J	--
114-MW4D	Bedrock - Diabase	86.5 - 107	PPG-114-MW4DJ53993-5	N	J53993	02/15/2007	**278**	< 10 U
114-MW4D	Bedrock - Diabase	86.5 - 107	PPG114-MW4DJ60618-4	N	J60618	05/09/2007	44.4 J	< 10 UJ
114-MW4D	Bedrock - Diabase	89.5 - 89.5	114-MW4D-GA01-89.5	N	460279821	06/22/2011	4.6 J	< 1.5 U
114-MW4D	Bedrock - Diabase	94.5 - 94.5	114-MW4D-GA01-94.5	N	460279821	06/22/2011	18.5	< 1.5 U
114-MW4D	Bedrock - Diabase	99.5 - 99.5	114-MW4D-GA01-99.5	N	460279821	06/22/2011	15.1	< 1.5 U
114-MW4D	Bedrock - Diabase	104.5 - 104.5	114-MW4D-GA01-104.5	N	460279821	06/22/2011	14.6	< 1.5 U
114-MW4D	Bedrock - Diabase	90	114-MW4D-20151215-90	N	JC10722	12/15/2015	4.5 J	< 0.92 U
114-MW4D	Bedrock - Diabase	95	114-MW4D-20151215-95	N	JC10722	12/15/2015	5.6 J	< 0.92 U
114-MW4D	Bedrock - Diabase	100	114-MW4D-20151215-100	N	JC10722	12/15/2015	14.5	< 0.92 U
114-MW4D	Bedrock - Diabase	103.5	114-MW4D-20151215-103.5	N	JC10722	12/15/2015	6.8 J	< 0.92 U
114-MW4D	Bedrock - Diabase	89.5 - 90	114-MW4D-89.5-90.0	N	JC88938	05/30/2019	9.0 J	< 5.8 U
114-MW4D	Bedrock - Diabase	94.5 - 95	114-MW4D-94.5-95.0	N	JC88938	05/30/2019	16.0	< 5.8 U
114-MW4D	Bedrock - Diabase	99.5 - 100	114-MW4D-99.5-100.0	N	JC88938	05/30/2019	10.5	< 5.8 U
114-MW4D	Bedrock - Diabase	104.5 - 105	114-MW4D-104.5-105.0	N	JC88938	05/30/2019	11.3	< 5.8 U
114-MW4D	Bedrock - Diabase	104.5 - 105	114-MW4D-104.5-105.0X	FD	JC88938	05/30/2019	9.8 J	< 5.8 U
114-MW4D	Bedrock - Diabase	97	114-MW4D-97.0-20190611	N	JC89662	06/11/2019	< 10 U	--
114-MW4D	Bedrock - Diabase	97	114-MW4D-97.0-20190801	N	JC92572	08/01/2019	2.5 B	--
114-MW4D	Bedrock - Diabase	85	114-MW4D-85-20200826	N	JD12249	08/26/2020	2.0 J	< 5.8 UJ
114-MW4D	Bedrock - Diabase	90	114-MW4D-90-20200826	N	JD12249	08/26/2020	< 2.0 U	< 5.8 UJ
114-MW4D	Bedrock - Diabase	95	114-MW4D-95-20200826	N	JD12249	08/26/2020	< 2.0 U	< 5.8 UJ
114-MW4D	Bedrock - Diabase	100	114-MW4D-100-20200826	N	JD12249	08/26/2020	< 2.0 U	< 5.8 UJ
114-MW52D	Bedrock - Lockatong	81	114-MW52D-81-20210211	N	JD20260	02/11/2021	**44000**	47300
114-MW52D	Bedrock - Lockatong	83.5	114-MW52D-83.5-20210211	N	JD20260	02/11/2021	**43000**	44500
114-MW52D	Bedrock - Lockatong	88	114-MW52D-88-20210211	N	JD20260	02/11/2021	**44100**	47300
114-MW52D	Bedrock - Lockatong	102	114-MW52D-102-20210211	N	JD20260	02/11/2021	**42200**	47000
114-MW52D	Bedrock - Lockatong	105	114-MW52D-105-20210211	N	JD20260	02/11/2021	**46500**	46500

Table 4-3
Historic Groundwater Analytical Results for Bedrock Monitoring Wells
Addendum to Groundwater Remedial Investigation Report
Garfield Avenue Group Sites
PPG, Jersey City, New Jersey

						Analyte	CHROMIUM	CHROMIUM (HEXAVALENT)
						Fraction	T	T
						CAS RN	7440-47-3	18540-29-9
						Units	µg/l	µg/l
						GWQS	70	NA
Well ID	Water-Bearing Zone	Sample Depth (ft btwc)	Sample ID	Sample Type	Lab SDG	Date Collected		
114-MW57D	Bedrock - Lockatong	87.25	114-MW57D-87.25-20210209	N	JD20125	02/09/2021	**108**	< 5.8 UJ
114-MW57D	Bedrock - Lockatong	90	114-MW57D-90-20210209	N	JD20125	02/09/2021	**82.4**	< 5.8 UJ
114-MW57D	Bedrock - Lockatong	98	114-MW57D-98-20210210	N	JD20166	02/10/2021	**112**	< 5.8 U
114-MW57D	Bedrock - Lockatong	98	114-MW57D-98-20210210-X	FD	JD20166	02/10/2021	**114**	< 5.8 U
114-MW57D	Bedrock - Lockatong	102	114-MW57D-102-20210210	N	JD20166	02/10/2021	69.3	< 5.8 U
114-MW61D	Bedrock - Diabase	88	114-MW61D-88-20210212	N	JD20313	02/12/2021	4.5 J	6.0 J
114-MW61D	Bedrock - Diabase	91	114-MW61D-91-20210212	N	JD20313	02/12/2021	2.7 J	< 5.8 U
114-MW61D	Bedrock - Diabase	93.5	114-MW61D-93.5-20210212	N	JD20313	02/12/2021	2.3 J	< 5.8 U
114-MW61D	Bedrock - Diabase	102	114-MW61D-102-20210212	N	JD20313	02/12/2021	3.2 J	< 5.8 U
114-MW61D	Bedrock - Diabase	106.5	114-MW61D-106.5-20210215	N	JD20380	02/15/2021	< 2.0 U	< 5.8 U
114-MW61D	Bedrock - Diabase	110	114-MW61D-110-20210215	N	JD20380	02/15/2021	< 2.0 U	< 5.8 U
114-MW66D	Bedrock - Lockatong	92	114-MW66D-92-20210210	N	JD20166	02/10/2021	**6450**	5900
114-MW66D	Bedrock - Lockatong	94	114-MW66D-94-20210210	N	JD20166	02/10/2021	**6350**	6000
114-MW66D	Bedrock - Lockatong	110	114-MW66D-110-20210210	N	JD20166	02/10/2021	**596**	260
114-MW66D	Bedrock - Lockatong	114	114-MW66D-114-20210210	N	JD20166	02/10/2021	**393**	86
114-MW6D	Bedrock - Lockatong	86 - 111	PPG-114-MW6D-108.5J53993-1	N	J53993	02/15/2007	22.1	< 10 U
114-MW6D	Bedrock - Lockatong	86 - 111	PPG114-MW6DJ60618-5	N	J60618	05/09/2007	< 10 UJ	< 10 U
114-MW6D	Bedrock - Lockatong	NA	114-P1A-PBR-MW6D-Q1	N	JB25482	01/03/2013	2.0 J	< 1.4 U
114-MW6D	Bedrock - Lockatong	88.5	114-MW6D-20151221-88.5	N	JC11194	12/21/2015	3.6 J	< 0.92 U
114-MW6D	Bedrock - Lockatong	93.5	114-MW6D-20151221-93.5	N	JC11194	12/21/2015	2.6 J	< 0.92 U
114-MW6D	Bedrock - Lockatong	98.5	114-MW6D-20151221-98.5	N	JC11194	12/21/2015	1.8 J	< 0.92 U
114-MW6D	Bedrock - Lockatong	98.5	114-MW6D-20151221-98.5-X	FD	JC11194	12/21/2015	1.8 J	< 0.92 U
114-MW6D	Bedrock - Lockatong	103.5	114-MW6D-20151221-103.5	N	JC11194	12/21/2015	2.6 J	< 0.92 U
114-MW6D	Bedrock - Lockatong	108.5	114-MW6D-20151221-108.5	N	JC11194	12/21/2015	2.5 J	< 0.92 U
114-MW6D	Bedrock - Lockatong	89.5 - 90	114-MW6D-89.5-90.0	N	JC88938	05/30/2019	6.9 J	< 5.8 U
114-MW6D	Bedrock - Lockatong	94.5 - 95	114-MW6D-94.5-95.0	N	JC88938	05/30/2019	7.6 J	< 5.8 U
114-MW6D	Bedrock - Lockatong	99.5 - 100	114-MW6D-99.5-100.0	N	JC88938	05/30/2019	7.8 J	< 5.8 U
114-MW6D	Bedrock - Lockatong	104.5 - 105	114-MW6D-104.5-105.0	N	JC88938	05/30/2019	5.3 J	< 5.8 U
114-MW6D	Bedrock - Lockatong	109.5 - 110	114-MW6D-109.5-110.0	N	JC88938	05/30/2019	3.8 J	< 5.8 U
114-MW6D	Bedrock - Lockatong	103.5	114-MW6D-103.5-20200826	N	JD12249	08/26/2020	< 2.0 U	< 5.8 UJ
114-MW6D	Bedrock - Lockatong	108.5	114-MW6D-108.5-20200826	N	JD12249	08/26/2020	3.4 J	< 5.8 UJ
114-MW6D	Bedrock - Lockatong	88.5	114-MW6D-88.5-20200827	N	JD12322	08/27/2020	< 2.0 U	< 5.8 U
114-MW6D	Bedrock - Lockatong	93.5	114-MW6D-93.5-20200827	N	JD12322	08/27/2020	< 2.0 U	< 5.8 U
114-MW6D	Bedrock - Lockatong	98.5	114-MW6D-98.5-20200827	N	JD12322	08/27/2020	< 2.0 U	< 5.8 U

Table 4-3
Historic Groundwater Analytical Results for Bedrock Monitoring Wells
Addendum to Groundwater Remedial Investigation Report
Garfield Avenue Group Sites
PPG, Jersey City, New Jersey

						Analyte	CHROMIUM	CHROMIUM (HEXAVALENT)
						Fraction	T	T
						CAS RN	7440-47-3	18540-29-9
						Units	µg/l	µg/l
						GWQS	70	NA
Well ID	Water-Bearing Zone	Sample Depth (ft btwc)	Sample ID	Sample Type	Lab SDG	Date Collected		
114-MW7D	Bedrock - Indeterminate	85 - 90	PPG-114-MW7D DUPJ53993-3	FD	J53993	02/15/2007	29.5	< 10 U
114-MW7D	Bedrock - Indeterminate	85 - 90	PPG-114-MW7DJ53993-2	N	J53993	02/15/2007	25.2	< 10 U
114-MW7D	Bedrock - Indeterminate	85 - 90	PPG114-MW7DJ60618-7	N	J60618	05/09/2007	15.5 J	< 10 UJ
114-MW7D	Bedrock - Indeterminate	81	114-MW7D-GA01-81.0	N	460282441	06/29/2011	14.2	6.4 J
114-MW7D	Bedrock - Indeterminate	60	114-MW7D-20151222-60.0	N	JC11265	12/22/2015	24.5	3.4 RA
114-MW7D	Bedrock - Indeterminate	87.5 - 88	114-MW7D-87.5-88.0	N	JC89029	05/31/2019	6.3 J	7.5 J
114-MW7D	Bedrock - Indeterminate	87.5	114-MW7D-87.5-20200831	N	JD12474	08/31/2020	3.6 J	< 5.8 U

Notes:

< 10 U	Constituent not detected at concentration greater than the sample reporting limit.
13.6	Constituent detected at concentration greater than the sample reporting limit.
311	Constituent detected at concentration greater than the applicable NJ GWQS.

Abbreviations:

µg/L	micrograms per liter
btwc	below top of well casing
CAS-RN	Chemical Abstracts Service Registry Number
FD	field duplicate sample
ft	feet
GWQS	NJ Groundwater Quality Standard
N	normal environmental sample
NA	not applicable
NJ	New Jersey
T	total/unfiltered

Data Qualifiers:

J	The compound was positively identified; however, the associated numerical value is an estimated concentration only.
J+	Indicates the analyte was positively identified; the associated numerical value is an estimated quantity with a potential high bias.
J-	Indicates the analyte was negatively identified; the associated numerical value is an estimated quantity with a potential low bias.
JB	The analyte concentration is greater than three (3) times, but less than or equal to ten (10) times the concentration in the associated method/prep blank. The presence of that analyte in the sample is considered "real." The concentration is quantitatively qualified (JB) due to method blank contamination.
R	The sample result was rejected due to serious deficiencies; the presence or absence of the analyte could not be confirmed.
U	Indicates the analyte was analyzed for but not detected. The analyte concentration is less than or equal to three (3) times the concentration in the associated method/prep blank.
UB	The presence of the analyte in the sample is negated (UB) due to laboratory contamination.
UJ	Indicates the analyte was not detected above the RL and the RL was approximate.

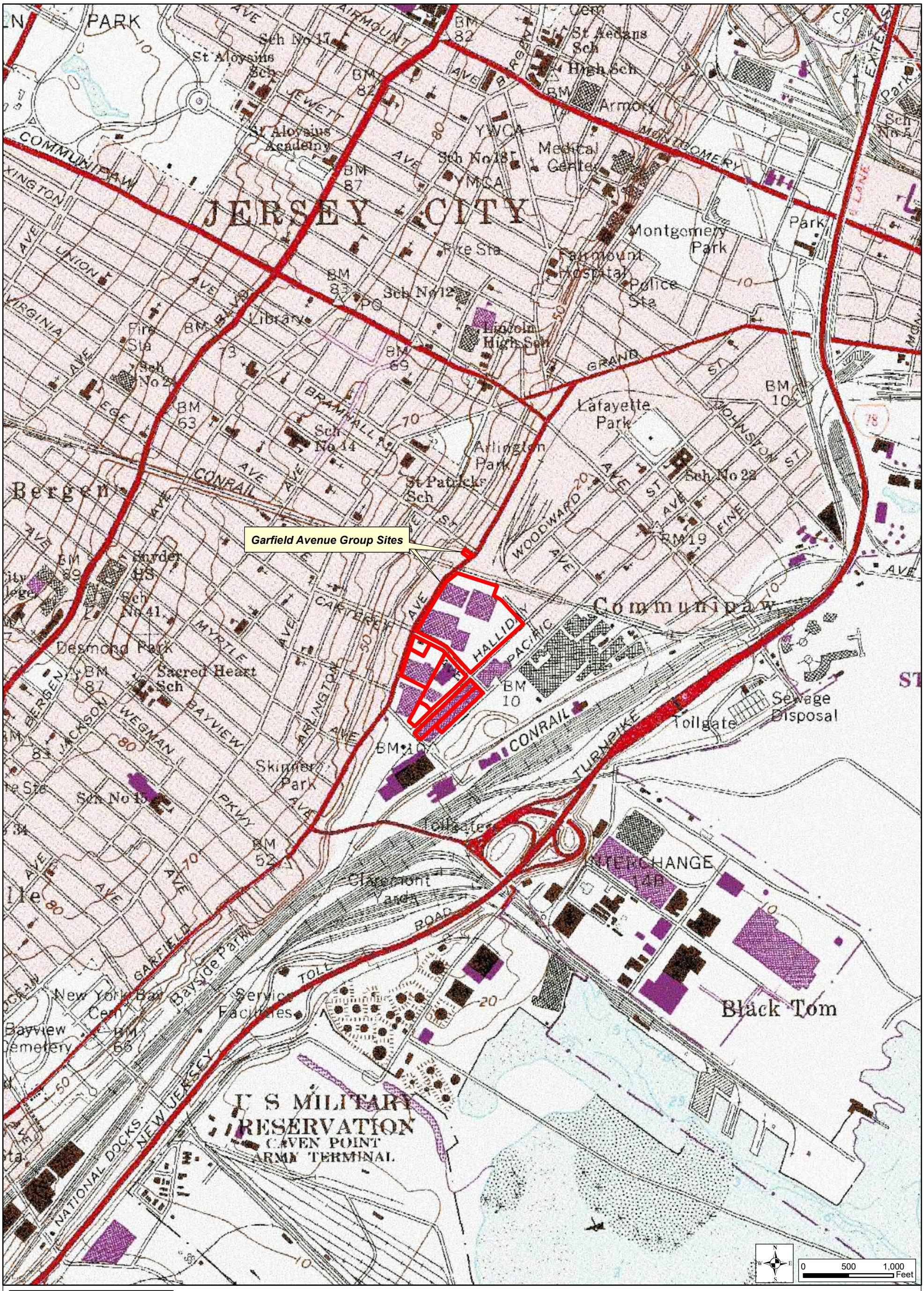
Table 4-4
Groundwater Analytical Results for Bedrock Injection Wells
Addendum to Groundwater Remedial Investigation Report
Garfield Avenue Group Sites
PPG, Jersey City, New Jersey

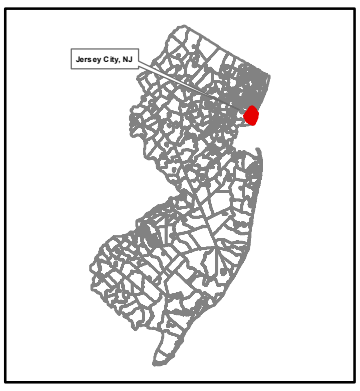
							Chromium				Field Geochemistry					
						Analyte	CHROMIUM		CHROMIUM (HEXAVALENT)		Oxidation-Reduction Potential (ORP)	Oxygen, Dissolved	pH	Specific Conductivity (Field)	Temperature (Field)	Turbidity
						CAS-RN	7440-47-3	7440-47-3	18540-29-9	18540-29-9	REDOX	DO	pH	SC-F	TEMP-F	TURB
						Fraction	D	T	D	T	T	T	T	T	T	T
						GWQS	70	70								
						Units	ug/L	ug/L	ug/L	ug/L	mv	mg/L	su	mS/cm	deg C	NTU
Well ID	**Sample ID**	**Sample Date**	**Sample Depth Interval (ft bTOIC)**	**Sample Type**	**Lab SDG**	**Water Bearing Zone**										
114-PW-01WR	114-PW-01WR-83.5-20240603	6/3/2024	83.5	N	JD89648	BEDROCK	**15000**	**14700**	16000	16100	-393.8	0.21	8.15	1.209	20.3	8.76
	114-PW-01WR-88.5-20240603	6/3/2024	88.5	N	JD89648	BEDROCK	**29400**	**29800**	33000	35100	-407.7	0.17	7.87	1.394	21.2	9.75
114-PW-02WR	114-PW-02WR-88.8-20240606	6/6/2024	88.8	N	JD89884	BEDROCK	**98400**	**105000**	110000	106000	-197.3	0.4	7.9	1.761	21	1.3
	114-PW-02WR-93.8-20240606	6/6/2024	93.8	N	JD89884	BEDROCK	**121000**	**110000**	104000	110000	-281.1	0.19	7.79	1.809	20.5	3.5
114-PW-03WR	114-PW-03WR-87.0-20240620	6/20/2024	87	N	JD90827	BEDROCK	**440000**	**432000**	417000	457000	128.6	0.94	7.13	3217	17.8	10.7
	114-PW-03WR-92.0-20240620	6/20/2024	92	N	JD90827	BEDROCK	**425000**	**418000**	398000	460000	118.5	0.55	7.13	3216	17.8	9.48
	114-PW-03WR-92.0-20240620-X	6/20/2024	92	FD	JD90827	BEDROCK	**399000**	**452000**	419000	498000	--	--	--	--	--	--
114-PW-04WR	114-PW-04WR-50.0-20240621	6/21/2024	50	N	JD90888	BEDROCK	**6160**	**6320**	7100	6900	-89.9	2.24	8.49	2318	19.5	14.8
	114-PW-04WR-55.0-20240621	6/21/2024	55	N	JD90888	BEDROCK	**7260**	**7240**	7400	7400	-73.4	1.04	8.18	2355	19.9	9.81
114-PW-05WR	114-PW-05WR-86.9-20240606	6/6/2024	86.9	N	JD89884	BEDROCK	**6280**	**4590**	7000	6700	-457.2	0.3	7.83	1019	20.2	8.68
	114-PW-05WR-91.9-20240606	6/6/2024	91.9	N	JD89884	BEDROCK	**12400**	**13000**	12600	12900	-322.4	0.27	7.74	1045	19.4	19.2
114-PW-06WR	114-PW-06WR-81.5-20240603	6/3/2024	81.5	N	JD89648	BEDROCK	**752**	**766**	780	760	-242	0.31	8.08	1.074	22	3.58
	114-PW-06WR-86.5-20240603	6/3/2024	86.5	N	JD89648	BEDROCK	**908**	**901**	860	910	-275	0.23	8.05	1.096	21.4	5.31
114-PW-07WR	114-PW-07WR-72.0-20240612	6/12/2024	72	N	JD90312	BEDROCK	16.8	34.7	8.4 J	6.1 J	-201.8	0.27	9.16	0.85	18	9.81
	114-PW-07WR-77.0-20240612	6/12/2024	77	N	JD90312	BEDROCK	**443**	**479**	490	490	-204.8	0.17	9.06	0.866	18.6	9.47
114-PW-09WR	114-PW-09WR-77.0-20240624	6/24/2024	77	N	JD91036	BEDROCK	< 10 U	< 10 U	< 10 U	< 10 U	-88.1	4.98	8.45	1020	18.9	5.19
	114-PW-09WR-77.0-20240624-X	6/24/2024	77	FD	JD91036	BEDROCK	< 10 U	< 10 U	< 10 U	< 10 U	--	--	--	--	--	--
	114-PW-09WR-82.0-20240624	6/24/2024	82	N	JD91036	BEDROCK	< 10 U	3.3 J	< 10 U	< 10 U	-80.6	0.3	8.32	1046	18	7.69
114-PW-10WR	114-PW-10WR-82.0-20240627	6/27/2024	82	N	JD91283	BEDROCK	< 10 U	3.8 J	< 10 U	< 10 U	-121.6	2.69	9.12	0.84	20.3	6.41
	114-PW-10WR-87.0-20240627	6/27/2024	87	N	JD91283	BEDROCK	< 10 U	< 10 U	< 10 U	< 10 U	-127.6	0.14	9.15	0.861	18.2	6.81

Table 4-4
Groundwater Analytical Results for Bedrock Injection Wells
Addendum to Groundwater Remedial Investigation Report
Garfield Avenue Group Sites
PPG, Jersey City, New Jersey

							Lab Geochemistry								
						Analyte	TOTAL ORGANIC CARBON	SULFATE	METHANE	IRON	MANGANESE	Oxidation-Reduction Potential (ORP)		pH	
						CAS-RN	TOC	14808-79-8	74-82-8	7439-89-6	7439-96-5	REDOX	REDOX	pH	pH
						Fraction	T	T	T	D	D	D	T	D	T
						GWQS		250		300	50				
						Units	mg/L	mg/L	ug/L	ug/L	ug/L	mv	mv	su	su
Well ID	**Sample ID**	**Sample Date**	**Sample Depth Interval (ft bTOIC)**	**Sample Type**	**Lab SDG**	**Water Bearing Zone**									
114-PW-01WR	114-PW-01WR-83.5-20240603	6/3/2024	83.5	N	JD89648	BEDROCK	< 5.0 U	225	282	< 250 U	**50.3**	348	292	8.16	8.21
	114-PW-01WR-88.5-20240603	6/3/2024	88.5	N	JD89648	BEDROCK	< 5.0 U	244	273	< 250 U	**60.9**	355	354	8.02	8.04
114-PW-02WR	114-PW-02WR-88.8-20240606	6/6/2024	88.8	N	JD89884	BEDROCK	2.5	**260**	91.7	< 250 U	33.9	364	362	8.20	8.15
	114-PW-02WR-93.8-20240606	6/6/2024	93.8	N	JD89884	BEDROCK	2.5	**265**	103	< 250 U	36.7	362	362	8.09	8.19
114-PW-03WR	114-PW-03WR-87.0-20240620	6/20/2024	87	N	JD90827	BEDROCK	< 5.0 U	**427**	261	**< 250000 U**	**< 10000 U**	341	327	7.19	7.21
	114-PW-03WR-92.0-20240620	6/20/2024	92	N	JD90827	BEDROCK	3.7 J	**452**	348	**< 250000 U**	**< 10000 U**	350	349	7.23	7.18
	114-PW-03WR-92.0-20240620-X	6/20/2024	92	FD	JD90827	BEDROCK	3.6 J	**447**	312	**< 250000 U**	**< 10000 U**	355	353	7.26	7.18
114-PW-04WR	114-PW-04WR-50.0-20240621	6/21/2024	50	N	JD90888	BEDROCK	3.1	**507**	673	< 250 U	**112**	303	309	8.19	8.18
	114-PW-04WR-55.0-20240621	6/21/2024	55	N	JD90888	BEDROCK	2.2	**542**	705	< 250 U	**125**	306	304	8.18	8.11
114-PW-05WR	114-PW-05WR-86.9-20240606	6/6/2024	86.9	N	JD89884	BEDROCK	2.1	196	61.2	< 250 U	**51.0**	368	367	8.18	8.13
	114-PW-05WR-91.9-20240606	6/6/2024	91.9	N	JD89884	BEDROCK	1.8	201	90.6	< 250 U	**60.6**	368	366	8.18	8.17
114-PW-06WR	114-PW-06WR-81.5-20240603	6/3/2024	81.5	N	JD89648	BEDROCK	1.5	184	6.31	< 250 U	**86.5**	424	429	8.19	8.20
	114-PW-06WR-86.5-20240603	6/3/2024	86.5	N	JD89648	BEDROCK	1.6	182	4.09	< 250 U	**78.8**	420	423	8.16	8.22
114-PW-07WR	114-PW-07WR-72.0-20240612	6/12/2024	72	N	JD90312	BEDROCK	1.4	**270**	157 J	< 250 U	13.0	347	357	8.72	8.49
	114-PW-07WR-77.0-20240612	6/12/2024	77	N	JD90312	BEDROCK	1.4	**263**	132 J	< 250 U	16.2	349	350	8.63	8.63
114-PW-09WR	114-PW-09WR-77.0-20240624	6/24/2024	77	N	JD91036	BEDROCK	< 3.0 UB	236	1050	**414**	**85.3**	287	288	8.17	8.02
	114-PW-09WR-77.0-20240624-X	6/24/2024	77	FD	JD91036	BEDROCK	< 3.9 UB	237	1070	**417**	**86.3**	289	288	8.17	8.14
	114-PW-09WR-82.0-20240624	6/24/2024	82	N	JD91036	BEDROCK	< 4.3 UB	242	1070	**380**	**90.0**	285	292	8.10	7.63
114-PW-10WR	114-PW-10WR-82.0-20240627	6/27/2024	82	N	JD91283	BEDROCK	2.9	168	57.1	< 250 U	21.9	327	320	8.81	8.91
	114-PW-10WR-87.0-20240627	6/27/2024	87	N	JD91283	BEDROCK	3.1	170	61.5	< 250 U	24.3	327	325	8.81	8.85

Figures





LEGEND

Garfield Avenue Group Boundary

Map Sources:
1. New Jersey State Plane North American Datum 1983 Coordinates (NAD83), U.S. Survey Feet.
2. Image Source: USGS Topographic Quadrangle: Jersey City, NJ, 1967 - Photo revised - 1981.
NJ = New Jersey
USGS = United States Geological Survey

PPG
GARFIELD AVENUE GROUP
JERSEY CITY, NEW JERSEY
60550261

AECOM

DATE: 3/5/2021 | DRAWN BY: SR | CHECKED BY: FS

FIGURE 1-1
USGS SITE LOCATION MAP

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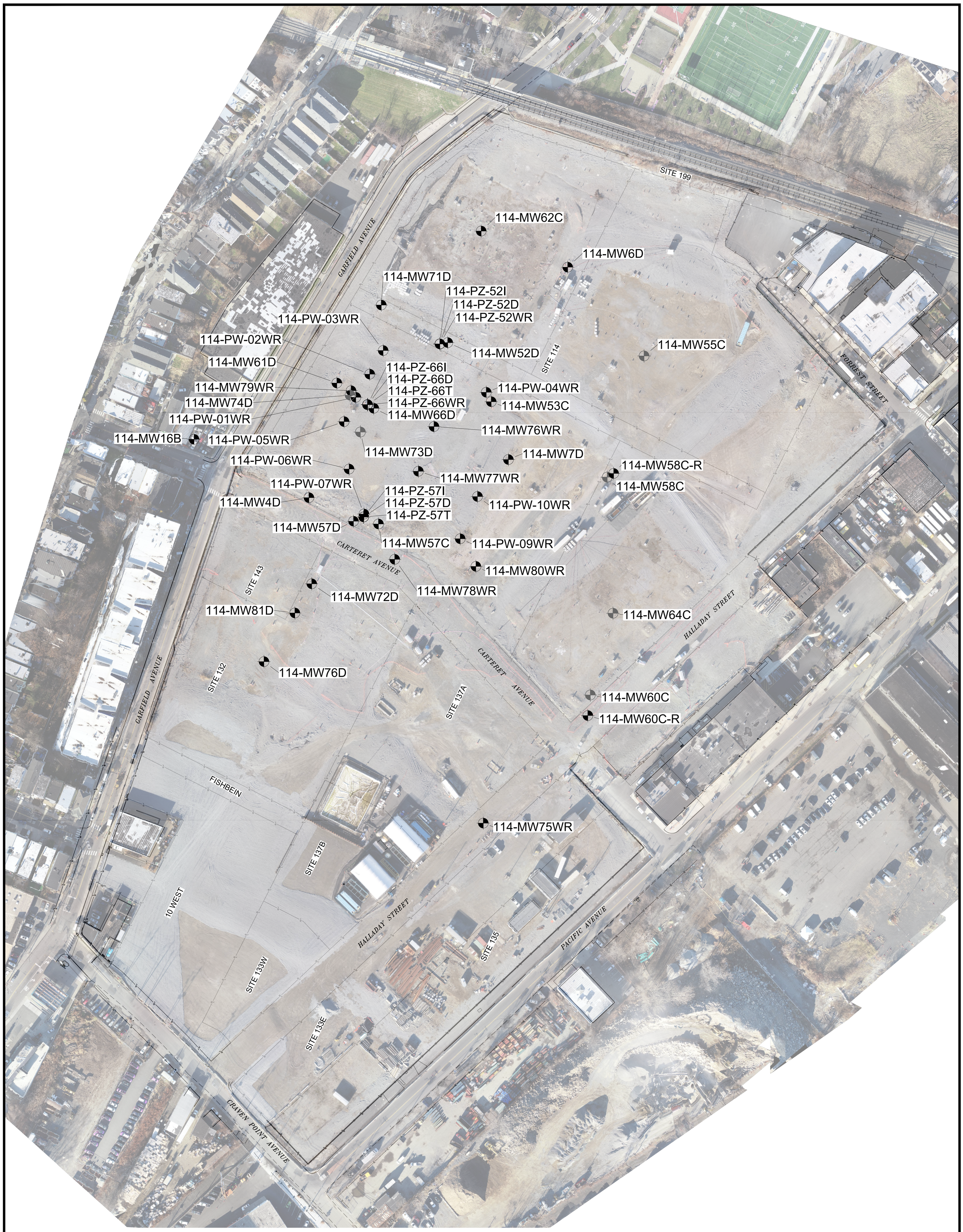
Document Path: Q:\920 GIS\MXD\Groundwater RI\RI\Fig 1-1 USGS Site Loc Map.mxd



LEGEND

- PROPERTY LINE
- SHEET PILE
- NEW JERSEY TRANSIT LIGHT RAIL
- 114-MW72D — WELL/PIEZOMETER ID
- MONITORING WELL/PIEZOMETER LOCATION
- DECOMISSIONED MONITORING WELL/PIEZOMETER LOCATION

Map Sources:

1. Aerial image dated December 20, 2021 sourced from aerial imagery provided by Borbas Surveying and Mapping, LLC.
2. New Jersey State Plane North American Datum 1983 Coordinates, U.S. Survey Feet.
3. Vertical Elevations are in North American Vertical Datum of 1988 (NAVD88), U.S. Survey Feet.

AECOM

N

40 0 80

GRAPHIC SCALE IN FEET

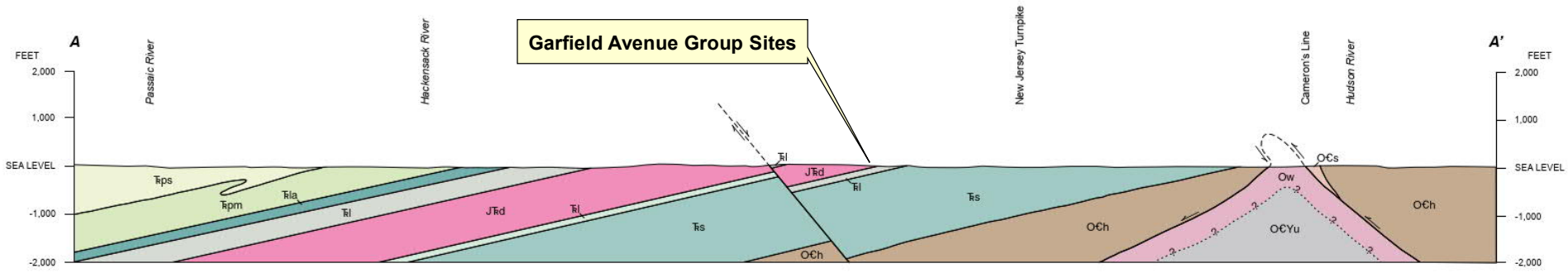
PPG
GARFIELD AVENUE GROUP
GROUNDWATER REMEDIAL INVESTIGATION
JERSEY CITY, NEW JERSEY

DATE: FEBRUARY 2025 | DRWN: ID

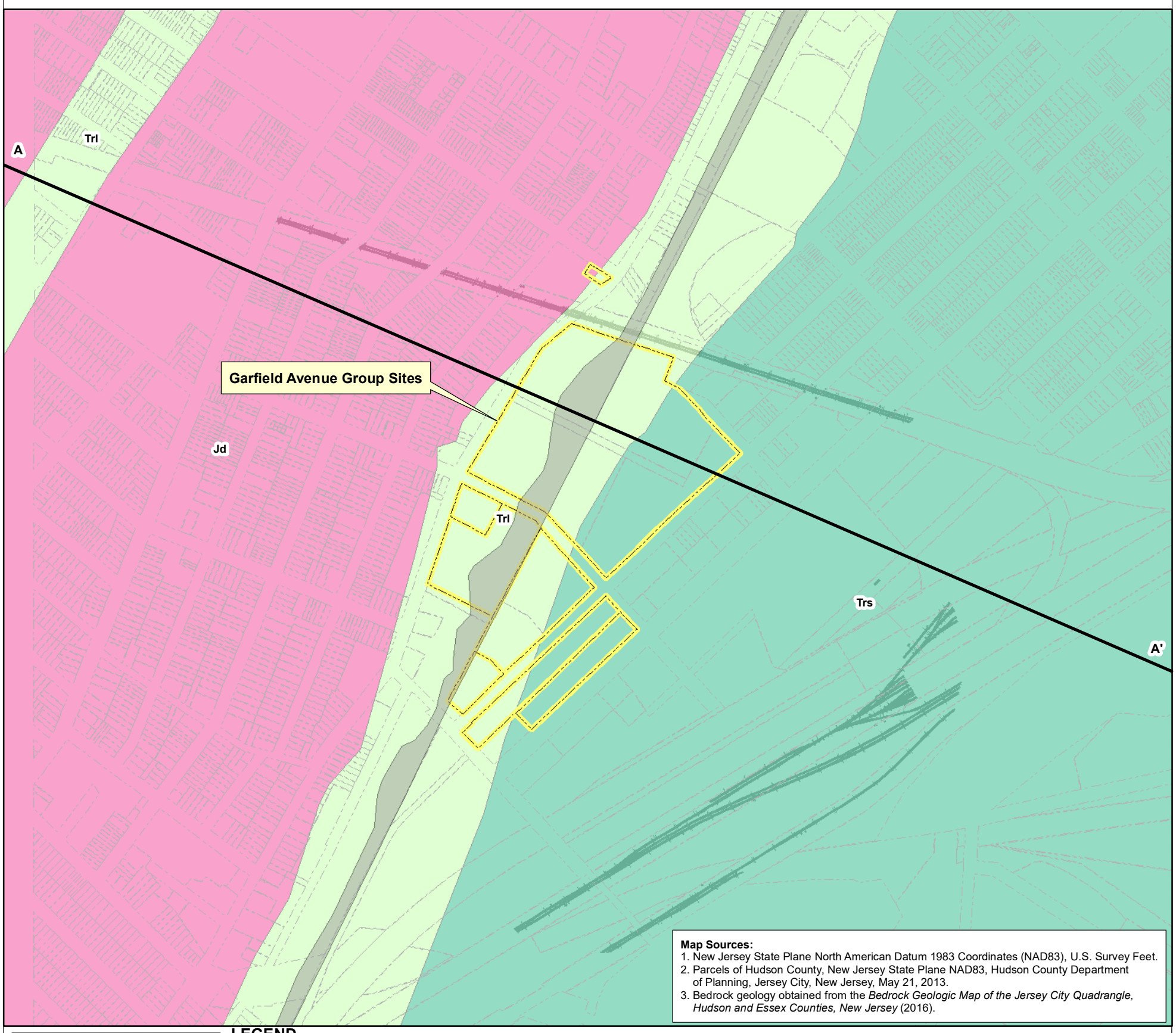
FIGURE 1-2
LOCATIONS OF MONITORING WELLS AND PIEZOMETERS

Filename: C:\USERS\BREEDVELDT\AECOM\PPG - GDS\910 CAD\20 SHEETS\GW\2022 GW RIR\PPG GW RI WEATHERED BEDROCK_020625.DWG

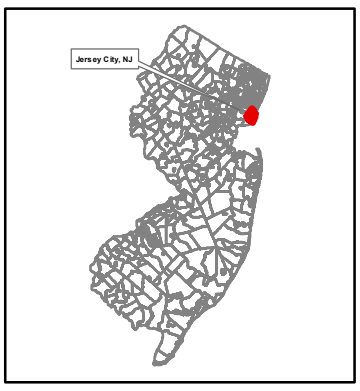
CROSS-SECTIONAL VIEW (A-A')



NOT TO SCALE



Map Sources:
1. New Jersey State Plane North American Datum 1983 Coordinates (NAD83), U.S. Survey Feet.
2. Parcels of Hudson County, New Jersey State Plane NAD83, Hudson County Department of Planning, Jersey City, New Jersey, May 21, 2013.
3. Bedrock geology obtained from the *Bedrock Geologic Map of the Jersey City Quadrangle, Hudson and Essex Counties, New Jersey* (2016).



LEGEND

- Garfield Avenue Group Boundary
- Hudson County Parcels
- Former Morris Canal
- Railroad Tracks

Regional Bedrock Geology

- Jd, Jurassic Diabase
- Trl, Lockatong Formation
- Trs, Stockton Formation

N W E S

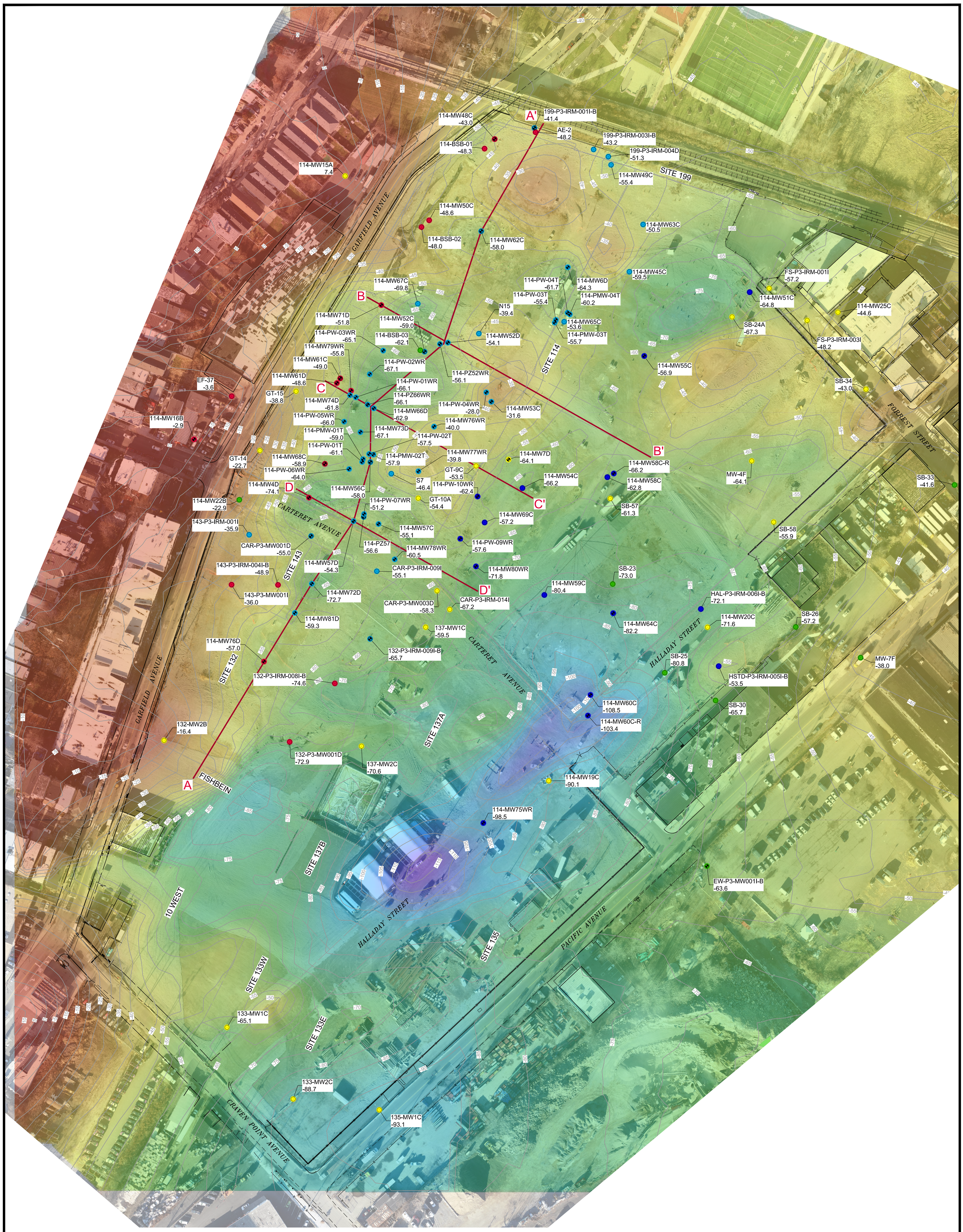
0 250 500 Feet

AECOM

PPG GARFIELD AVENUE GROUP JERSEY CITY, NEW JERSEY 60550261		
DATE: 10/7/2020	DRAWN BY: SR	CHECKED BY: FS

FIGURE 2-1
REGIONAL BEDROCK GEOLOGY

Last Saved By: ravis
Document Path: Q:\920 GIS\MXD\Groundwater RI\RICSM Figures (2020)\Fig 2-2 Regional Bedrock Geology.mxd



Map Sources:

1. New Jersey State Plane North American Datum 1983 Coordinates, U.S. Survey Feet.
2. Vertical Elevations are in North American Vertical Datum of 1988 (NAVD88), U.S. Survey Feet.

Notes:

1. Data used to develop the interpreted top of bedrock surface were obtained from historical investigations conducted by PPG and Public Service Electric and Gas Company (PSEG), borings and monitoring wells completed by PPG as part of the groundwater Remedial Investigation (RI) and groundwater remedial activities, and a geophysical survey (seismic refraction) completed as part of the groundwater RI.
2. The bedrock type for 114-MW7D is noted as indeterminate based on review of Project Area data and published bedrock geology for this area. Information for the bedrock interval noted on the boring log for this well is inconsistent with the information compiled for the Project Area.
3. Bedrock elevations are in feet NAVD88.
4. The top of bedrock surface shown on this figure may represent weathered bedrock in some areas of the site and competent bedrock in other areas of the site as the seismic survey data cannot be used to discriminate between weathered and
5. For wells/borings at which both diabase and the Lockatong Formation were encountered (114-MW4D, 114-MW61D, 114-MW71D, 114-MW76D, and 132-P3-MW001D), the first (shallowest) rock type encountered is depicted on this figure.

Bedrock Elevation (feet)

0
-20
-40
-60
-80
-100
-120

LEGEND

- PROPERTY LINE
- SHEET PILE
- NEW JERSEY TRANSIT LIGHT RAIL
- BEDROCK SURFACE CONTOURS (5-FOOT INTERVAL)
- WELL / PIEZOMETER
- SOIL BORING
- 135-MC1C / -93.10 — WELL / BORING ID; TOP OF BEDROCK ELEVATION
- A — A' — CROSS-SECTION ALIGNMENT

ROCK TYPE OBSERVED AT WELL OR BORING

- IGNEOUS - DIABASE
- INDETERMINATE
- SEDIMENTARY
- SEDIMENTARY - LOCKATONG
- SEDIMENTARY - STOCKTON

AECOM

N

40 0 80
GRAPHIC SCALE IN FEET

PPG
GARFIELD AVENUE GROUP
GROUNDWATER REMEDIAL INVESTIGATION
JERSEY CITY, NEW JERSEY

DATE: FEBRUARY 2025 | DRWN: TEB

FIGURE 2-2
TOP OF BEDROCK SURFACE MAP

Filename: C:\USERS\FREDERIK.SCHUELE\AECOM\PPG - GDS\910 CAD\20 SHEETS\GW\2022 GW RI\R\PPG GW RI BEDROCK SURFACE_020625.DWG

114-MW48C -43.0
199-P3-IRM-001I-B -41.4
AE-2 -48.2
199-P3-IRM-003I-B -43.2
199-P3-IRM-004D -51.3
114-BSB-01 -48.3
114-MW15A 7.4
114-MW49C -55.4
SITE 199
CARFIELD AVENUE
114-MW50C -48.6
114-MW63C -50.5
114-BSB-02 -48.0
114-MW62C -58.0
DIABASE
LOCKATONG
114-MW67C -69.8
114-PW-04T -61.7
114-MW6D -64.3
114-MW45C -59.5
FS-P3-IRM-001I -57.2
114-PW-03T -55.4
114-PMW-04T -60.2
114-MW51C -64.8
114-MW25C -44.6
N15 -39.4
114-MW71D -51.8
114-MW52C -59.0
114-MW65C -53.6
SB-24A -67.3
114-PW-03WR -65.1
114-BSB-03 -62.1
114-MW52D -54.1
114-PMW-03T -55.7
FS-P3-IRM-003I -48.2
114-MW79WR -55.8
114-MW61C -49.0
114-PW-02WR -67.1
SITE 114
114-MW55C -56.9
114-PZ52WR -56.1
EF-37 -3.6
114-MW61D -48.6
114-PW-01WR -66.1
SB-34 -43.0
GT-15 -38.8
114-MW74D -61.8
114-PZ66WR -66.1
114-MW66D -62.9
114-PW-04WR -28.0
114-MW53C -31.6
FORREST STREET
114-MW16B -2.9
114-PW-05WR -66.0
114-MW76WR -40.0
114-PMW-01T -59.0
114-MW73D -67.1
114-PW-02T -57.5
114-PW-01T -61.1
GT-14 -22.7
114-MW68C -58.9
114-PMW-02T -57.9
114-MW77WR -39.8
114-MW7D -64.1
114-MW58C-R -66.2
MW-4F -64.1
SB-33 -41.6
114-PW-06WR -64.0
GT-9C -53.5
S7 -46.4
114-MW54C -66.2
114-MW58C -62.8
DIABASE
114-MW4D -74.1
114-PW-10WR -62.4
114-MW56C -58.0
CARTERET AVENUE
114-MW22B -22.9
114-PW-07WR -51.2
GT-10A -54.4
SB-57 -61.3
114-MW69C -57.2
143-P3-IRM-001I -35.9
114-MW57C -55.1
SB-58 -55.9
STOCKTON
CAR-P3-MW001D -55.0
114-PZ57 -56.6
114-MW78WR -60.5
114-PW-09WR -57.6
SITE 143
143-P3-IRM-004I-B -48.9
114-MW57D -54.3
CAR-P3-IRM-009I -55.1
114-MW80WR -71.8
SB-23 -73.0
114-MW59C -80.4
HAL-P3-IRM-006I-B -72.1
143-P3-MW001I -36.0
114-MW72D -72.7
CAR-P3-MW003D -58.3
CAR-P3-IRM-014I -67.2
SB-26 -57.2
114-MW20C -71.6
114-MW81D -59.3
114-MW64C -82.2
137-MW1C -59.5
114-MW76D -57.0
CARFIELD AVENUE
CARTERET AVENUE
HALLADAY STREET
SITE 132
DIABASE
132-P3-IRM-009I-B -65.7
SB-25 -80.8
MW-7F -38.0
132-P3-IRM-008I-B -74.6
HSTD-P3-IRM-005I-B -53.5
114-MW60C -108.5
SB-30 -65.7
114-MW60C-R -103.4
LOCKATONG
SITE 137A
132-MW2B -16.4
132-P3-MW001D -72.9
137-MW2C -70.6
114-MW19C -90.1
FISHBEIN
DIABASE
114-MW75WR -98.5
SITE 137B
10 WEST
EW-P3-MW001I-B -63.6
HALLADAY STREET
SITE 133W
SITE 135
PACIFIC AVENUE
133-MW1C -65.1
SITE 133E
133-MW2C -88.7
CRAVEN POINT AVENUE
135-MW1C -93.1

30000
25000
20000
15000
10000
Bedrock Velocity (ft/s)

LEGEND

- PROPERTY LINE
- SHEET PILE
- NEW JERSEY TRANSIT LIGHT RAIL
- WELL / PIEZOMETER
- SOIL BORING
- 135-MC1C -93.10 — WELL / BORING ID; TOP OF BEDROCK ELEVATION
- INFERRED CONTACT BETWEEN ROCK TYPES

ROCK TYPE OBSERVED AT WELL OR BORING

- IGNEOUS - DIABASE
- INDETERMINATE
- SEDIMENTARY
- SEDIMENTARY - LOCKATONG
- SEDIMENTARY - STOCKTON

Map Sources:

1. New Jersey State Plane North American Datum 1983 Coordinates, U.S. Survey Feet.

Notes:

1. Bedrock velocities are in feet per second (ft/s).
2. Bedrock elevations are in feet North American Vertical Datum of 1988.
3. For wells/borings at which both diabase and the Lockatong Formation were encountered (114-MW4D, 114-MW61D, 114-MW71D, 114-MW76D, and 132-P3-MW001D), the first (shallowest) rock type encountered is depicted on this figure.

AECOM

N

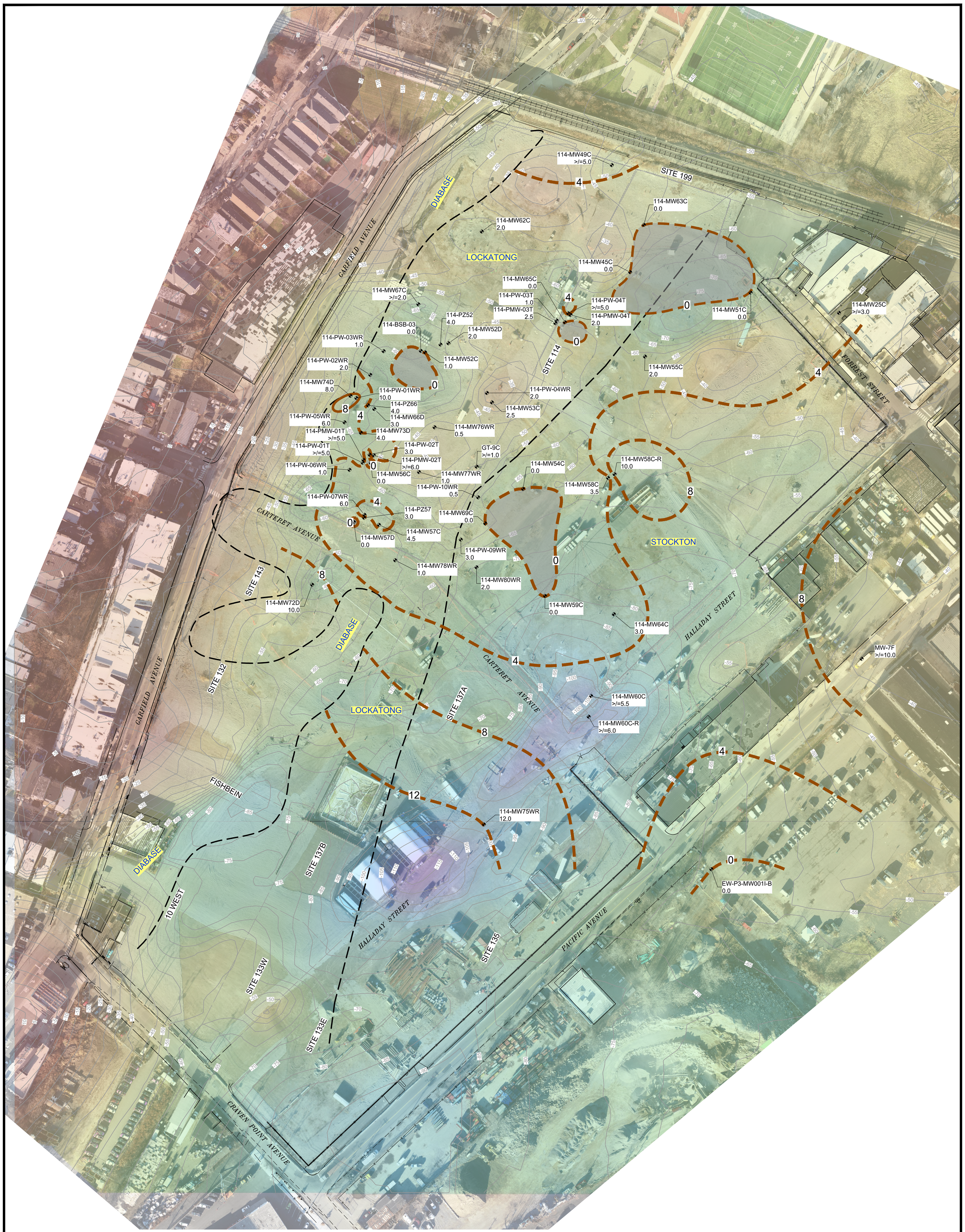
40 0 80
GRAPHIC SCALE IN FEET

PPG
GARFIELD AVENUE GROUP
GROUNDWATER REMEDIAL INVESTIGATION
JERSEY CITY, NEW JERSEY

DATE: FEBRUARY 2025 | DRWN: TEB

FIGURE 2-3
BEDROCK SEISMIC VELOCITY MAP

Filename: C:\USERS\BREEDVELDT\AECOM\PPG - GDS\910 CAD\20 SHEETS\GW\2022 GW RIR\PPG GW RI BEDROCK SURFACE_020625.DWG



Map Sources:

1. New Jersey State Plane North American Datum 1983 Coordinates, U.S. Survey Feet.
2. Vertical Elevations are in North American Vertical Datum of 1988 (NAVD88), U.S. Survey Feet.

Notes:

1. Data used to develop the interpreted top of bedrock surface were obtained from historical investigations conducted by PPG and Public Service Electric and Gas Company (PSEG), borings and monitoring wells completed by PPG as part of the groundwater Remedial Investigation (RI) and groundwater remedial activities, and a geophysical survey (seismic refraction) completed as part of the groundwater RI.
2. Bedrock elevations are in feet NAVD88.
3. Weathered bedrock thickness values are in feet.
4. >/= before a value indicates that the thickness of the weathered bedrock is greater than or equal to the value.
5. The top of bedrock surface shown on this figure may represent weathered bedrock in some areas of the site and competent bedrock in other areas of the site as the seismic survey data cannot be used to discriminate between weathered and competent bedrock.

Bedrock Elevation (feet)
0
-20
-40
-60
-80
-100
-120

LEGEND

- PROPERTY LINE
- SHEET PILE
- NEW JERSEY TRANSIT LIGHT RAIL
- BEDROCK SURFACE CONTOURS (5-FOOT INTERVAL)
- 2 — INFERRED WEATHERED BEDROCK THICKNESS CONTOUR (FEET)
- 114-MW72D — WELL/BORING ID
- MONITORING WELL/BORING
- 2 — THICKNESS OF WEATHERED BEDROCK (FEET)
- INFERRED CONTACT BETWEEN ROCK TYPES
- AREA WHERE WEATHERED BEDROCK WAS NOT OBSERVED

AECOM

N

40 0 80
GRAPHIC SCALE IN FEET

PPG
GARFIELD AVENUE GROUP
GROUNDWATER REMEDIAL INVESTIGATION
JERSEY CITY, NEW JERSEY

DATE: FEBRUARY 2025 | DRWN: TEB

FIGURE 2-4
WEATHERED BEDROCK ISOPACH MAP
FOR THE LOCKATONG AND STOCKTON FORMATIONS

Filename: C:\USERS\FREDERIK.SCHUELE\AECOM\PPG - GDS\910 CAD\20 SHEETS\GW\2022 GW RIR\PPG GW RI WEATHERED BEDROCK_020625.DWG

114-MW62C
6.79

114-PZ-52WR
8.28

114-MW79WR
10.54

114-PZ-66WR
9.88

114-MW76WR
7.41

114-MW53C
6.98

114-MW58C-R
6.16

114-MW57C
8.73

114-MW78WR
6.59

114-MW80WR
6.61

114-MW60C-R
5.09

114-MW75WR
5.32

GARFIELD AVENUE

CARTERET AVENUE

FORREST STREET

HALLADAY STREET

PACIFIC AVENUE

CAVEN POINT AVENUE

Map Sources:

1. Aerial image dated December 20, 2021 sourced from aerial imagery provided by Borbas Surveying and Mapping, LLC.
2. New Jersey State Plane North American Datum 1983 Coordinates, U.S. Survey Feet.
3. Vertical Elevations are in North American Vertical Datum of 1988 (NAVD88), U.S. Survey Feet.

Notes:

1. Data used to develop the interpreted top of bedrock surface were obtained from historical investigations conducted by PPG and Public Service Electric and Gas Company (PSEG), borings and monitoring wells completed by PPG as part of the groundwater Remedial Investigation (RI), and a geophysical survey (seismic refraction) completed as part of the groundwater RI.
2. Bedrock elevations are in feet NAVD88.
3. Groundwater elevations were gauged on November 11-12, 2024 and are listed in NAVD88, feet.
4. The top of bedrock surface shown on this figure may represent weathered bedrock in some areas of the site and competent bedrock in other areas of the site as the seismic survey data cannot be used to discriminate between weathered and competent bedrock.

0
-20
-40
-60
-80
-100
-120

Bedrock Elevation (feet)

LEGEND

- PROPERTY LINE
- SHEET PILE
- NEW JERSEY TRANSIT LIGHT RAIL
- BEDROCK SURFACE CONTOURS (5-FOOT INTERVAL)
- 2 — INFERRED GROUNDWATER ELEVATION CONTOUR
- 114-MW72D — WELL ID
- MONITORING WELL
- 4.50 — GROUNDWATER ELEVATION

AECOM

N

40 0 80

GRAPHIC SCALE IN FEET

PPG
GARFIELD AVENUE GROUP
GROUNDWATER REMEDIAL INVESTIGATION
JERSEY CITY, NEW JERSEY

DATE: FEBRUARY 2025 | DRWN: ID

FIGURE 2-5
WEATHERED BEDROCK POTENTIOMETRIC SURFACE MAP FOR THE LOCKATONG AND STOCKTON FORMATIONS

Filename: C:\USERS\BREEDVELDT\AECOM\PPG - GDS\910 CAD\20 SHEETS\GW\2022 GW RIR\PPG GW RI WBR POTENTIOMETRIC SURFACE_022125.DWG

Date	12/4/2024	12/4/2024
Depth (ft)	74	74
Sample Type	N (T)	N (D)
114-PZ-52WR		
Cr	**1040**	**1850**
Cr(VI)	< 10 U	< 10 U

Date	12/13/2024
Depth (ft)	73
Sample Type	N
114-MW62C	
Cr	< 10 U
Cr(VI)	< 10 U

Date	06/29/2023
Depth (ft)	70.5
Sample Type	N
114-MW55C	
Cr	10.8
Cr(VI)	< 10 UJ

Date	12/4/2024	12/4/2024
Depth (ft)	78	78
Sample Type	N (T)	N (D)
114-MW79WR		
Cr	**698**	**679**
Cr(VI)	4.3 B	7.8 B

Date	12/5/2024	12/5/2024
Depth (ft)	47.9	47.9
Sample Type	N (T)	N (D)
114-MW53C		
Cr	**910**	**742**
Cr(VI)	400	390

Date	12/5/2024	12/5/2024
Depth (ft)	57	57
Sample Type	N (T)	N (D)
114-MW76WR		
Cr	**34000**	**35800**
Cr(VI)	45800	43800

Date	12/13/2024
Depth (ft)	84.5
Sample Type	N
114-MW58C-R	
Cr	< 10 U
Cr(VI)	< 10 UJ

Date	12/6/2024	12/6/2024
Depth (ft)	84	84
Sample Type	N (T)	N (D)
114-PZ-66WR		
Cr	**6690**	**6950**
Cr(VI)	< 10 U	4.4 B

Date	12/18/2024
Depth (ft)	90-94
Sample Type	N
114-MW4D	
Cr	< 10 U
Cr(VI)	< 10 U

Date	06/28/2023
Depth (ft)	94.5
Sample Type	N
114-MW64C	
Cr	14.0
Cr(VI)	< 10 U

Date	12/18/2024
Depth (ft)	117.5
Sample Type	N
114-MW60C-R	
Cr	50.8
Cr(VI)	60

Date	12/4/2024	12/4/2024
Depth (ft)	118	118
Sample Type	N (T)	N (D)
114-MW75WR		
Cr	< 10 U	< 10 U
Cr(VI)	< 10 U	5.5 B

Date	12/5/2024	12/5/2024
Depth (ft)	91.5	91.5
Sample Type	N (T)	N (D)
114-MW80WR		
Cr	6.1 B	< 10 U
Cr(VI)	< 10 U	< 10 U

Date	12/6/2024	12/6/2024
Depth (ft)	70.9	70.9
Sample Type	N (T)	N (D)
114-MW57C		
Cr	**743**	**629**
Cr(VI)	9.0 B	< 10 U

Date	12/5/2024	12/5/2024
Depth (ft)	81	81
Sample Type	N (T)	N (D)
114-MW78WR		
Cr	4 B	3.1 B
Cr(VI)	< 10 U	< 10 U

Map Sources:

1. Aerial image dated December 20, 2021 sourced from aerial imagery provided by Borbas Surveying and Mapping, LLC.
2. New Jersey State Plane North American Datum 1983 Coordinates, U.S. Survey Feet.
3. Vertical Elevations are in North American Vertical Datum of 1988 (NAVD88), U.S. Survey Feet.

Notes:

1. Data used to develop the interpreted top of bedrock surface were obtained from historical investigations conducted by PPG and Public Service Electric and Gas Company (PSEG), borings and monitoring wells completed by PPG as part of the groundwater Remedial Investigation (RI), and a geophysical survey (seismic refraction) completed as part of the groundwater RI.
2. Bedrock elevations are in feet NAVD88.
3. Concentrations are presented in units of micrograms per liter (µg/L).
4. Bold and shaded value indicates the concentration is greater than the NJDEP GWQS of 70 µg/L for total Cr.
5. Sample depths are relative to the top of the well casing (PVC for monitoring wells, steel for open borehole bedrock wells and FLUTe ports).
6. The top of bedrock surface shown on this figure may represent weathered bedrock in some areas of the site and competent bedrock in other areas of the site as the seismic survey data cannot be used to discriminate between weathered and competent bedrock.

Abbreviations:

Cr = total chromium
Cr(VI) = hexavalent chromium
D = dissolved fraction (field-filtered)
FD = field duplicate sample
ft = feet
GWQS = NJDEP groundwater quality standard
J = Indicates the result is an estimated value; the associated numerical value is an approximate concentration of the analyte in the sample.
J+ = Indicates the analyte was positively identified; the associated numerical value is an estimated quantity with a potential high bias.
JB = The analyte concentration is greater than three (3) times, but less than or equal to ten (10) times the concentration in the associated method/prep blank. The presence of that analyte in the sample is considered "real." The concentration is quantitatively qualified (JB) due to method blank contamination.
N = normal environmental sample
NJDEP = New Jersey Department of Environmental Protection
T = total fraction (unfiltered)
U = Indicates the analyte was not detected in the sample above the laboratory reporting limit.J+ = Indicates the analyte was positively identified; the associated numerical value is an estimated quantity with a potential high bias.
UB = The analyte concentration is less than or equal to three (3) times the concentration in the associated method/prep blank. The presence of the analyte in the sample is negated (UB) due to laboratory contamination. The presence of the analyte in the sample is negated (UB) due to laboratory contamination.
ug/l = micrograms per liter.
UJ = Indicates the analyte was not detected above the laboratory reporting limit and the reporting limit was approximate.

Bedrock Elevation (feet)
0
-20
-40
-60
-80
-100
-120

LEGEND

- PROPERTY LINE
- SHEET PILE
- NEW JERSEY TRANSIT LIGHT RAIL
- BEDROCK SURFACE CONTOURS (5-FOOT INTERVAL)
- 70 — INFERRED TOTAL CHROMIUM ISOPLETH (ug/L)
- 114-MW72D — WELL ID
- MONITORING WELL (Cr < GWQS)
- MONITORING WELL (Cr > GWQS)
- INFERRED CONTACT BETWEEN ROCK TYPES

AECOM

N

40 0 80
GRAPHIC SCALE IN FEET

PPG
GARFIELD AVENUE GROUP
GROUNDWATER REMEDIAL INVESTIGATION
JERSEY CITY, NEW JERSEY

DATE: JUNE 2025 | DRWN: ID

FIGURE 4-1
DISTRIBUTION OF TOTAL CHROMIUM IN WEATHERED BEDROCK

Filename: C:\USERS\FREDERIK.SCHUELE\AECOM\PPG - GDS\910 CAD\20 SHEETS\GW\2022 GW RIR\PPG GW RI WEATHERED BEDROCK_020625.DWG

Date	12/14/2021	12/14/2021	12/14/2021	12/15/2021	12/21/2021
Depth (ft)	119	126	132.5	137	141.5
Sample Type	N	N	N	N	N
114-MW71D					
Cr	42.9	53.5	54.8	44.2	29.0
Cr(VI)	17.3	25.2	19.5	< 21.9 UB	< 10.0 U

Date	08/27/2020	08/27/2020	08/27/2020	08/26/2020	08/26/2020
Depth (ft)	88.5	93.5	98.5	103.5	108.5
Sample Type	N	N	N	N	N
114-MW6D					
Cr	< 10.0 U	< 10.0 U	< 10.0 U	< 10.0 U	3.4 J
Cr(VI)	< 10.0 U	< 10.0 U	< 10.0 U	< 10.0 UJ	< 10.0 UJ

Date	12/18/2024	12/18/2024	12/18/2024
Depth (ft)	80-83	87-90	102-105
Sample Type	N	N	N
114-MW52D			
Cr	**884**	19.6	8.2 J
Cr(VI)	67	< 10 U	< 10 U

Date	12/13/2024	12/17/2024	12/17/2024	12/17/2024	12/18/2024	12/18/2024
Depth (ft)	117	121	121	126	131	136
Sample Type	N	N	FD	N	N	N
114-MW61D						
Cr	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U
Cr(VI)	< 10 UJ	< 10 U	4.2 J	< 10 U	< 10 U	3.4 J

Date	12/17/2024	12/17/2024	12/17/2024	12/17/2024	12/17/2024
Depth (ft)	91-97	107-111	118-123	124-129	137-140
Sample Type	N	N	N	N	N
114-MW66D					
Cr	**2540**	39.1	40.0	6.0 J	4.1 J
Cr(VI)	3300	< 10 U	< 10 U	< 10 U	< 10 U

Date	08/21/2020
Depth (ft)	33
Sample Type	N
114-MW16B	
Cr	2.8 J
Cr(VI)	< 10.0 U

Date	08/31/2020
Depth (ft)	87.5
Sample Type	N
114-MW7D	
Cr	3.6 J
Cr(VI)	< 10.0 U

Date	12/18/2024	12/18/2024	12/18/2024
Depth (ft)	98-102	111-115	121-125
Sample Type	N	N	N
114-MW4D			
Cr	< 10 U	< 10 U	< 10 U
Cr(VI)	< 10 U	12	13

Date	12/17/2024	12/17/2024	12/17/2024	12/17/2024	12/17/2024
Depth (ft)	102-106	102-106	110-114	116-119	123-126
Sample Type	N (T)	N (D)	N (T)	N (T)	N (T)
114-MW72D					
Cr	**517**	**407**	**259**	**145**	**103**
Cr(VI)	530	520	340	150	120

Date	12/16/2024	12/16/2024	12/17/2024	12/17/2024	12/18/2024	12/18/2024
Depth (ft)	103.75	108.75	113.75	118.75	123.75	123.75
Sample Type	N	N	N	N	N	FD
114-MW76D						
Cr	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U
Cr(VI)	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U

Date	6/21/2024	6/21/2024	6/21/2024	6/21/2024
Depth (ft)	87.5-91.5	96.5-100.5	104-108	109-113
Sample Type	N	N	N	N
114-MW57D				
Cr	7.9 J	8.6 J	8.6 J	3.6 J
Cr(VI)	< 10 U	< 10 U	< 10 U	< 10 U

Date	2/14/2025	2/17/2025	2/18/2025	2/18/2025	2/19/2025	2/19/2025
Depth (ft)	103.5	107.5	115	115	123	127
Sample Type	N	N	N	FD	N	N
114-MW81D						
Cr	< 10 U	3.1	< 10 U	< 10 U	< 10 UB	< 10 U
Cr(VI)	< 10 U	12 J	3.6 J	7.2 J	< 10 U	< 10 U

Date	12/18/2024	12/18/2024	12/18/2024	12/18/2024	12/18/2024	12/18/2024	12/18/2024	12/18/2024
Depth (ft)	87.5-91.5	87.5-91.5	96.5-100.5	96.5-100.5	104-108	104-108	109-113	109-113
Sample Type	N (T)	N (D)	N (T)	N (D)	N (T)	N (D)	N (T)	N (D)
114-MW57D								
Cr	**78.4**	**63.7**	**67.3**	--	**87.4**	--	**77.0**	--
Cr(VI)	< 10 U	3.4 J	< 10 U	< 10 U	< 10 U	5.8 J	4.6 J	< 10 U

Map Sources:

1. Aerial image dated December 20, 2021 sourced from aerial imagery provided by Borbas Surveying and Mapping, LLC.
2. New Jersey State Plane North American Datum 1983 Coordinates, U.S. Survey Feet.
3. Vertical Elevations are in North American Vertical Datum of 1988 (NAVD88), U.S. Survey Feet.

Notes:

1. Data used to develop the interpreted top of bedrock surface were obtained from historical investigations conducted by PPG and Public Service Electric and Gas Company (PSEG), borings and monitoring wells completed by PPG as part of the groundwater Remedial Investigation (RI), and a geophysical survey (seismic refraction) completed as part of the groundwater RI.
2. Bedrock elevations are in feet NAVD88.
3. Concentrations are presented in units of micrograms per liter (µg/L).
4. Bold and shaded value indicates the concentration is greater than the NJDEP GWQS of 70 µg/L for total Cr.
5. Sample depths are relative to the top of the well casing (PVC for monitoring wells, steel for open borehole bedrock wells and FLUTe ports).
6. The top of bedrock surface shown on this figure may represent weathered bedrock in some areas of the site and competent bedrock in other areas of the site as the seismic survey data cannot be used to discriminate between weathered and competent bedrock.

Abbreviations:

Cr = total chromium
Cr(VI) = hexavalent chromium
D = dissolved fraction (field-filtered)
FD = field duplicate sample
ft = feet
GWQS = NJDEP groundwater quality standard
J = Indicates the result is an estimated value; the associated numerical value is an approximate concentration of the analyte in the sample.
J+ = Indicates the analyte was positively identified; the associated numerical value is an estimated quantity with a potential high bias.
JB = The analyte concentration is greater than three (3) times, but less than or equal to ten (10) times the concentration in the associated method/prep blank. The presence of that analyte in the sample is considered "real." The concentration is quantitatively qualified (JB) due to method blank contamination.
N = normal environmental sample
NJDEP = New Jersey Department of Environmental Protection
T = total fraction (unfiltered)
U = Indicates the analyte was not detected in the sample above the laboratory reporting limit.J+ = Indicates the analyte was positively identified; the associated numerical value is an estimated quantity with a potential high bias.
UB = The analyte concentration is less than or equal to three (3) times the concentration in the associated method/prep blank. The presence of the analyte in the sample is negated (UB) due to laboratory contamination. The presence of the analyte in the sample is negated (UB) due to laboratory contamination.
ug/l = micrograms per liter.
UJ = Indicates the analyte was not detected above the laboratory reporting limit and the reporting limit was approximate.

Bedrock Elevation (feet)
0
-20
-40
-60
-80
-100
-120

LEGEND
- PROPERTY LINE
- SHEET PILE
- NEW JERSEY TRANSIT LIGHT RAIL
- BEDROCK SURFACE CONTOURS (5-FOOT INTERVAL)
- 70 — INFERRED TOTAL CHROMIUM ISOPLETH (ug/L)
- 114-MW72D — WELL ID
- MONITORING WELL (Cr < GWQS)
- MONITORING WELL (Cr > GWQS)
- INFERRED CONTACT BETWEEN ROCK TYPES

AECOM

N

40 0 80
GRAPHIC SCALE IN FEET

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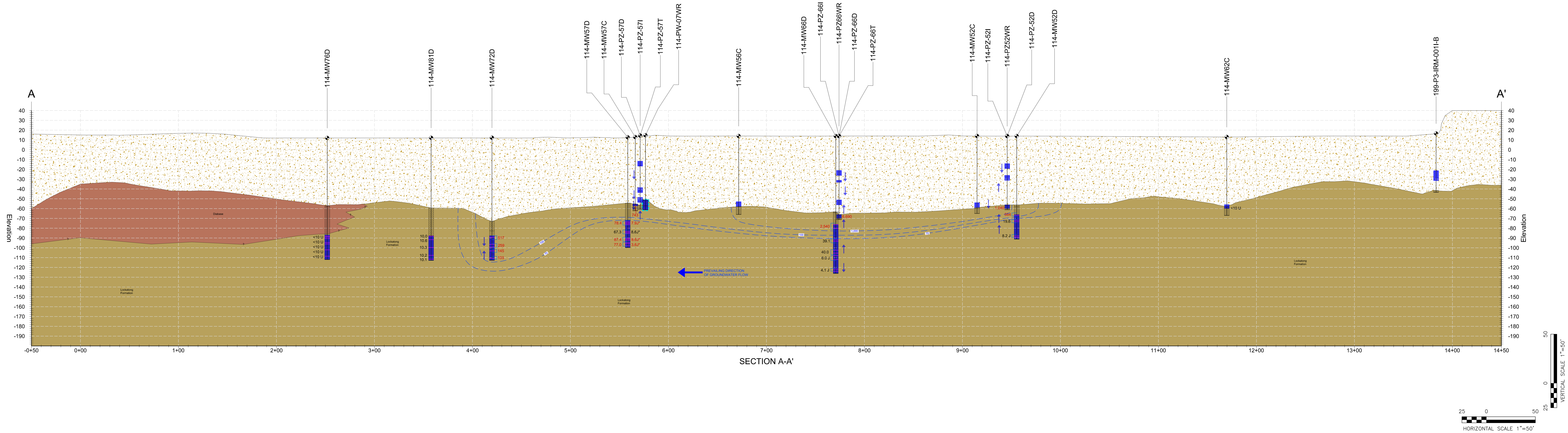
GROUNDWATER REMEDIAL INVESTIGATION
JERSEY CITY, NEW JERSEY

DATE: JUNE 2025 | DRWN: ID

FIGURE 4-2
DISTRIBUTION OF TOTAL CHROMIUM IN COMPETENT BEDROCK

Filename: C:\USERS\FREDERIK.SCHUELE\AECOM\PPG - GDS\910 CAD\20 SHEETS\GW\2022 GW RIR\PPG_DISTRIBUTIONOFCRINBEDROCK_062025.DWG



LEGEND

114–MW52D	MONITORING WELL
	WELL CASING
	OPEN BOREHOLE/ SCREENED INTERVAL
2.3	Cr CONCENTRATION < GWQS
500	Cr CONCENTRATION > GWQS
70	INFERRED TOTAL CHROMIUM ISOPLETH (ug/L)
	DIRECTION OF VERTICAL HYDRAULIC GRADIENT BASED ON MARCH 21, 2022 GAUGING DATA
	FRACTURE TARGETED FOR SAMPLING
	FLUTE PORT INTERVAL
	INDICATES THAT THE WELL IS AN INJECTION WELL
	UNCONSOLIDATED OVERBURDEN
	BEDROCK: LOCKATONG FORMATION
	BEDROCK: STOCKTON FORMATION
	BEDROCK: DIABASE
	WEATHERED BEDROCK
	COMPETENT BEDROCK

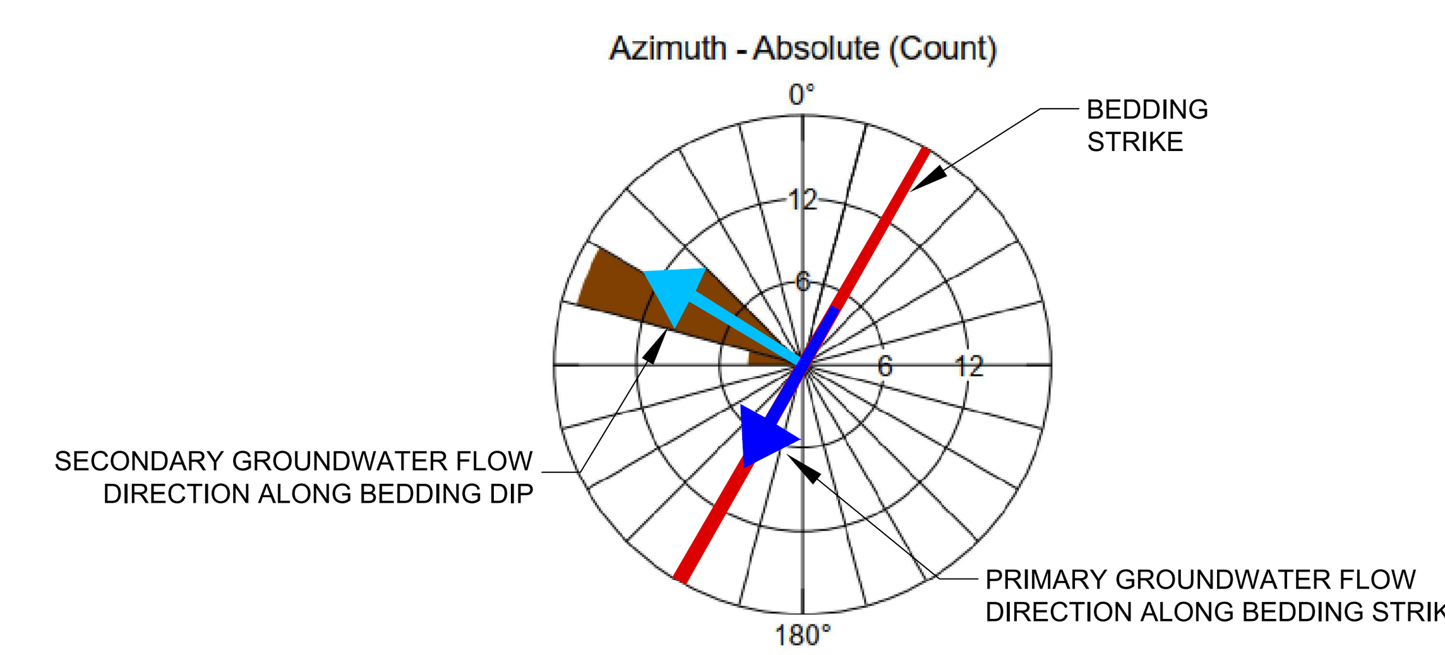
NOTES:

1. ELEVATIONS ARE SHOWN IN FT NAVD88.
2. GROUNDWATER ANALYTICAL RESULTS ARE FROM THE ANALYSIS OF UNFILTERED SAMPLES (TOTAL PHASE), UNLESS NOTED OTHERWISE.
3. GROUNDWATER ANALYTICAL RESULTS ARE PRESENTED IN UNITS OF ug/L.
4. THE APPROXIMATE DIP ANGLE OF THE LOCKATONG FORMATION IS BASED ON THE FINDINGS OF THE BOREHOLE GEOPHYSICAL INVESTIGATION.
5. HORIZONTAL AND VERTICAL SCALES ARE 1:1 (NO VERTICAL EXAGGERATION).
6. THE GWQS FOR TOTAL CHROMIUM IS 70 ug/L.
7. THE TOTAL CHROMIUM RESULTS PRESENTED ON THIS FIGURE FOR EACH WELL WERE TAKEN FROM FIGURE 4-1.
8. AT WELL 114-MW57D, RESULTS FROM JUNE 2024 (IDENTIFIED BY AN *) AND DECEMBER 2024 ARE SHOWN. THE JUNE 2024 RESULTS ARE REPRESENTATIVE OF RI-COMPLETE CONDITIONS PRIOR TO IMPLEMENTATION OF THE BEDROCK GROUNDWATER REMEDY, THEREFORE THESE RESULTS WERE USED TO DEFINE THE CHROMIUM CONTOURS (SEE DISCUSSION IN SECTION 4.1.2).

ABBREVIATIONS:

ug/L	MICROGRAMS PER LITER
Cr	TOTAL CHROMIUM
FT	FEET
FT NAVD88	FEET NORTH AMERICAN VERTICAL DATUM OF 1988
J	INDICATES THE RESULT IS AN ESTIMATED VALUE; THE ASSOCIATED NUMERICAL VALUE IS AN APPROXIMATE CONCENTRATION OF THE ANALYTE IN THE SAMPLE
GWQS	NJDEP GROUNDWATER QUALITY STANDARD
NJDEP	NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION
PVC	POLYVINYL CHLORIDE
U	INDICATES THE ANALYTE WAS NOT DETECTED IN THE SAMPLE ABOVE THE LABORATORY REPORTING LIMIT

ILLUSTRATION OF GROUNDWATER FLOW DIRECTIONS WITHIN THE LOCKATONG FORMATION AND DIP AZIMUTH ROSE DIAGRAM OF BEDDING FOR THE LOCKATONG FORMATION AT 114-MW6D



THE PREVAILING DIRECTIONS OF GROUNDWATER FLOW WITHIN THE LOCKATONG FORMATION ARE TO THE SOUTH/SOUTHWEST ALONG BEDDING STRIKE (PRIMARY) AND TO THE WEST DOWN BEDDING DIP (SECONDARY).

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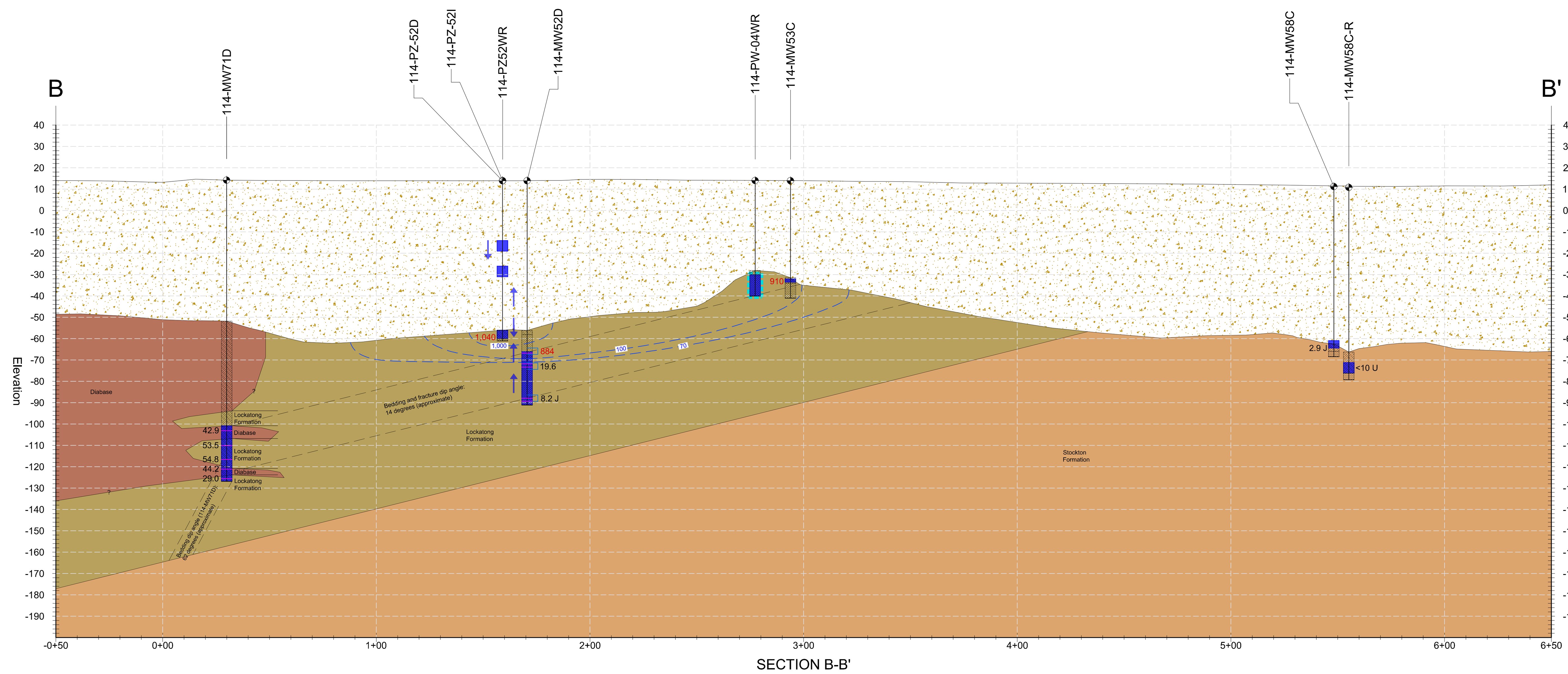
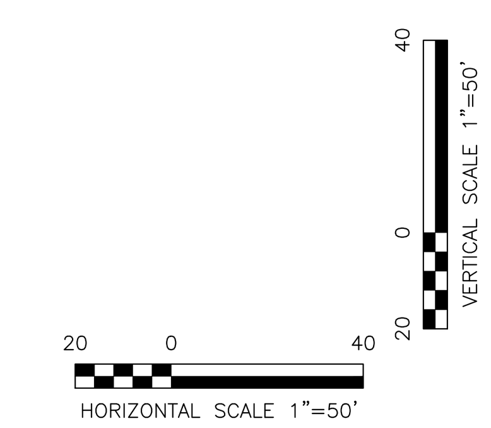
DATE: JUNE 2025 DRWN: FS

CROSS-SECTION A-A' WITH TOTAL CHROMIUM RESULTS IN BEDROCK

FIGURE 4-3A





LEGEND

114–MW52D	MONITORING WELL
	WELL CASING
	OPEN BOREHOLE/ SCREENED INTERVAL
2.3	Cr CONCENTRATION < GWQS
500	Cr CONCENTRATION > GWQS
------70------	INFERRED TOTAL CHROMIUM ISOPLETH (ug/L)
	DIRECTION OF VERTICAL HYDRAULIC GRADIENT BASED ON MARCH 21, 2022 GAUGING DATA
	FRACTURE TARGETED FOR SAMPLING
	FLUTE PORT INTERVAL
	INDICATES THAT THE WELL IS AN INJECTION WELL
	UNCONSOLIDATED OVERBURDEN
	BEDROCK: LOCKATONG FORMATION
	BEDROCK: STOCKTON FORMATION
	BEDROCK: DIABASE
	WEATHERED BEDROCK
	COMPETENT BEDROCK

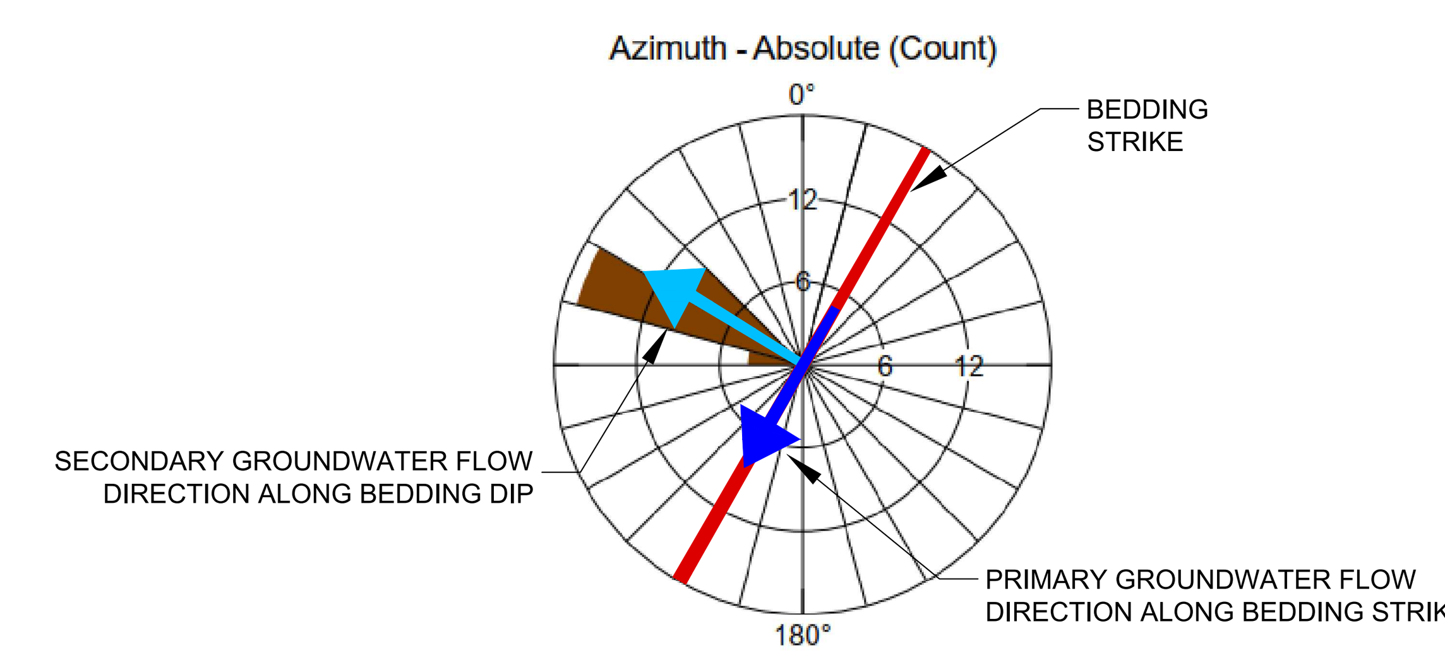
NOTES:

1. ELEVATIONS ARE SHOWN IN FT NAVD88.
2. GROUNDWATER ANALYTICAL RESULTS ARE FROM THE ANALYSIS OF UNFILTERED SAMPLES (TOTAL PHASE), UNLESS NOTED OTHERWISE.
3. GROUNDWATER ANALYTICAL RESULTS ARE PRESENTED IN UNITS OF ug/L.
4. THE APPROXIMATE DIP ANGLE OF THE LOCKATONG FORMATION IS BASED ON THE FINDINGS OF THE BOREHOLE GEOPHYSICAL INVESTIGATION.
5. HORIZONTAL AND VERTICAL SCALES ARE 1:1 (NO VERTICAL EXAGGERATION).
6. THE GWQS FOR TOTAL CHROMIUM IS 70 ug/L.
7. THE TOTAL CHROMIUM RESULTS PRESENTED ON THIS FIGURE FOR EACH WELL WERE TAKEN FROM FIGURE 4-1.

ABBREVIATIONS:

ug/L	MICROGRAMS PER LITER
Cr	TOTAL CHROMIUM
FT	FEET
FT NAVD88	FEET NORTH AMERICAN VERTICAL DATUM OF 1988
J	INDICATES THE RESULT IS AN ESTIMATED VALUE; THE ASSOCIATED NUMERICAL VALUE IS AN APPROXIMATE CONCENTRATION OF THE ANALYTE IN THE SAMPLE
GWQS	NJDEP GROUNDWATER QUALITY STANDARD
NJDEP	NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION
PVC	POLYVINYL CHLORIDE
U	INDICATES THE ANALYTE WAS NOT DETECTED IN THE SAMPLE ABOVE THE LABORATORY REPORTING LIMIT

ILLUSTRATION OF GROUNDWATER FLOW DIRECTIONS WITHIN THE LOCKATONG FORMATION AND DIP AZIMUTH ROSE DIAGRAM OF BEDDING FOR THE LOCKATONG FORMATION AT 114-MW6D



THE PREVAILING DIRECTIONS OF GROUNDWATER FLOW WITHIN THE LOCKATONG FORMATION ARE TO THE SOUTH/SOUTHWEST ALONG BEDDING STRIKE (PRIMARY) AND TO THE WEST DOWN BEDDING DIP (SECONDARY).

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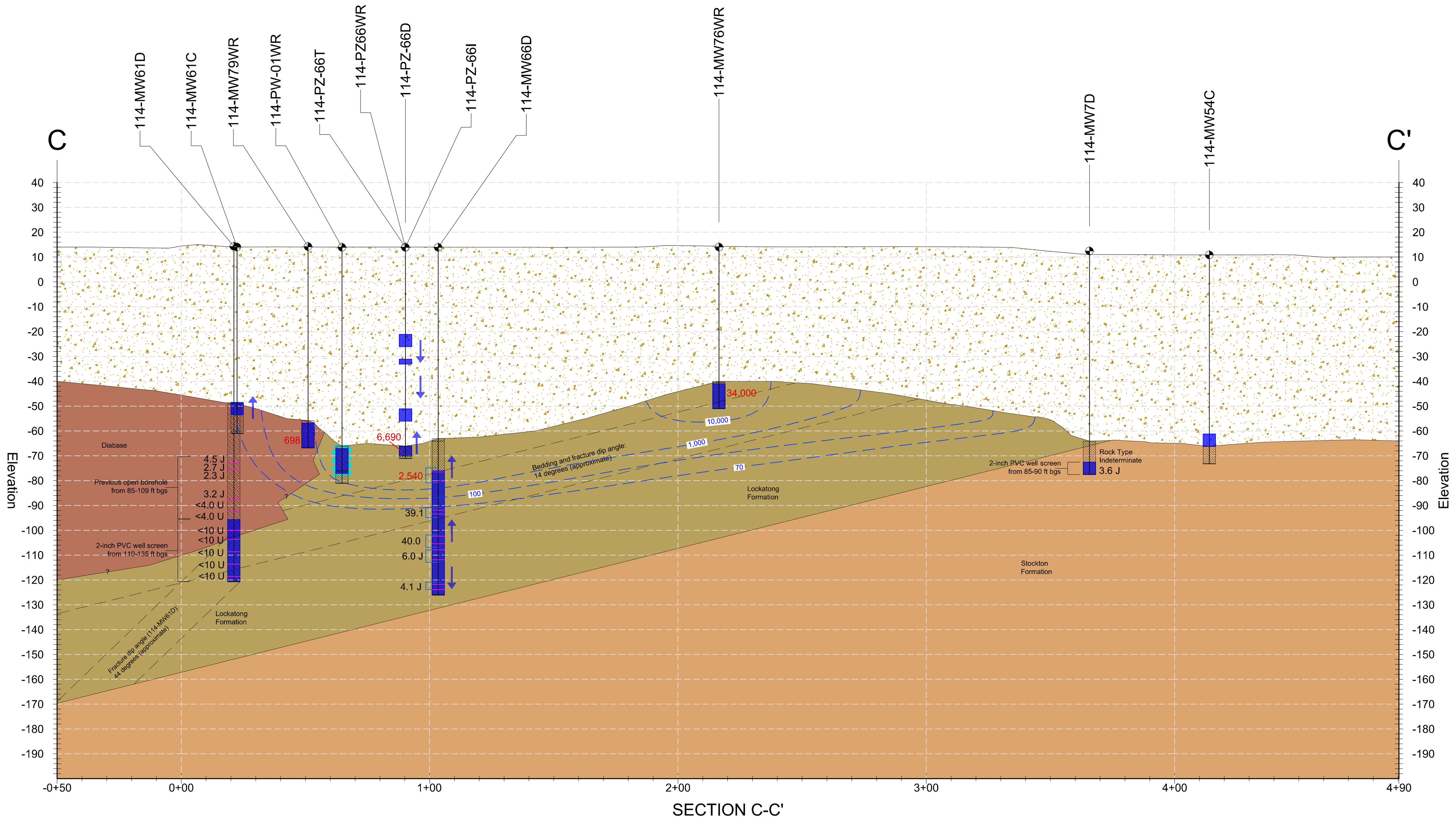
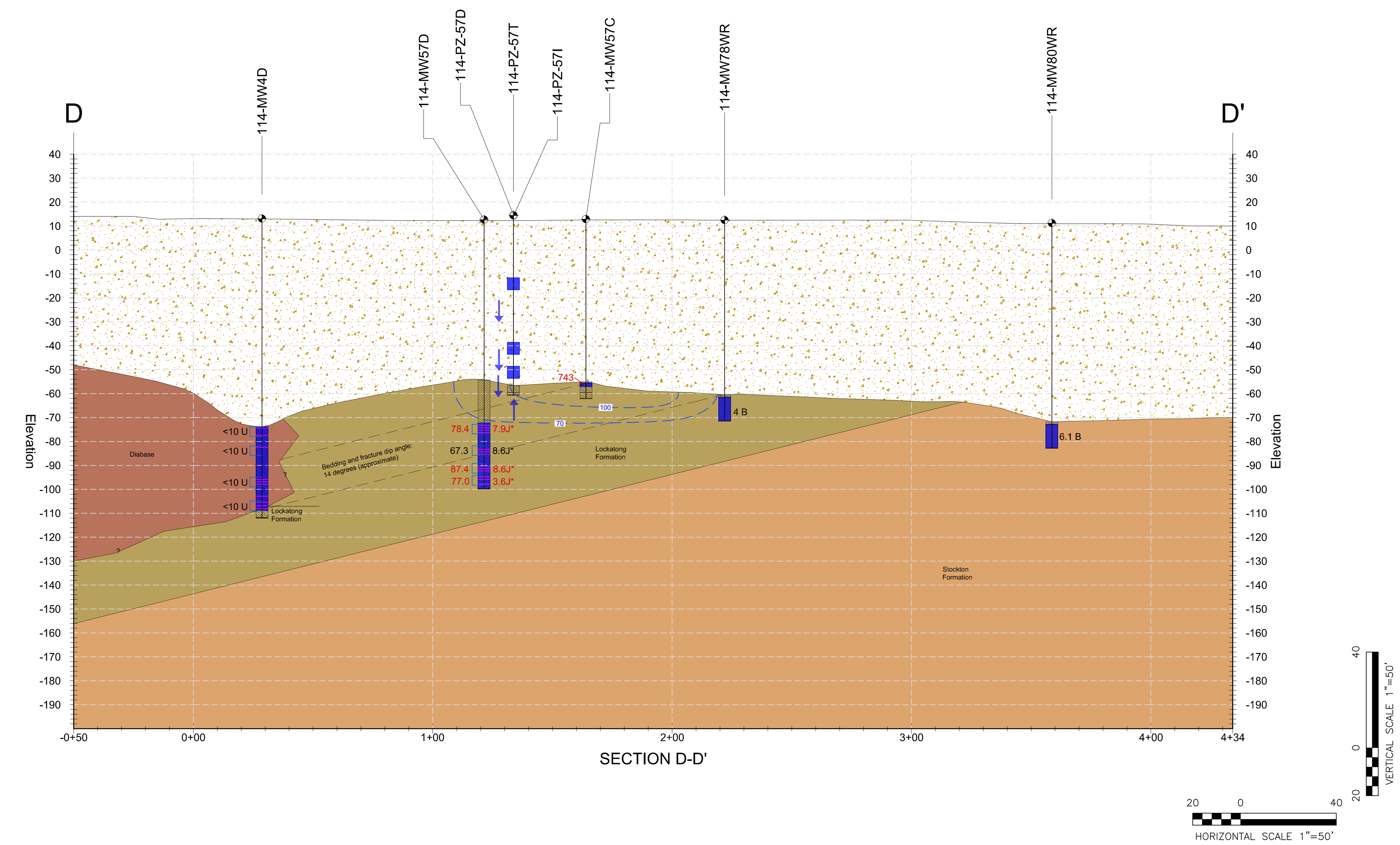
DATE: JUNE 2025 DRWN: FS

CROSS-SECTION B-B' WITH TOTAL CHROMIUM RESULTS IN BEDROCK

FIGURE 4-3B





LEGEND

114−MW52D	MONITORING WELL
	WELL CASING
	OPEN BOREHOLE/ SCREENED INTERVAL
2.3	Cr CONCENTRATION < GWQS
500	Cr CONCENTRATION > GWQS
70	INFERRED TOTAL CHROMIUM ISOPLETH (ug/L)
	DIRECTION OF VERTICAL HYDRAULIC GRADIENT BASED ON MARCH 21, 2022 GAUGING DATA
	FRACTURE TARGETED FOR SAMPLING
	FLUTE PORT INTERVAL
	INDICATES THAT THE WELL IS AN INJECTION WELL
	UNCONSOLIDATED OVERBURDEN
	BEDROCK: LOCKATONG FORMATION
	BEDROCK: STOCKTON FORMATION
	BEDROCK: DIABASE
	WEATHERED BEDROCK
	COMPETENT BEDROCK

NOTES:

1. ELEVATIONS ARE SHOWN IN FT NAVD88.
2. GROUNDWATER ANALYTICAL RESULTS ARE FROM THE ANALYSIS OF UNFILTERED SAMPLES (TOTAL PHASE), UNLESS NOTED OTHERWISE.
3. GROUNDWATER ANALYTICAL RESULTS ARE PRESENTED IN UNITS OF ug/L.
4. THE APPROXIMATE DIP ANGLE OF THE LOCKATONG FORMATION IS BASED ON THE FINDINGS OF THE BOREHOLE GEOPHYSICAL INVESTIGATION.
5. HORIZONTAL AND VERTICAL SCALES ARE 1:1 (NO VERTICAL EXAGGERATION).
6. THE GWQS FOR TOTAL CHROMIUM IS 70 ug/L.
7. THE TOTAL CHROMIUM RESULTS PRESENTED ON THIS FIGURE FOR EACH WELL WERE TAKEN FROM FIGURE 4-1.
8. AT WELL 114-MW57D, RESULTS FROM JUNE 2024 (IDENTIFIED BY AN *) AND DECEMBER 2024 ARE SHOWN. THE JUNE 2024 RESULTS ARE REPRESENTATIVE OF RI-COMPLETE CONDITIONS PRIOR TO IMPLEMENTATION OF THE BEDROCK GROUNDWATER REMEDY, THEREFORE THESE RESULTS WERE USED TO DEFINE THE CHROMIUM CONTOURS (SEE DISCUSSION IN SECTION 4.1.2).

ABBREVIATIONS:

ug/L	MICROGRAMS PER LITER
Cr	TOTAL CHROMIUM
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PVC	POLYVINYL CHLORIDE
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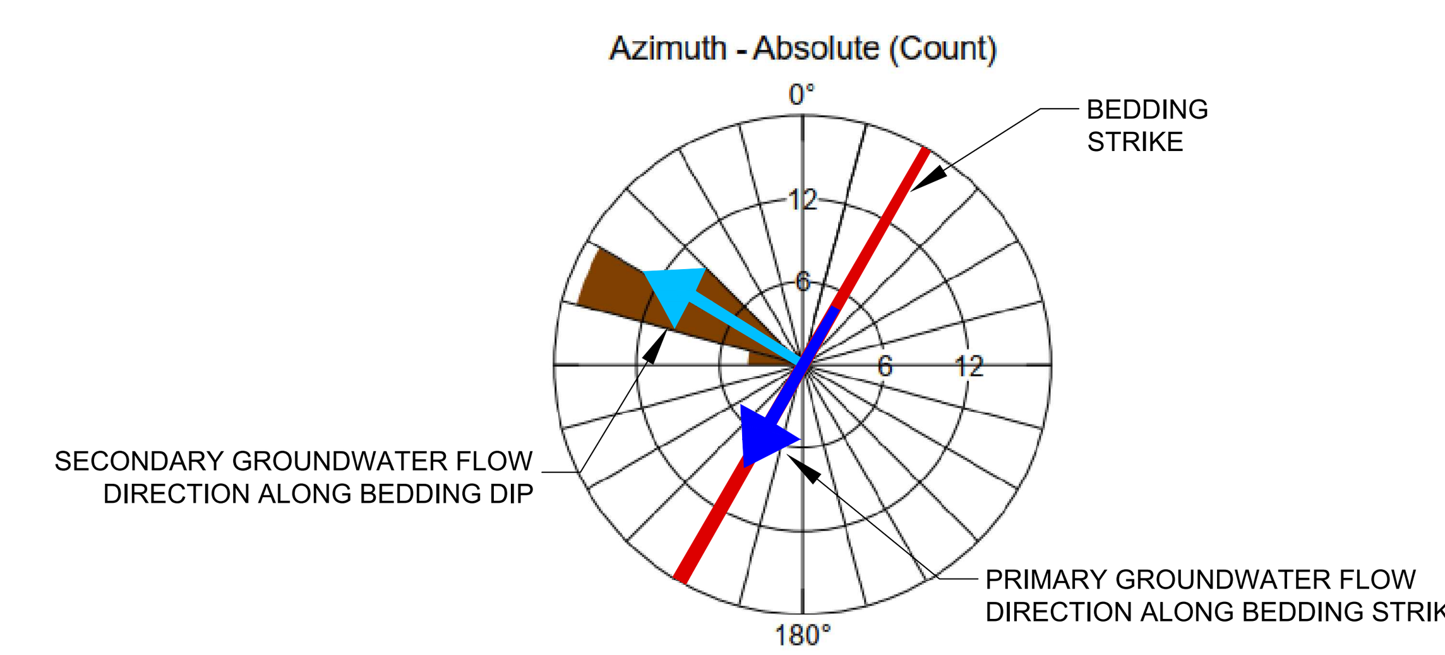
ILLUSTRATION OF GROUNDWATER FLOW DIRECTIONS WITHIN THE LOCKATONG FORMATION AND DIP AZIMUTH ROSE DIAGRAM OF BEDDING FOR THE LOCKATONG FORMATION AT 114-MW6D



THE PREVAILING DIRECTIONS OF GROUNDWATER FLOW WITHIN THE LOCKATONG FORMATION ARE TO THE SOUTH/SOUTHWEST ALONG BEDDING STRIKE (PRIMARY) AND TO THE WEST DOWN BEDDING DIP (SECONDARY).

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CROSS-SECTIONS C-C' AND D-D' WITH TOTAL CHROMIUM RESULTS IN BEDROCK

FIGURE 4-3C