14-54 31ST AVENUE

QUEENS, NEW YORK

Remedial Action Report

NYC VCP Project Number: 20CVCP075Q

E-Designation Project Number: 20TMP0417Q, 20EHAZ098Q

Prepared For:

K&J International Realty, LLC

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Prepared By:

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NOVEMBER 2022

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LIST OF ACRONYMS

Acronym	Definition
CAMP	Community Air Monitoring Plan
DER-10	NYS DEC Division of Environmental Remediation Technical Guidance Manual 10
EC	Engineering Control
HASP	Health and Safety Plan
IC	Institutional Control
NYC VCP	New York City Voluntary Cleanup Program
NYC DEP	New York City Department of Environmental Protection
NYC DOHMH	New York City Department of Health and Mental Hygiene
NYC OER	New York City Office of Environmental Remediation
NYS DEC	New York State Department of Environmental Conservation
ORC	Oxygen Release Compound
PID	Photoionization Detector
QA/QC	Quality Assurance/Quality Control
QEP	Qualified Environmental Professional
RAR	Remedial Action Report
RAWP	Remedial Action Work Plan
RCA	Recycled Concrete Aggregate
SCG	Standards, Criteria and Guidance
SCO	Soil Cleanup Objective
SMMP	Soil/Materials Management Plan
SMP	Site Management Plan
SVOCs	Semi-Volatile Organic Compounds
UST	Underground Storage Tank
VOCs	Volatile Organic Compounds

CERTIFICATION

I, Spiro Dongaris, certify the following:

- I am currently a registered professional engineer licensed by the State of New York.
- I performed professional engineering services and had primary direct responsibility for implementation of the remedial program for the 14-54 31st Avenue site, site number 20CVCP075Q.
- I have reviewed this document, to which my signature and seal are affixed.
- The vapor barrier system and composite cover system constructed during this remedial action were designed by me or a person under my direct supervision and achieve the goals established in the Remedial Action Work Plan for this site.
- The vapor barrier system and composite cover system constructed during this remedial action were professionally observed by me or by a person under my direct supervision are accurately reflected in the text and drawings for as-built design reported in this Remedial Action Report.
- The OER-approved Remedial Action Work Plan dated April 2020 and Stipulations in a letter dated January 4, 2020 were implemented and that all requirements in those documents have been substantively complied with. I certify that contaminated soil, fill, liquid or other material from the property was taken to facilities licensed to accept this material in full compliance with applicable laws and regulations.

Name: Spiro Dongaris

PE License Number: 095954

Signature: _____

Date: 11/22/2022

EXECUTIVE SUMMARY

K&J International Realty, LLC has enrolled in the New York City Voluntary Cleanup Program (NYC VCP) to investigate and remediate a property located at 14-54 31st Avenue in Long Island City section of Queens, New York. A Remedial Investigation (RI) was performed to compile and evaluate data and information necessary to develop a Remedial Action Work Plan (RAWP). A remedial action was performed pursuant to the OER-approved RAWP in a manner that has rendered the Site protective of public health and the environment consistent with the proposed use of the property. This RAR describes the remedial action performed under the RAWP. The remedial action described in this document provides for the protection of public health and the environment and complies with applicable environmental standards, criteria and guidance and applicable laws and regulations.

Site Location and Background

The Site is located at 14-54 31st Avenue in the Astoria section of Queens, New York and is identified as Block 533 and Lot 45 on the New York City Tax Map. According to the NYC OASIS map, the Site is 5,050-square feet in area.

Formerly, the Site was developed with a 2-story residential building with cellar at grade, a single-story addition with an attached shed in the rear of the residential structure with an attached shed; and a single-story commercial building on grade, formerly used as a contractor's office, workshop, and storage space.

Summary of Redevelopment Plan

The Sites redevelopment consists of a new 8-story residential-use building with no basement, and paved parking area in the rear of the building. The building covers approximately 2,368 square feet (47% of the Site area). Soil was excavated to approximately 2 feet below ground surface (bgs) within the building footprint and portion of the driveway that is within the building footprint, required for footings, with deeper excavation in a few areas to a depth of up to 7 feet for the mat slab and elevator pit; no soil was excavated from the rear parking area or the portion of the driveway that is not within the building footprint. The ground floor of the building maintains one residential

apartment and accessory uses (utilities, storage, etc.), with residential uses on floors 2 through 8. The current zoning designation for the Site and surrounding area is R7A/C2-3, denoting it as a commercial district that is predominantly residential in character, with only light and moderate commercial use. The new redevelopment is consistent with existing zoning for the property.

Summary of Description of Surrounding Property

The Site is located within a primarily mixed use, residential, and commercial area of Queens, New York. The Site is bounded by two, 2-story residential buildings (and an under-construction 8-story mixed-use commercial and residential development) to the north (across 31st Avenue); a 3-story residential building to the west; a 4-story mixed-use commercial and residential building to the east; and a paved vacant lot to the south.

According to the OER Searchable Property Environmental E-Database (SPEED), there is one sensitive receptor (such as schools, hospitals, and day-care facilities) within a 500-foot radius of the Site; public school IS 126Q is located approximately 250 feet southeast of the Site at 31-51 21st Street, Astoria, NY 11106.

Summary of Past Site Uses and Areas of Concern

Based upon the review of the Phase I Environmental Site Assessment (ESA) Report prepared by Laurel Environmental Associates, LTD (Laurel) dated February 27, 2019, the following Site history was established. Prior to the current redevelopment project, the Site previously maintained a single residential building in the portion of the parcel along 31st Avenue, and a commercial building in the rear of the property. According to Laurel's Phase I ESA report, the previous residential building at the Site was constructed circa 1898, and the commercial building was constructed circa 1924. The commercial building was utilized as a contractor's workshop and storage space from 1993 to as recently as 2019, and according to an interview with a prior Site owner, the commercial building maintained similar uses prior to 1993. The residential building has maintained residential occupancy since its construction.

The February 2019 Phase I ESA identified two RECs for the Site, including the E-Designation for potential hazardous materials associated with the Site, and a possible

Vapor Encroachment Condition (VEC) due to potential volatile organic compound (VOC) sources in the area surrounding the Site.

In April 2019, Athenica implemented a Phase II ESA at the Site, in support of the potential purchase of the Site. The Phase II ESA included collection of four (4) soil samples and two (2) soil vapor samples. The soil samples were collected from three borings designated GT-1, GT-2, and GT-2X. One shallow (1'-3' bgs) soil sample was collected from borings GT-1 and GT-2, and one deep (10'-12' bgs) soil sample was collected from borings GT-1 and GT-2X. One soil vapor sample (SV-1) was collected immediately below the concrete floor slab in the contractor's workshop, and the second soil vapor sample (SV-2) was collected immediately below the asphalt pavement near the residential building. The results of the soil investigation indicated the presence of lead (229 milligrams per kilogram (mg/kg) in GT-1 (1'-3') and 156 mg/kg in GT-2X (10'-12')) and mercury (0.507 mg/kg at GT-2 (1'-3')) at concentrations exceeding 6 NYCRR Part 375 Unrestricted Use SCOs. None of the detected concentrations exceeded Residential Use or Restricted Residential Use SCOs. The detected concentrations of all compounds in soil are generally consistent with historic fill, which has been identified at other properties in the Site vicinity. The results of the soil vapor investigation did not show elevated concentrations of VOCs in soil vapor beneath the Site.

The AOCs, as determined by Laurel and Athenica, identified for this Site include:

1. The potential presence of historic fill material across the Site from zero to approximately 7 feet bgs (identified by Athenica);
2. The potential for vapor intrusion from adjacent properties (identified by Laurel); and
3. The "E"-Designation for potential hazardous materials (E-245) associated with the Site parcel (Block 533, Lot 45).

Summary of the Work Performed under the Remedial Investigation

In accordance with NYC OER requirements, Athenica implemented the following scope of work on October 22, 2019, to supplement Athenica's Phase II ESA scope of work that was conducted in April 2019:

1. Conducted a Site inspection to identify AOCs and physical obstructions (i.e., structures, buildings, etc.);
2. Advanced three (3) additional soil borings at locations across the Site, and collected six (6) additional soil samples from the soil borings for chemical

analysis of VOCs, SVOCs, pesticides, PCBs, and TAL metals, to evaluate soil quality;
3. Installed and surveyed three (3) temporary groundwater monitoring wells at locations throughout the Site to establish groundwater flow direction, and collected three (3) groundwater samples for chemical analysis of VOCs, SVOCs, pesticides, PCBs, and TAL metals, to evaluate groundwater quality;
4. Submitted one (1) of the soil samples and one (1) of the groundwater samples for additional chemical analysis of PFAS and 1,4-dioxane; and
5. Installed three (3) additional soil vapor probes at locations across the Site and collected three (3) soil vapor samples for chemical analysis of VOCs. As the existing Site buildings are planned to be demolished, indoor air samples were not collected.

All investigation and sampling activities were conducted in accordance with the OER-approved *Remedial Investigation Work Plan* (RIWP) dated October 10, 2019.

Summary of Findings of Remedial Investigation

A remedial investigation was performed and the results are documented in a companion document titled *Remedial Investigation Report, 14-54 31st Avenue*, dated November 2019 (RIR).

1. Elevation of the property is approximately 15 feet above mean sea level.
2. Depth to groundwater at the Site ranges from 6.9 to 8.3 feet bgs.
3. Groundwater flow beneath the Site is generally from south to north.
4. Depth to bedrock is unknown, as bedrock was not encountered at the Site during the remedial investigation. During advancement of the borings for temporary monitoring wells for the remedial investigation, refusal was encountered at two of the three well locations, TMW-2 and TMW-3, at depths of 13.5 feet bgs and 16 feet bgs, respectively. During the Phase II ESA conducted at the Site in April 2019, refusal was encountered in one soil boring, GT-2, at 7 feet bgs (this boring was re-located as GT-2X, and completed to the planned depth). Since deeper borings were advanced, it is concluded that the refusal does not represent bedrock.
5. The stratigraphy of the Site, from the surface down, consists of approximately 7 feet of fill, dark brown clay, clayey silt, fine silty sand, and layered fine-to-medium sand with rock pieces, underlain by 5 feet of tan medium-to-coarse sand (no soil sampling was conducted below a depth of 12 feet during the Phase II ESA or RI sampling programs).
6. Analytical results for soil/fill samples collected during the RI were compared to 6 NYCRR Part 375 Unrestricted Use SCOs and Restricted Residential Use SCOs. Results indicated:
    - No VOCs, SVOCs, pesticides, or PCBs were detected in any of the soil samples at concentrations above Unrestricted Use SCOs.

- Four (4) metals, including chromium (39.4 mg/kg), copper (maximum of 711 milligrams per kilogram (mg/kg)), lead (maximum of 552 mg/kg), mercury (maximum of 0.424 mg/kg), and zinc (maximum of 160 mg/kg), were detected at concentrations exceeding Unrestricted Use SCOs. Concentrations of copper and lead also exceeded their Restricted Residential Use SCOs.
- One PFAS compound, PFOS (at 0.00308 mg/kg), was detected in soil sample SB-3 (0'-2'). 1,4-dioxane was not detected in this sample.

7. Analytical results for groundwater samples collected during the RI were compared to 6 NYCRR Part 703.5 Class GA Groundwater Quality Standards (GQS). Results indicated:
   - No VOCs, SVOCs, pesticides, or PCBs were detected at concentrations exceeding GQS.
   - Ten (10) total metals, including barium (maximum of 3,210 micrograms per liter (µg/L)), chromium (maximum of 307 µg/L), copper (maximum of 398 µg/L), lead (maximum of 75.3 µg/L), magnesium (maximum of 42,600 µg/L), manganese (maximum of 20,300 µg/L), nickel (maximum of 202 µg/L), sodium (maximum of 71,300 µg/L), arsenic (at 32.6 µg/L), and selenium (maximum of 413 µg/L), were detected at concentrations exceeding GQS.
   - Two (2) dissolved metals, including manganese (maximum of 1,540 µg/L) and sodium (maximum of 69,500 µg/L), were detected at concentrations exceeding GQS.
   - Eight PFAS compounds, including PFDA (at 0.0324 µg/L), PFHpA (at 0.0198 µg/L), PFHxA (at 0.0385 µg/L), PFBA (at 0.0317 µg/L), PFNA (at 0.0150 µg/L), PFOS (at 0.0346 µg/L), PFOA (at 0.0499 µg/L), and PFPeA (at 0.0483 µg/L), were detected in groundwater sample TMW-1. Total PFAs within the TMW-1 sample was 0.2702 µg/L. 1,4-dioxane was not detected in this sample.
8. Analytical results for soil vapor samples collected during the RI were evaluated in accordance with the New York State Department of Health (NYSDOH) *Final Guidance for Evaluating Soil Vapor Intrusion* dated October 2006, as amended (NYSDOH Guidance). Results indicated:
   - Twenty-seven (27) individual VOCs were detected in the soil vapor samples.
   - Concentrations of total BTEX in the soil vapor samples ranged from 63.7 micrograms per cubic meter (µg/m^3) to 203.4 µg/m^3, with the maximum concentration detected in SV-4.
   - Three (3) chlorinated VOCs (CVOCs) listed in the NYSDOH Guidance comparison matrices were detected in the soil vapor samples, including methylene chloride (18 µg/m^3 in SV-3), tetrachloroethene (ranging from 3.2 µg/m^3 to 34 µg/m^3), and vinyl chloride (0.64 µg/m^3 in SV-4). None of the other five (5) CVOCs listed in the NYSDOH Guidance comparison matrices were detected in any of the soil vapor samples.
   - Four (4) CVOCs that are not included in the NYSDOH Guidance comparison matrices, including 1,4-dichlorobenzene (ranging from 2.7

µg/m^3 to 5.4 µg/m^3), chloroform (ranging from 3 µg/m^3 to 44 µg/m^3), chloromethane (ranging from 0.75 µg/m^3 to 2.9 µg/m^3), and dichlorodifluoromethane (ranging from 2.3 µg/m^3 to 2.7 µg/m^3), were detected in the soil vapor samples.

Summary of the Remedial Action

The Remedial Action achieved protection of public health and the environment for the intended use of the property. The Remedial Action achieved all of the Remedial Action Objectives established for the project; addressed applicable standards, criteria, and guidance; reduced mobility, toxicity and volume of contaminants; was cost effective and implementable; and used standard methods that are well established in the industry. The remedial action is effective in the short-term and long-term.

A summary of the milestones achieved in the Remedial Action is as follows: A Pre-Application Meeting was held on October 8, 2019. A Remedial Investigation (RI) was performed during October 2019. A RI Report was prepared to evaluate data and information necessary to develop a Remedial Action Work Plan (RAWP). A Site Contact List was established. A draft RAWP was prepared and released with a Fact Sheet on April 23, 2020 for a 30-day public comment period. The RAWP and Stipulation List dated January 4, 2021 was approved by the New York City Office of Environmental Remediation (OER) on January 5, 2021. Site briefings were conducted with New York State Department of Environmental Conservation (NYSDEC) on April 21, 2020. A Fact Sheet providing notice of the start of the remedial action was issued on April 23, 2020.The remedial action was begun in June 2021 and completed in November 2022.

The remedial action consisted of the following tasks:

1. Prepared a Community Protection Statement and implemented a Citizen Participation Plan.
2. Mobilized site security and equipment; completed utility mark outs; and marked and staked excavation areas.
3. Performed Waste Characterization Study prior to excavation activities. One waste characterization soil sample was collected on January 13, 2021. The waste characterization sample was collected at a frequency dictated by the disposal facility.
4. Performed a Community Air Monitoring Program for particulates and volatile organic carbon compounds.
5. Established Track 4 Site Specific Soil Cleanup Objectives (SCOs). The following Track 4 SCOs were utilized: list SCOs as follows: copper: 350 mg/kg; lead: 800 mg/kg.

6. The following excavations were performed: The southern portions of the Site, where the new building was constructed, were excavated to a depth of approximately 2 feet below grade for the installation of footings, and to a depth of up to 7 feet below grade for the installation of an elevator pit and associated mat slab. The rear open portion of the Site is a paved parking lot. A total of 769.85 tons of soil/fill was excavated and removed from the property.
7. Excavated 796.85 tons yards tons of non-hazardous soil/fill and transported it to EarthEfficient's Harmony Belvidere Road (HBR) facility, at 3189 Belvidere Road, Phillipsburg, New Jersey.
8. Screened excavated soil/fill during intrusive work for indications of contamination by visual means, odor, and monitoring with a PID.
9. Conducted materials management of excavated materials including temporarily stockpiling and segregating in accordance with defined material types and to prevent co-mingling of contaminated material and non-contaminated materials.
10. Appropriately segregated excavated media onsite prior to disposal. Transported and disposed all soil/fill material at permitted facilities in accordance with all applicable laws and regulations for handling, transporting, and disposing, and the RAWP
11. Collected and analyzed five (5) endpoint samples to determine attainment of SCOs. No VOCs, SVOCs, TAL metals, pesticides, or PCBs were detected in any of the endpoint samples, in exceedance of Unrestricted Use SCOs. Track 2 Restricted Residential SCOs were achieved.
12. As part of development, constructed an engineered Composite Cover System consisting of a six-inch thick concrete building slab. The composite cover was installed across the entire Site footprint, including the rear yard. The contractor for the cover construction was K&J International Realty, LLC.
13. As part of development, installed a Vapor Barrier System that consisted of a 20-mil Stego Wrap vapor barrier from Stego Industries, Inc., below the slab throughout the full building area, below and around the elevator pit, and outside all sub-grade foundation sidewalls. The contractor for the Vapor Barrier System construction was K&J International Realty, LLC.
14. Performed all activities required for the Remedial Action, including permitting requirements and pretreatment requirements, in compliance with applicable laws and regulations.
15. Implemented storm-water pollution prevention measures in compliance with applicable laws and regulations.
16. Submitted daily reports during construction oversight activities. Daily or monthly reports were submitted from June 29, 2021 to November 21, 2022.
17. Submitted a Sustainability Report.
18. Submitted an RAR that describes the Remedial Action; certifies that the remedial requirements defined in the RAWP have been achieved; defines the Site boundaries; and lists any changes from the RAWP.

REMEDIAL ACTION REPORT

1.0 SITE BACKGROUND

K&J International Realty, LLC has enrolled in the New York City Voluntary Cleanup Program (NYC VCP) to investigate and remediate a property located at 14-54 31st Avenue in Long Island City section of Queens, New York. 11106. The boundary of the property subject to this Remedial Action includes, in its entirety, Queens Block 533 and Lot 45. The Remedial Action was performed pursuant to the OER-approved RAWP in a manner that has rendered the property protective of public health and the environment consistent with its intended use. This RAR describes the Remedial Action performed under the RAWP. The remedial action described in this document provides for the protection of public health and the environment and complies with applicable environmental standards, criteria and guidance (SCGs) and applicable laws and regulations.

1.1 SITE LOCATION AND BACKGROUND

The Site is located at 14-54 31st Avenue in the Astoria section of Queens, New York and is identified as Block 533 and Lot 45 on the New York City Tax Map. According to the NYC OASIS map, the Site is 5,050-square feet in area. The Site Location Map is shown on Figure 1. The Site Boundary Map is shown on Figure 2.

Formerly, the Site was developed with a 2-story residential building with cellar at grade, a single-story addition with an attached shed in the rear of the residential structure with an attached shed; and a single-story commercial building on grade, formerly used as a contractor's office, workshop, and storage space.

1.2 REDEVELOPMENT PLAN

The Sites redevelopment consists of a new 8-story residential-use building with no basement, and paved parking area in the rear of the building. The building covers approximately 2,368 square feet (47% of the Site area). Soil was excavated to approximately 2 feet below ground surface (bgs) within the building footprint and portion of the driveway that is within the building footprint, required for footings, with deeper

excavation in a few areas to a depth of up to 7 feet for the mat slab and elevator pit; no soil was excavated from the rear parking area or the portion of the driveway that is not within the building footprint. The ground floor of the building maintains one residential apartment and accessory uses (utilities, storage, etc.), with residential uses on floors 2 through 8. The current zoning designation for the Site and surrounding area is R7A/C2-3, denoting it as a commercial district that is predominantly residential in character, with only light and moderate commercial use. The new redevelopment is consistent with existing zoning for the property.

The locations of the building and the rear parking area, relative to the Site boundaries, are shown on Figure 3.

1.3 DESCRIPTION OF SURROUNDING PROPERTY

The Site is located within a primarily mixed use, residential, and commercial area of Queens, New York. The Site is bounded by two, 2-story residential buildings (and an under-construction 8-story mixed-use commercial and residential development) to the north (across 31st Avenue); a 3-story residential building to the west; a 4-story mixed-use commercial and residential building to the east; and a paved vacant lot to the south.

According to the OER Searchable Property Environmental E-Database (SPEED), there is one sensitive receptor (such as schools, hospitals, and day-care facilities) within a 500-foot radius of the Site; public school IS 126Q is located approximately 250 feet southeast of the Site at 31-51 21st Street, Astoria, NY 11106.

1.4 SUMMARY OF PAST SITE USES AND AREAS OF CONCERN

Based upon the review of the Phase I Environmental Site Assessment (ESA) Report prepared by Laurel Environmental Associates, LTD (Laurel) dated February 27, 2019, the following Site history was established. Prior to the current redevelopment project, the Site previously maintained a single residential building in the portion of the parcel along 31st Avenue, and a commercial building in the rear of the property. According to Laurel's Phase I ESA report, the previous residential building at the Site was constructed circa 1898, and the commercial building was constructed circa 1924. The commercial building was utilized as a contractor's workshop and storage space from 1993 to as recently as

2019, and according to an interview with a prior Site owner, the commercial building maintained similar uses prior to 1993. The residential building has maintained residential occupancy since its construction.

The February 2019 Phase I ESA identified two RECs for the Site, including the E-Designation for potential hazardous materials associated with the Site, and a possible Vapor Encroachment Condition (VEC) due to potential volatile organic compound (VOC) sources in the area surrounding the Site.

In April 2019, Athenica implemented a Phase II ESA at the Site, in support of the potential purchase of the Site. The Phase II ESA included collection of four (4) soil samples and two (2) soil vapor samples. The soil samples were collected from three borings designated GT-1, GT-2, and GT-2X. One shallow (1'-3' bgs) soil sample was collected from borings GT-1 and GT-2, and one deep (10'-12' bgs) soil sample was collected from borings GT-1 and GT-2X. One soil vapor sample (SV-1) was collected immediately below the concrete floor slab in the contractor's workshop, and the second soil vapor sample (SV-2) was collected immediately below the asphalt pavement near the residential building. The results of the soil investigation indicated the presence of lead (229 milligrams per kilogram (mg/kg) in GT-1 (1'-3') and 156 mg/kg in GT-2X (10'-12')) and mercury (0.507 mg/kg at GT-2 (1'-3')) at concentrations exceeding 6 NYCRR Part 375 Unrestricted Use SCOs. None of the detected concentrations exceeded Residential Use or Restricted Residential Use SCOs. The detected concentrations of all compounds in soil are generally consistent with historic fill, which has been identified at other properties in the Site vicinity. The results of the soil vapor investigation did not show elevated concentrations of VOCs in soil vapor beneath the Site.

The AOCs, as determined by Laurel and Athenica, identified for this Site include:

1. The potential presence of historic fill material across the Site from zero to approximately 7 feet bgs (identified by Athenica);
2. The potential for vapor intrusion from adjacent properties (identified by Laurel); and
3. The "E"-Designation for potential hazardous materials (E-245) associated with the Site parcel (Block 533, Lot 45).

1.5 SUMMARY OF WORK PERFORMED UNDER THE REMEDIAL INVESTIGATION

In accordance with NYC OER requirements, Athenica implemented the following scope of work on October 22, 2019, to supplement Athenica's Phase II ESA scope of work that was conducted in April 2019:

1. Conducted a Site inspection to identify AOCs and physical obstructions (i.e., structures, buildings, etc.);
2. Advanced three (3) additional soil borings at locations across the Site, and collected six (6) additional soil samples from the soil borings for chemical analysis of VOCs, SVOCs, pesticides, PCBs, and TAL metals, to evaluate soil quality;
3. Installed and surveyed three (3) temporary groundwater monitoring wells at locations throughout the Site to establish groundwater flow direction, and collected three (3) groundwater samples for chemical analysis of VOCs, SVOCs, pesticides, PCBs, and TAL metals, to evaluate groundwater quality;
4. Submitted one (1) of the soil samples and one (1) of the groundwater samples for additional chemical analysis of PFAS and 1,4-dioxane; and
5. Installed three (3) additional soil vapor probes at locations across the Site and collected three (3) soil vapor samples for chemical analysis of VOCs. As the existing Site buildings are planned to be demolished, indoor air samples were not collected.

All investigation and sampling activities were conducted in accordance with the OER-approved *Remedial Investigation Work Plan* (RIWP) dated October 10, 2019.

1.6 SUMMARY OF FINDINGS OF REMEDIAL INVESTIGATION

A remedial investigation was performed and the results are documented in a companion document titled *Remedial Investigation Report, 14-54 31st Avenue*, dated November 2019 (RIR).

1. Elevation of the property is approximately 15 feet above mean sea level.
2. Depth to groundwater at the Site ranges from 6.9 to 8.3 feet bgs.
3. Groundwater flow beneath the Site is generally from south to north.
4. Depth to bedrock is unknown, as bedrock was not encountered at the Site during the remedial investigation. During advancement of the borings for temporary monitoring wells for the remedial investigation, refusal was encountered at two of the three well locations, TMW-2 and TMW-3, at depths of 13.5 feet bgs and 16 feet bgs, respectively. During the Phase II ESA

conducted at the Site in April 2019, refusal was encountered in one soil boring, GT-2, at 7 feet bgs (this boring was re-located as GT-2X, and completed to the planned depth). Since deeper borings were advanced, it is concluded that the refusal does not represent bedrock.

5. The stratigraphy of the Site, from the surface down, consists of approximately 7 feet of fill, dark brown clay, clayey silt, fine silty sand, and layered fine-to-medium sand with rock pieces, underlain by 5 feet of tan medium-to-coarse sand (no soil sampling was conducted below a depth of 12 feet during the Phase II ESA or RI sampling programs).

6. Analytical results for soil/fill samples collected during the RI were compared to 6 NYCRR Part 375 Unrestricted Use SCOs and Restricted Residential Use SCOs. Results indicated:

   - No VOCs, SVOCs, pesticides, or PCBs were detected in any of the soil samples at concentrations above Unrestricted Use SCOs.
   - Four (4) metals, including chromium (39.4 mg/kg), copper (maximum of 711 milligrams per kilogram (mg/kg)), lead (maximum of 552 mg/kg), mercury (maximum of 0.424 mg/kg), and zinc (maximum of 160 mg/kg), were detected at concentrations exceeding Unrestricted Use SCOs. Concentrations of copper and lead also exceeded their Restricted Residential Use SCOs.
   - One PFAS compound, PFOS (at 0.00308 mg/kg), was detected in soil sample SB-3 (0'-2'). 1,4-dioxane was not detected in this sample.

7. Analytical results for groundwater samples collected during the RI were compared to 6 NYCRR Part 703.5 Class GA Groundwater Quality Standards (GQS). Results indicated:

   - No VOCs, SVOCs, pesticides, or PCBs were detected at concentrations exceeding GQS.
   - Ten (10) total metals, including barium (maximum of 3,210 micrograms per liter (µg/L)), chromium (maximum of 307 µg/L), copper (maximum of 398 µg/L), lead (maximum of 75.3 µg/L), magnesium (maximum of 42,600 µg/L), manganese (maximum of 20,300 µg/L), nickel (maximum of 202 µg/L), sodium (maximum of 71,300 µg/L), arsenic (at 32.6 µg/L), and selenium (maximum of 413 µg/L), were detected at concentrations exceeding GQS.
   - Two (2) dissolved metals, including manganese (maximum of 1,540 µg/L) and sodium (maximum of 69,500 µg/L), were detected at concentrations exceeding GQS.
   - Eight PFAS compounds, including PFDA (at 0.0324 µg/L), PFHpA (at 0.0198 µg/L), PFHxA (at 0.0385 µg/L), PFBA (at 0.0317 µg/L), PFNA (at 0.0150 µg/L), PFOS (at 0.0346 µg/L), PFOA (at 0.0499 µg/L), and PFPeA

(at 0.0483 µg/L), were detected in groundwater sample TMW-1. Total PFAs within the TMW-1 sample was 0.2702 µg/L. 1,4-dioxane was not detected in this sample.

8. Analytical results for soil vapor samples collected during the RI were evaluated in accordance with the New York State Department of Health (NYSDOH) *Final Guidance for Evaluating Soil Vapor Intrusion* dated October 2006, as amended (NYSDOH Guidance). Results indicated:

   - Twenty-seven (27) individual VOCs were detected in the soil vapor samples.
   - Concentrations of total BTEX in the soil vapor samples ranged from 63.7 micrograms per cubic meter (µg/m^3) to 203.4 µg/m^3, with the maximum concentration detected in SV-4.
   - Three (3) chlorinated VOCs (CVOCs) listed in the NYSDOH Guidance comparison matrices were detected in the soil vapor samples, including methylene chloride (18 µg/m^3 in SV-3), tetrachloroethene (ranging from 3.2 µg/m^3 to 34 µg/m^3), and vinyl chloride (0.64 µg/m^3 in SV-4). None of the other five (5) CVOCs listed in the NYSDOH Guidance comparison matrices were detected in any of the soil vapor samples.
   - Four (4) CVOCs that are not included in the NYSDOH Guidance comparison matrices, including 1,4-dichlorobenzene (ranging from 2.7 µg/m^3 to 5.4 µg/m^3), chloroform (ranging from 3 µg/m^3 to 44 µg/m^3), chloromethane (ranging from 0.75 µg/m^3 to 2.9 µg/m^3), and dichlorodifluoromethane (ranging from 2.3 µg/m^3 to 2.7 µg/m^3), were detected in the soil vapor samples.

Appendix A includes the RIR.

2.0 DESCRIPTION OF REMEDIAL ACTIONS

The Remedial Action was performed in accordance with an OER-approved Remedial Action Work Plan and achieved the Remedial Action Objectives established for the project. The Remedial Action was evaluated in an alternatives analysis and was determined to be protective of human health and the environment, compliant with standards, criteria, and guidelines (SCGs), effective in the short-term, effective in the long-term, capable of attaining appropriate levels of reduction of toxicity, mobility, or volume of contaminated material, implementable, cost effective, acceptable to the community, consistent with land uses, and sustainable.

A summary of the milestones achieved in the Remedial Action is as follows: A Pre-Application Meeting was held on October 8, 2019. A Remedial Investigation (RI) was performed from October to November 2019. A RI Report was prepared to evaluate data and information necessary to develop a Remedial Action Work Plan (RAWP). A Site Contact List was established. A RAWP was prepared and released with a Fact Sheet on April 23, 2020 for a 30-day public comment period. The RAWP and Stipulation List dated January 4, 2021 was approved by the New York City Office of Environmental Remediation (OER) on January 5, 2021. Site briefings were conducted with New York State Department of Environmental Conservation (NYSDEC) on April 23, 2020. A Fact Sheet providing notice of the start of the remedial action was issued on April 23, 2020. The remedial action was begun in June 2021 and completed on November 21, 2022. Appendix B includes the RAWP.

The remedial action consisted of the following tasks:

1. Prepared a Community Protection Statement and implemented a Citizen Participation Plan.
2. Mobilized site security and equipment; completed utility mark outs; and marked and staked excavation areas.
3. Performed Waste Characterization Study prior to excavation activities. One waste characterization soil sample was collected on January 13, 2021. The waste characterization sample was collected at a frequency dictated by the disposal facility.
4. Performed a Community Air Monitoring Program for particulates and volatile organic carbon compounds.

5. Established Track 4 Site Specific Soil Cleanup Objectives (SCOs). The following Track 4 SCOs were utilized: list SCOs as follows: copper: 350 mg/kg; lead: 800 mg/kg.
6. The following excavations were performed: The southern portions of the Site, where the new building was constructed, were excavated to a depth of approximately 2 feet below grade for the installation of footings, and to a depth of up to 7 feet below grade for the installation of an elevator pit and associated mat slab. The rear open portion of the Site is a paved parking lot. A total of 769.85 tons of soil/fill was excavated and removed from the property.
7. Excavated 796.85 tons yards tons of non-hazardous soil/fill and transported it to EarthEfficient's Harmony Belvidere Road (HBR) facility, at 3189 Belvidere Road, Phillipsburg, New Jersey.
8. Screened excavated soil/fill during intrusive work for indications of contamination by visual means, odor, and monitoring with a PID.
9. Conducted materials management of excavated materials including temporarily stockpiling and segregating in accordance with defined material types and to prevent co-mingling of contaminated material and non-contaminated materials.
10. Appropriately segregated excavated media onsite prior to disposal. Transported and disposed all soil/fill material at permitted facilities in accordance with all applicable laws and regulations for handling, transporting, and disposing, and the RAWP
11. Collected and analyzed five (5) endpoint samples to determine attainment of SCOs. No VOCs, SVOCs, TAL metals, pesticides, or PCBs were detected in any of the endpoint samples, in exceedance of Unrestricted Use SCOs. Track 2 Restricted Residential SCOs were achieved.
12. Constructed an engineered Composite Cover System consisting of a six-inch thick concrete building slab. The composite cover was installed across the entire Site footprint, including the rear yard. The contractor for the cover construction was K&J International Realty, LLC.
13. Installed a Vapor Barrier System that consisted of a 20-mil Stego Wrap vapor barrier from Stego Industries, Inc., below the slab throughout the full building area, below and around the elevator pit, and outside all sub-grade foundation sidewalls. The contractor for the Vapor Barrier System construction was K&J International Realty, LLC.
14. Performed all activities required for the Remedial Action, including permitting requirements and pretreatment requirements, in compliance with applicable laws and regulations.
15. Implemented storm-water pollution prevention measures in compliance with applicable laws and regulations.
16. Submitted daily reports during construction oversight activities. Daily or monthly reports were submitted from June 29, 2021 to November 21, 2022.
17. Submitted a Sustainability Report.
18. Submitted an RAR that describes the Remedial Action; certifies that the remedial requirements defined in the RAWP have been achieved; defines the Site boundaries; and lists any changes from the RAWP.

3.0 COMPLIANCE WITH REMEDIAL ACTION WORK PLAN

3.1 CONSTRUCTION HEALTH & SAFETY PLAN

The remedial construction activities performed under this program were in compliance with the Construction Health and Safety Plan and applicable laws and regulations. The Site Safety Coordinator was Ke An Chen.

3.2 COMMUNITY AIR MONITORING PLAN

The Community Air Monitoring Plan provided for the collection and analysis of air samples during remedial construction activities to ensure proper protections were employed to protect workers and the neighboring community. Monitoring was performed from June 29, 2021 to July 19, 2021 in compliance with the Community Air Monitoring Plan in the approved RAWP. Exceedances of CAMP criteria for particulates were measured at the downwind CAMP station on June 29, 2021, June 30, 2021, July 1, 2021 and July 6, 2021. For each incident, Athenica instructed the contractor to spray the area with water, and particulate levels returned to satisfactory levels. Additionally, on July 1, 2021 and July 6, 2021, VOC exceedances were observed, only at the upwind VOC CAMP station. This was likely caused due to equipment error. The upwind VOC unit was recalibrated and the VOC levels returned to satisfactory level.

The results of Community Air Monitoring are included in Appendix C.

3.3 SOIL/MATERIALS MANAGEMENT PLAN

The Soil/Materials Management Plan provided detailed plans for managing all soil/materials that were disturbed at the Site, including excavation, handling, storage, transport and disposal. It also included a series of controls to assure effective, nuisance-free remedial activity in compliance with applicable laws and regulations. Remedial construction activities performed under this program were in compliance with the SMMP in the approved RAWP.

3.4 STORM-WATER POLLUTION PREVENTION

Storm water pollution prevention included physical methods and processes to control and/or divert surface water flows and to limit the potential for erosion and migration of Site soils, via wind or water. Remedial construction activities performed under this program were in full compliance with methods and processes defined in the RAWP for storm water prevention and applicable laws and regulations.

3.5 DEVIATIONS FROM THE REMEDIAL ACTION WORK PLAN

- The selected Remedial Alternative listed in the RAWP included Track 4 Site Specific Soil Cleanup Objectives. However, all endpoint samples were below Unrestricted Use Track 1 Soil Cleanup objectives. Since a portion of the Site (rear parking lot) was not excavated, the Site is considered to have achieved a Track 2 Restricted Residential Remedial Action, which does not require engineering controls, institutional controls, or a Site Management Plan.
- The Composite Cover System described in the RAWP included 6-inches of reinforced concrete slab underlain by 8-inches of clean sub-base material throughout the building area. However, the 6-inch reinforced concrete slab (and VBS) was installed directly on compacted native soil. This deviation from the RAWP is protective of human health and the environment since all endpoint samples met Track 1 (Unrestricted Use) SCOs and the Composite Cover System is considered a protective construction element rather than an engineering control.

4.0 REMEDIAL PROGRAM

4.1 PROJECT ORGANIZATION

Principal personnel who participated in the remedial action include Evan Greenberg (Junior Engineer), BJ Blair (Junior Engineer), Sufyan Khalid (Environmental Scientist), and Kenneth P. Wenz, Jr. (Senior Project Manager). The Professional Engineer (PE) and Qualified Environmental Professional (QEP) for this project were Spiro Dongaris and Kenneth P. Wenz, Jr., respectively.

4.2 SITE CONTROLS

Site Preparation

- Mobilization was conducted as necessary for each phase of work at the Site. Mobilization included field personnel orientation, equipment mobilization (including securing all sampling equipment needed for the field investigation), and marking/staking sampling locations and utilities. Each field team member attended an orientation meeting to become familiar with the general operation of the Site health and safety requirements and field procedures. Mobilization at the Site occurred in June 2021;
- Fencing was installed at the Site by June 2021;
- Erosion and sedimentation controls were established by June 2021;
- The presence of utilities and easements on the Site was fully investigated prior to the performance of invasive work such as excavation or drilling under this plan by using, at a minimum, the One-Call System (811). Underground utilities may pose an electrocution, explosion, or other hazard during excavation or drilling activities. All invasive activities were performed in compliance with applicable laws and regulations to assure safety. Utility companies and other responsible authorities were contacted to locate and mark the locations. Proper safety and protective measures pertaining to utilities and easements, and compliance with all laws and regulations were employed during invasive and other work. The integrity and safety of on-Site and off-Site structures were maintained during all invasive, excavation or other remedial activity performed during the Remedial Action;
- The building department issued a building permit for the Site on June 25, 2021;
- A pre-construction meeting was held with all contractors on May 5, 2021;

Soil Screening

Excavation activities began on June 29, 2021 and were completed on July 1, 2021. Intrusive soil excavation activities were overseen by Athenica, in accordance with the approved RAWP and as discussed with OER. In addition to extensive sampling and chemical testing of soils on the Site, excavated soil was screened continuously using hand-held instruments, and by sight to ensure proper material handling and management. No visual or olfactory evidence of a spill was observed during Site excavation.

Stockpile Management

The excavation of historic fill and native soils was accomplished by directly loading of the materials onto trucks for off-Site disposal. Stockpiling was minimized. Recognizable C&D were stockpiled for separate off-Site disposal.

Truck Inspection

As necessary, outbound trucks were cleaned prior to departing the Site to prevent any off-Site migration of contamination. Cleaning of the adjacent street was performed as needed.

Site Security

Site access was controlled through a gated entrance in the construction fence. The fence was locked with a chain and padlock during non-working hours/days.

Nuisance Controls

There were no complaints of odor at the Site. Dust exceedances were observed on four occasions, and two VOC exceedances were observed. As described below, each of these incidents was immediately addressed via various methods of mitigation, including spraying water on soil, and/or halting work until VOC/particulate readings were reduced to below action levels.

Exceedances of CAMP criteria for particulates were measured at the downwind CAMP station on June 29, 2021, June 30, 2021, July 1, 2021 and July 6, 2021. For each incident, Athenica instructed the contractor to spray the area with water, and particulate

levels returned to satisfactory levels. Additionally, on July 1, 2021 and July 6, 2021, VOC exceedances were observed, only at the upwind VOC CAMP station. This was likely caused due to equipment error. The upwind VOC unit was recalibrated and the VOC levels returned to satisfactory level.

Reporting

Daily reports were prepared and submitted to the OER from June 29, 2021 to November 21, 2022. All daily and monthly reports are included in Appendix D. Digital photographs of the Remedial Action are included in Appendix E.

4.3 MATERIALS EXCAVATION AND REMOVAL ACTION

Soil/Fill Excavation and Removal

As part of development, soil within the entire footprint of the Site was excavated to a depth of approximately 2 feet bgs for the installation of footings, and to a depth of up to 7 feet below grade for the installation of an elevator pit and associated mat slab. The approximate locations where excavations were performed and the approximate thicknesses of material that was excavated are shown on Figure 4. During the Remedial Action, 796.85 tons of non-hazardous soil were excavated and disposed at a permitted facility (EarthEfficient Harmony Belvidere). The Remedial Action was performed under the oversight of Spiro Dongaris, P.E., and Kenneth P. Wenz Jr., Q.E.P.

Onsite Reuse.

Soil was not reused during Site redevelopment.

UST Removal.

No USTs were encountered during Site redevelopment.

NYSDEC Petroleum Spills.

No spills were reported at the Site during Site redevelopment.

Dewatering.

Dewatering was not required for the Remedial Action.

Soil Cleanup Objectives

The following Track 4 Site-Specific SCOs were utilized for this project:

Contaminant	Site-Specific SCOs
Copper	350 ppm
Lead	800 ppm

Endpoint Sample Results

In compliance with the OER-approved RAWP, five post-excavation confirmation endpoint samples were collected from the bottom of the final excavation, approximately 2 feet bgs for endpoint samples EP-1, EP-2, EP-4, and EP-5, and 7 feet bgs for endpoint sample EP-3 (located beneath the elevator pit), to evaluate conformance of the remedy in attainment of applicable SCOs. The endpoint samples were analyzed for VOCs, SVOCs, pesticides, PCBs, and metals, at a New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP) certified laboratory (York Analytical Laboratories, Inc.) utilizing EPA Method 8260 for VOCs, EPA Method 8270 for SVOCs, EPA Methods 8081/8082 for pesticides/PCBs, and EPA Method 6010 Target Analyte List (TAL) metals. Field blanks and duplicates for endpoint soil samples were not collected.

Endpoint samples were collected utilizing laboratory-provided, pre-cleaned glassware consisting of a Terracore kit and one 8-oz jar per sample, which were stored in iced coolers until they were picked up by a laboratory courier. The results of the post-excavation confirmation soil samples were compared to Track 4 Site Specific SCOs, Track 2 Restricted Residential Use SCOs, and Track 1 Unrestricted Use SCOs. All sample results achieved both Track 1 Unrestricted Use SCOs and Track 2 Restricted Residential Use SCOs. Track 1 Unrestricted Use SCOs were achieved in all endpoint samples collected during this project. The post-excavation endpoint sample locations are shown on Figure 5. A tabular summary of post-excavation confirmation sampling results

compared to SCOs is provided in Table 2. Full laboratory reports for the post-excavation samples are included in Appendix F.

Endpoint Data Usability Summary

The endpoint soil samples were appropriately containerized, labeled, and assigned unique sample identification numbers. The soil samples were accompanied by completed Chain-of-Custody documents. Sampling methods, sample preservation requirements, and sampling handling times, and decontamination procedures for field equipment, conformed to the RAWP and applicable industry standards. Laboratory blanks for endpoint samples were not collected.

4.4 MATERIALS DISPOSAL

Soil and fill materials to be excavated were properly characterized for off-Site disposal, in accordance with the RAWP, Stipulations List, and disposal facility requirements. Characterization of soils/fill for off-Site disposal included collection of one (1) soil sample on January 13, 2021 for analysis of TCL VOCs, TCL SVOCs, pesticides, PCBs, TAL metals, Extractable Petroleum Hydrocarbons (EPH), full TCLP, mercury, reactivity, corrosivity, ignitability, and free liquids (paint filter), as required by the potential disposal facilities that were identified to receive the excavated material. No PID or olfactory evidence of soil contamination was observed during the disposal characterization sampling program. A copy of the laboratory analytical report for the waste characterization sampling is included in Appendix G.

The type, quantity and disposal location of each material removed and disposed off-Site is presented in the following table:

Disposal Location/Address	Type of Material	Quantity
EarthEfficient Harmony Belvidere Road, 3189 Belvidere Road, Phillipsburg, NJ 08865	Non-Hazardous Soil	796.85 tons

A letter from K&J International Realty, LLC to EarthEfficient providing materials type, source, and data, and an acceptance letter from the facility stating it is approved to accept the above materials are provided in Appendix H. Transportation and disposal manifests are included in Appendix I. Table 3 summarizes the individual truck loads and disposal quantities.

4.5 BACKFILL IMPORT

Backfill was not imported to the site during this Remedial Action or development.

4.6 DEMARACTION

The residual soils beneath the building consisted of clean native soil meeting Track 1 Unrestricted Use SCOs; therefore, a demarcation barrier was not required.

5.0 ENGINEERING CONTROLS

A Track 2 Restricted Residential Remedial Action was achieved and Engineering Controls are not required. However, as part of construction, several protective systems were installed at the Site, including:

(1) Composite Cover System

(2) Vapor Barrier System.

Protective Construction Elements

Composite Cover System

As part of Site redevelopment, a Composite Cover System was constructed at the Site. This Composite Cover System is comprised of at minimum a six-inch reinforced concrete slab across the entire building footprint. The contractor for the Composite Cover System construction was K&J International Realty, LLC.

Figure 6 is a map showing the locations of the Composite Cover System at the Site. Figure 7 shows the design detail for each cover type used in the Composite Cover System on the Site (i.e., footings, mat slab, and reinforced concrete cover). Photographs taken during construction of the Composite Cover System are included in Appendix E.

Vapor Barrier System

As part of Site redevelopment, a Vapor Barrier System has been constructed at the Site. This Vapor Barrier System consists of a 20-mil thick multi-layer extruded polyolefin membrane (Stego-Wrap) manufactured by Stego Industries, LLC that was installed beneath the building slab and structural footings, below the elevator pit, and behind all sub-surface foundation walls. The Vapor Barrier System was installed to the manufacturer's specifications with all seams and penetrations sealed using Stego Tape and/or Stego Mastic. The Vapor Barrier System was installed as per the manufacturer's specifications and inspected by Athenica prior to any concrete pour. The contractor for the Vapor Barrier System construction was K&J International Realty, LLC.

Figure 8 shows a map of the location of the Vapor Barrier System constructed at the Site. Figure 7 shows the design details for the Vapor Barrier System. Photographs taken during installation of the Vapor Barrier System are included in Appendix E. A copy of manufacturer's specifications for the Vapor Barrier System materials is included in Appendix J.

6.0 INSTITUTIONAL CONTROLS

A Track 2 Restricted Residential Remedial Action was achieved, and Engineering Controls and Institutional Controls are not required.

7.0 SITE MANAGEMENT PLAN

A Track 2 Restricted Residential Remedial Action was achieved and Site management is not required.

8.0 SUSTAINABILITY REPORT

This Remedial Action provided for sustainable remediation and redevelopment through a variety of means that are defined in this Sustainability Report.

Conversion to Clean Fuels.

Use of clean fuel improves NYC's air quality by reducing harmful emissions. Natural gas is utilized as the principal fuel in the new building.

Recontamination Control.

Recontamination after cleanup and redevelopment is completed undermines the value of work performed, may result in a property that is less protective of public health or the environment, and may necessitate additional cleanup work later that could impede future redevelopment. Recontamination can arise from future releases that occur within the property or by influx of contamination from off-Site.

A 20-mil vapor barrier system has been installed across the entire footprint of the on-Site building, including below and around the elevator pit and footings, below the building slab, and behind all subsurface foundation walls; a composite cover system has been installed across the entire footprint of the Site, and consists of a minimum six-inches of reinforced concrete slab. The area of the Site that utilizes recontamination controls under this plan is area of entire Site footprint.

Paperless Brownfield Cleanup Program.

K&J International Realty, LLC participated in OER's paperless Voluntary Cleanup Program. Under this program, submission of electronic documents replaced submission of hard copies for the review of project documents, communications, and milestone reports. A best estimate of the mass (pounds) of paper saved under this plan is 50 pounds.

Low-Energy Project Management Program.

K&J International Realty, LLC participated in OER's low-energy project management program. Under this program, whenever possible, meetings were held using

remote communication technologies, such as videoconferencing and teleconferencing, to reduce energy consumption and traffic congestion associated with personal transportation. A gross estimate of the number of miles of personal transportation that was conserved in this process is 50 miles.

FIGURES

LEGEND:

Site Boundary

ATHENICA ENVIRONMENTAL SERVICES, INC.
Environmental Engineering Consultants
45-09 GREENPOINT AVENUE
LONG ISLAND CITY, NY 11104
TEL: (718) 784 - 7490
FAX: (718) 784 - 4085

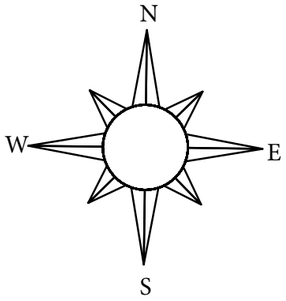
Source: NYC Department of Finance - Digital Tax Map

Date:	MARCH 26, 2020
Drawn by:	EVAN GREENBERG
Checked by:	KEN WENZ
Drawing Scale:	AS DRAWN
Project No.:	19-133-1504

Site: 14-54 31st Avenue, Astoria, NY 11106
Remedial Action Report

Figure: 1

Title: SITE LOCATION MAP



Land Use

All land use categories

2003 2005 2007 2009 2014 2018

- 1 & 2 Family Residential
- Multi-family Residential
- Mixed Use
- Open space & outdoor recreation
- Commercial
- Institutions
- Industrial
- Parking
- Transportation / Utilities
- Vacant Lots

LEGEND:

Site Boundary

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Environmental Engineering Consultants
45-09 GREENPOINT AVENUE
LONG ISLAND CITY, NY 11104
TEL: (718) 784 - 7490
FAX: (718) 784 - 4085

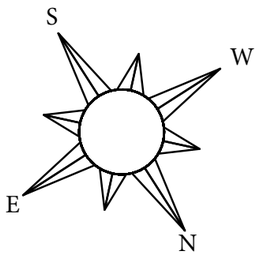
Source: NYC OASIS Map: http://www.oasisnyc.net/map.aspx

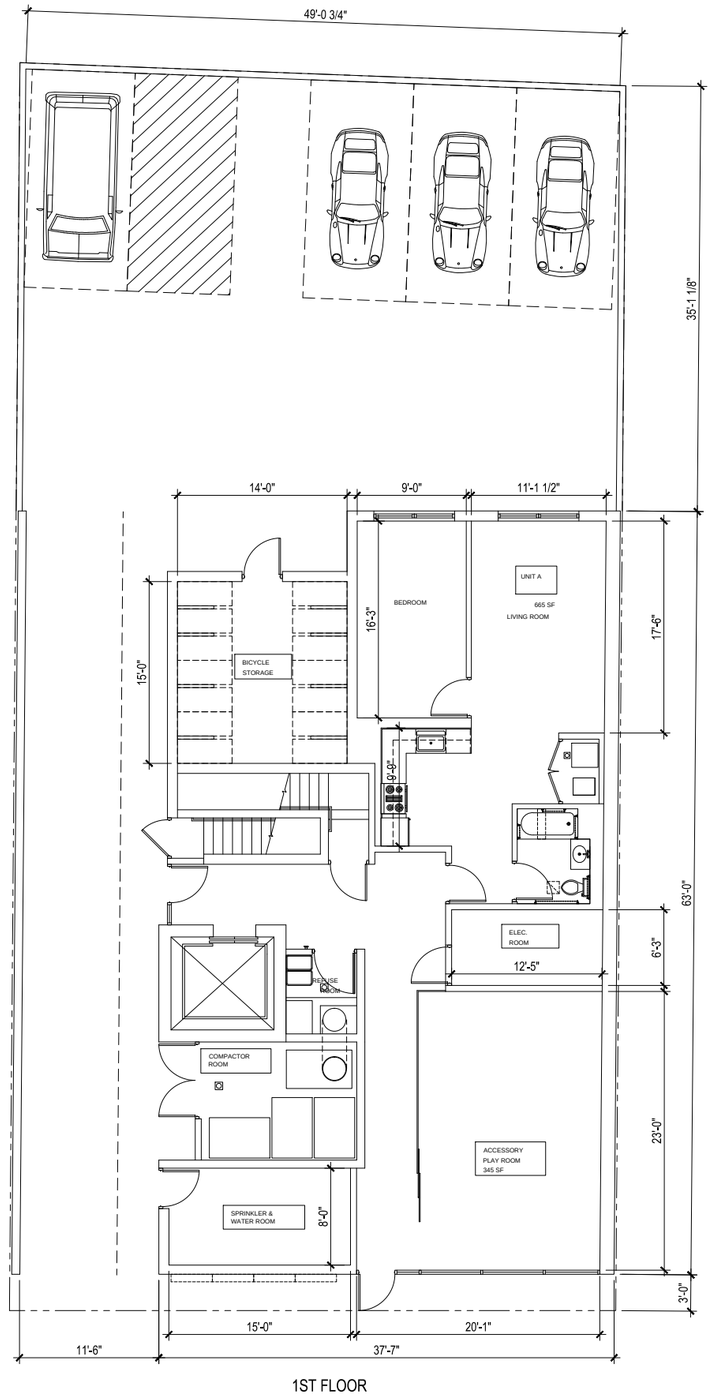
Date:	MARCH 26, 2020
Drawn by:	EVAN GREENBERG
Checked by:	KEN WENZ
Drawing Scale:	AS DRAWN
Project No.:	19-133-1504

Site: 14-54 31st Avenue, Astoria, NY 11106
Remedial Action Report

Figure: 2

Title: SITE BOUNDARY AND SURROUNDING USE MAP

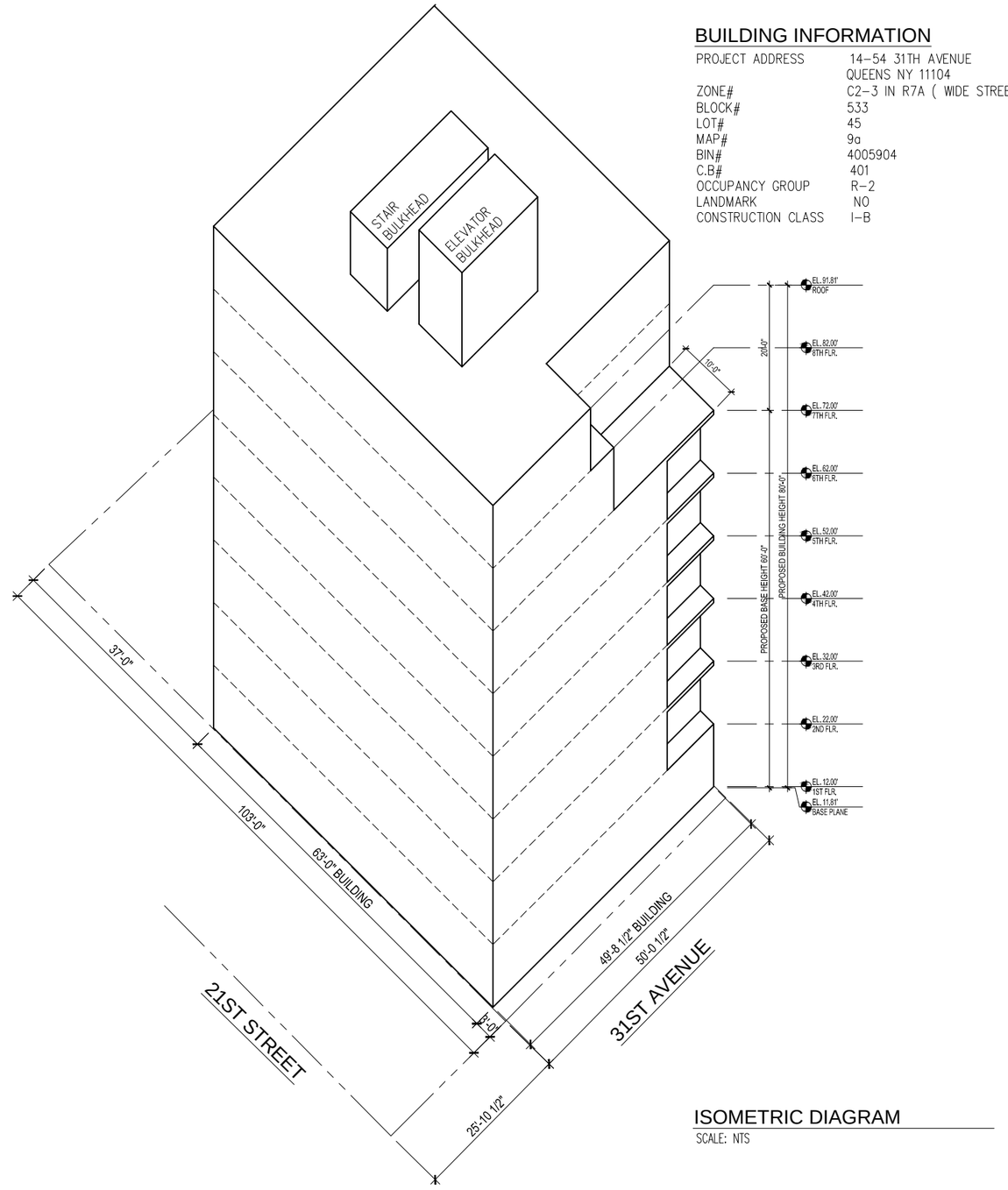




1ST FLOOR

BUILDING INFORMATION

PROJECT ADDRESS	14-54 31TH AVENUE QUEENS NY 11104
ZONE#	C2-3 IN R7A (WIDE STREET)
BLOCK#	533
LOT#	45
MAP#	9a
BIN#	4005904
C.B#	401
OCCUPANCY GROUP	R-2
LANDMARK	NO
CONSTRUCTION CLASS	I-B



ISOMETRIC DIAGRAM

SCALE: NTS

LEGEND:

ATHENICA ENVIRONMENTAL SERVICES, INC.
Environmental Engineering Consultants

45-09 GREENPOINT AVENUE
LONG ISLAND CITY, NY 11104
TEL: (718) 784 - 7490
FAX: (718) 784 - 4085

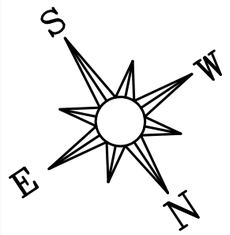
Note: Adapted from Chi F. Lau Architects: "*8-Story Residential Building: 14-54 31st Avenue Queens New York 11106*": *Height and Setback Diagram Design Plans, SK-002.00*. Drawn by SL, 9/27/2019.

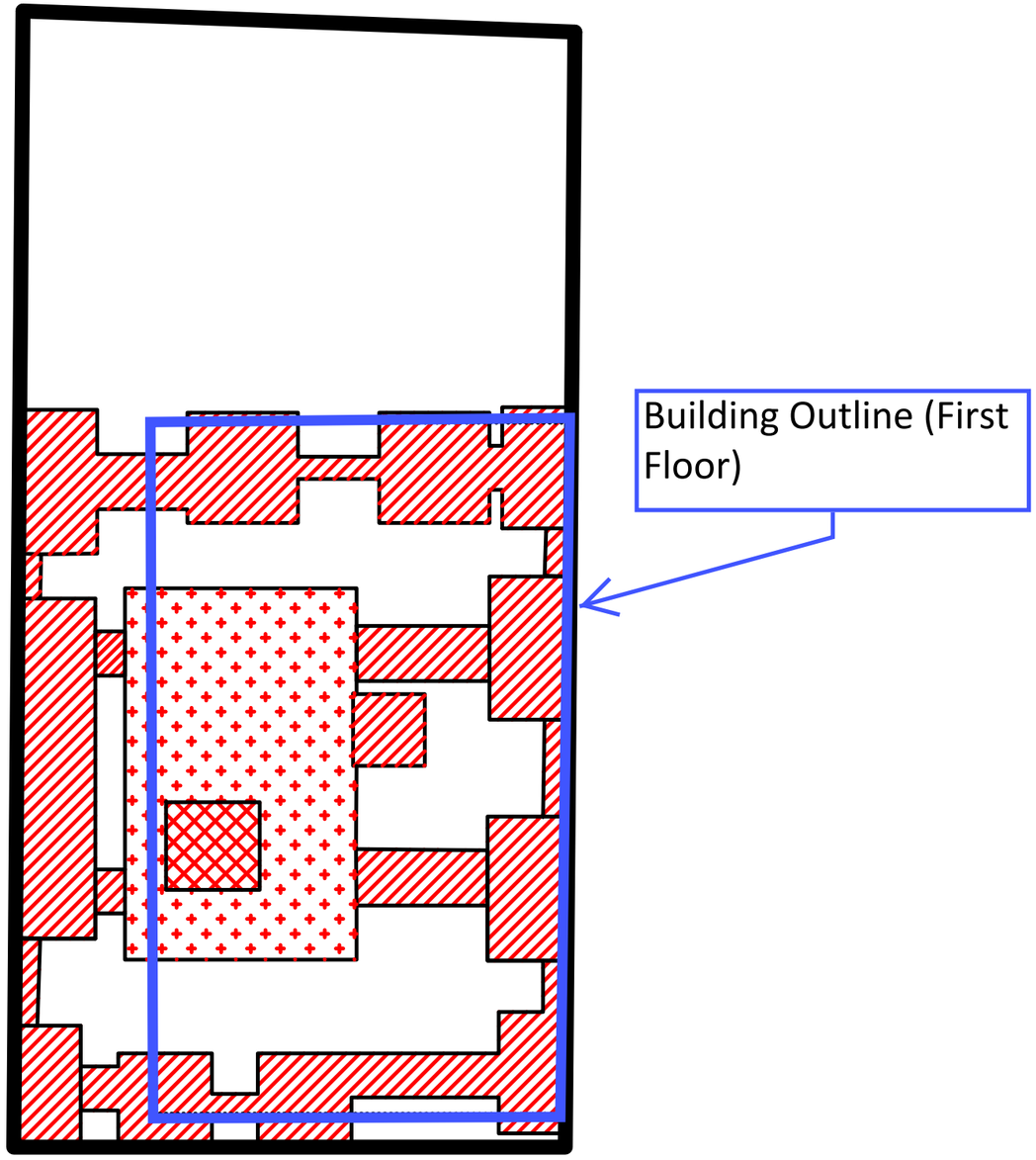
Date:	MARCH 31, 2020
Drawn by:	EVAN GREENBERG
Checked by:	KEN WENZ
Drawing Scale:	AS DRAWN
Project No.:	19-133-1504

Site: 14-54 31st Avenue, Astoria, NY 11106
Remedial Action Report

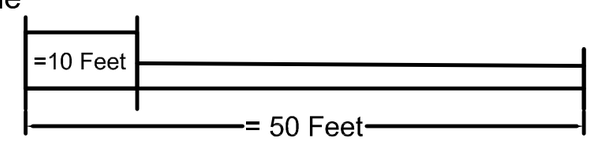
Figure: 3

Title: DEVELOPMENT PLAN





Scale



14-54 31st Avenue

31st Avenue

LEGEND:

- Site Boundary
- Building Outline (First Floor)
- Excavation To 2 Feet Bgs
- Excavation To 7 Feet Bgs For Elevator Pit And Mat Slab
- Excavation Up To 7 Feet Bgs For Mat Slab

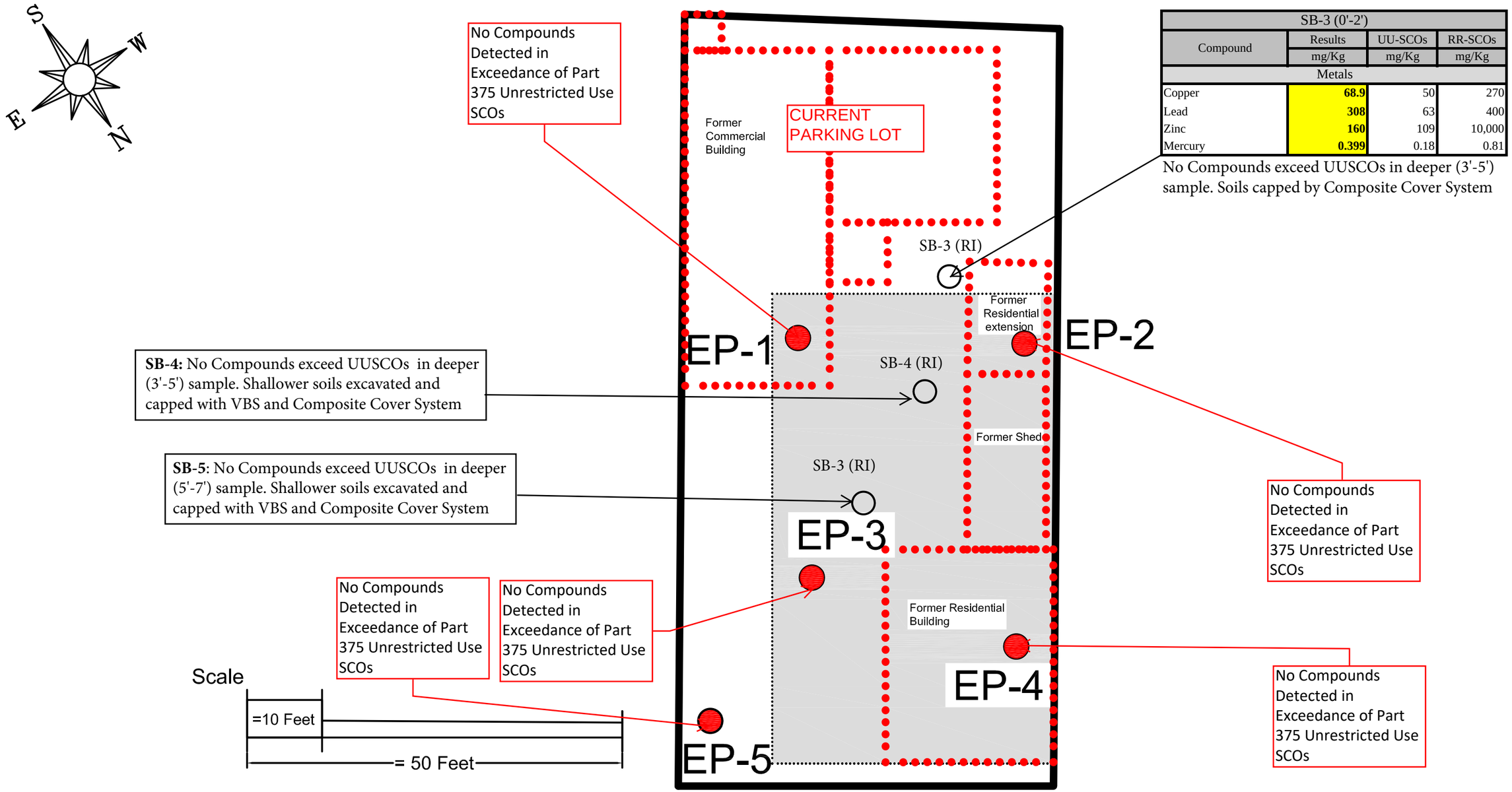
ATHENICA ENVIRONMENTAL SERVICES, INC.
Environmental Engineering Consultants
45-09 GREENPOINT AVENUE
LONG ISLAND CITY, NY 11104
TEL: (718) 784 - 7490
FAX: (718) 784 - 4085

Date:	October 12, 2022
Drawn by:	EVAN GREENBERG
Checked by:	KEN WENZ
Drawing Scale:	AS DRAWN
Project No.:	19-133-1504

Site: 14-54 31st Avenue, Astoria, NY 11106
Remedial Action Report

Figure: 4

Title: MAP OF EXCAVATION LOCATIONS AND DEPTHS



14-54 31st Avenue

31st Avenue

LEGEND:

- Site Boundary
- Building Outline (First Floor)
- Former Buildings Boundary
- EP-X End Point Sample
- Soil Sample (2019 RI)

ATHENICA ENVIRONMENTAL SERVICES, INC.
Environmental Engineering Consultants
45-09 GREENPOINT AVENUE
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TEL: (718) 784 - 7490
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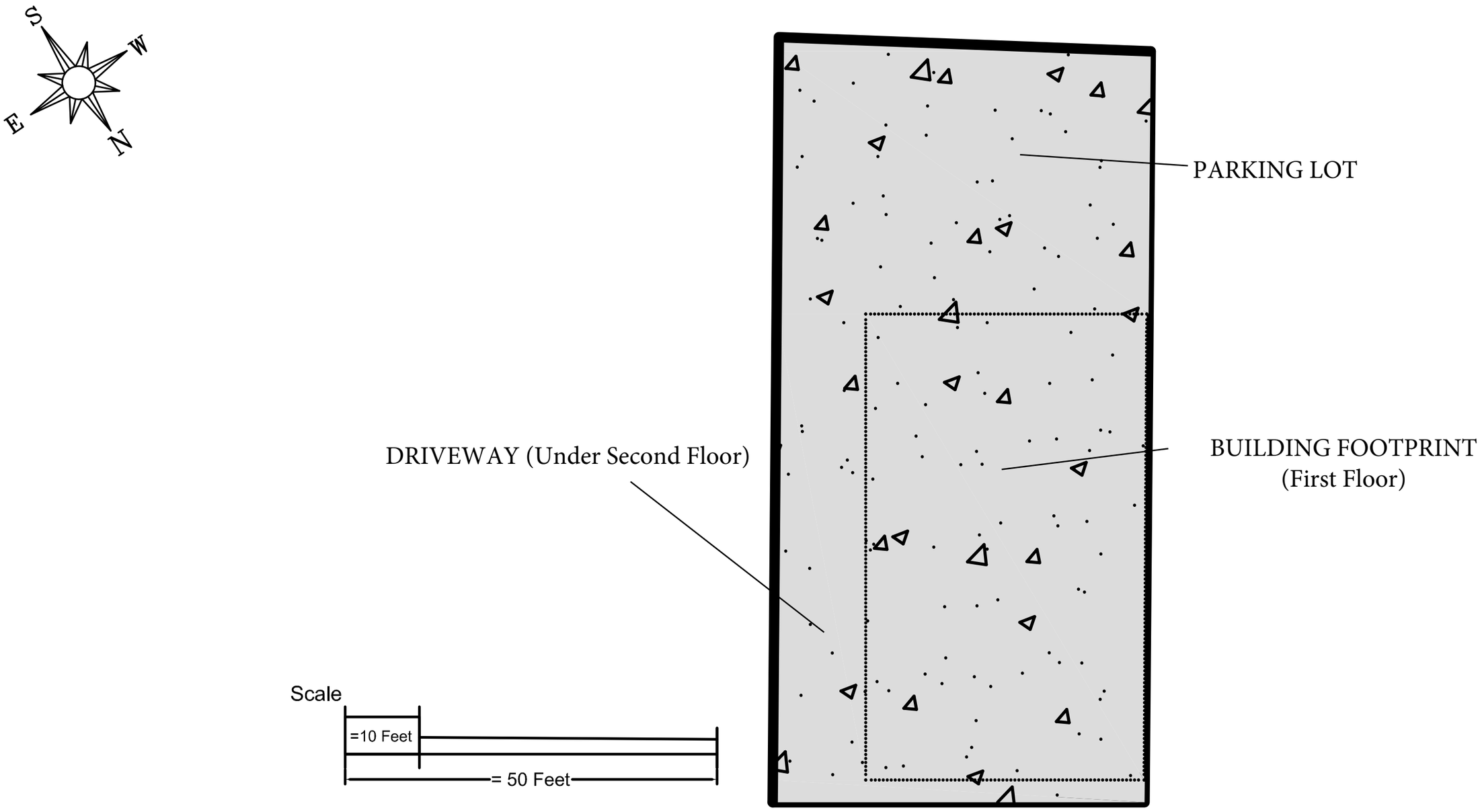
Date:	OCTOBER 12, 2022
Drawn by:	EVAN GREENBERG
Checked by:	KEN WENZ
Drawing Scale:	AS DRAWN
Project No.:	19-133-1504

Site: 14-54 31st Avenue, Astoria, NY 11106
Remedial Action Report

Figure: 5

Title: ENDPOINT SAMPLE LOCATION PLAN



14-54 31st Avenue

31st Avenue

LEGEND:

- Site Boundary
- Proposed Building Outline (First Floor)
- Composite Cover System

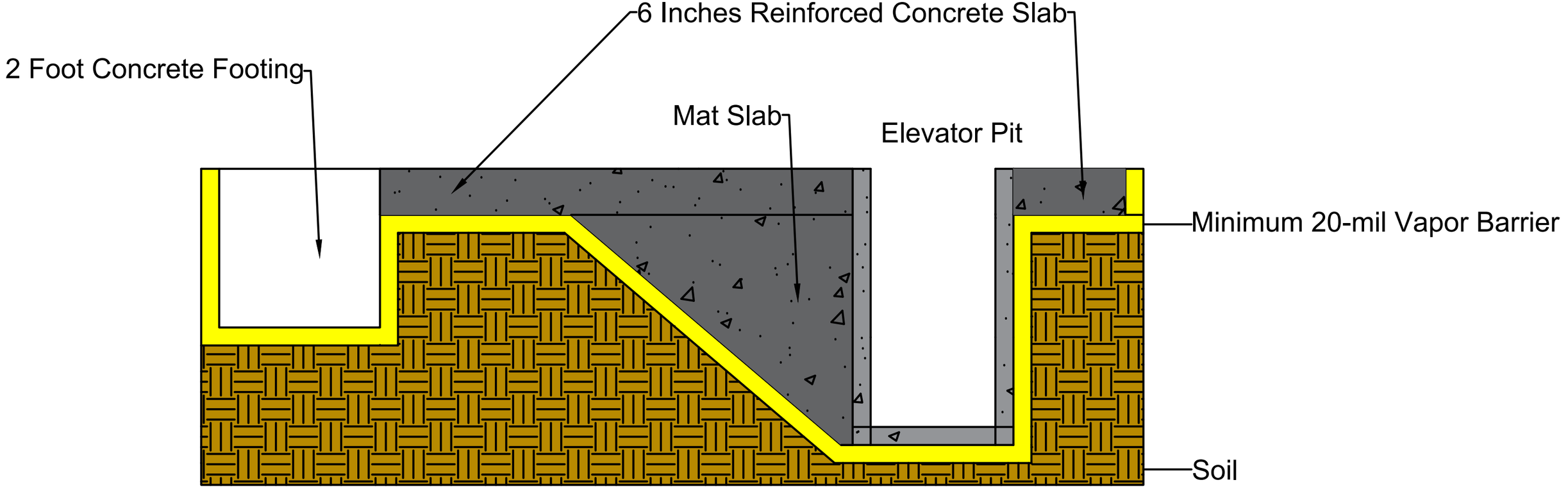
ATHENICA ENVIRONMENTAL SERVICES, INC.
Environmental Engineering Consultants
45-09 GREENPOINT AVENUE
LONG ISLAND CITY, NY 11104
TEL: (718) 784 - 7490
FAX: (718) 784 - 4085

Date:	OCTOBER 12, 2022
Drawn by:	EVAN GREENBERG
Checked by:	KEN WENZ
Drawing Scale:	AS DRAWN
Project No.:	19-133-1504

Site: 14-54 31st Avenue, Astoria, NY 11106
Remedial Action Report

Figure: 6

Title COMPOSITE COVER SYSTEM LOCATIONS



LEGEND:

ATHENICA ENVIRONMENTAL SERVICES, INC.
Environmental Engineering Consultants
45-09 GREENPOINT AVENUE
LONG ISLAND CITY, NY 11104
TEL: (718) 784 - 7490
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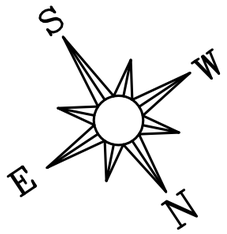
Date:	OCTOBER 12, 2022
Drawn by:	EVAN GREENBERG
Checked by:	KEN WENZ
Drawing Scale:	AS DRAWN
Project No.:	19-133-1504

Site: 14-54 31st Avenue, Astoria, NY 11106
Remedial Action Report

Figure: 7

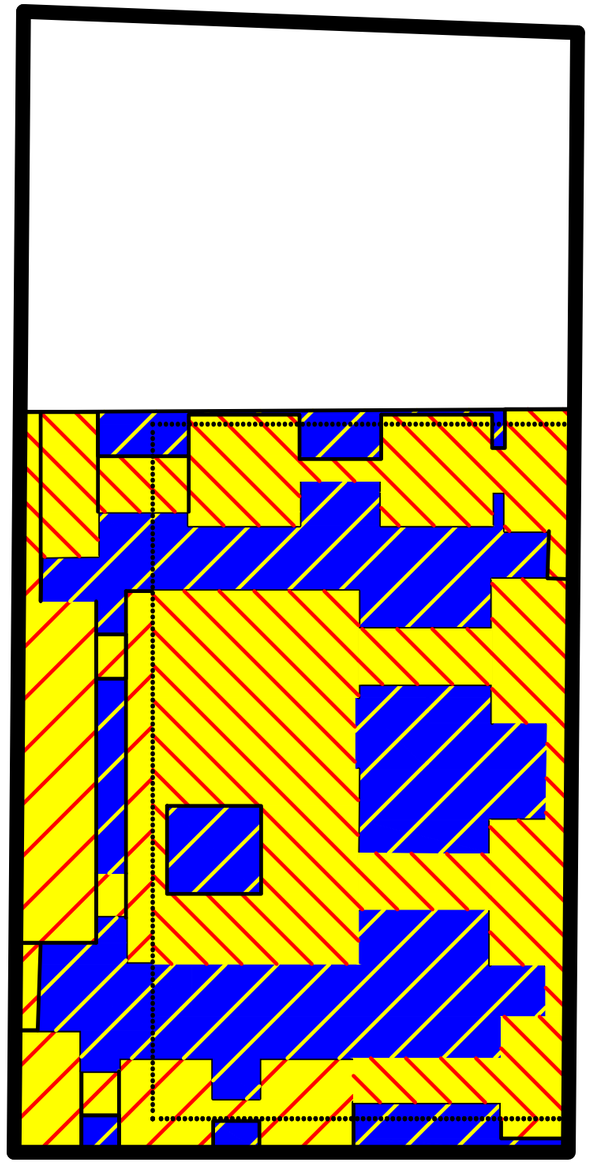
Title: DESIGN DETAILS FOR VAPOR BARRIER SYSTEM AND COMPOSITE COVER SYSTEM



Scale

=10 Feet

= 50 Feet



14-54 31st Avenue

31st Avenue

LEGEND:

- Site Boundary
- 20-mil Vapor Barrier Beneath Footings
- 20-mil Vapor Barrier Beneath Building

ATHENICA ENVIRONMENTAL SERVICES, INC.
Environmental Engineering Consultants

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Remedial Action Work Plan

Figure: 8

Title VAPOR BARRIER SYSTEM LOCATIONS

TABLES

Table 1
14-54 31st Avenue
Queens, New York 11106
Summary of End-Point Analytical Results (VOCs)

Sample ID York ID Sampling Date Client Matrix Depth	NYSDEC Part 375 Unrestricted Use Soil Cleanup Objectives	NYSDEC Part 375 Restricted Use Soil Cleanup Objectives - Restricted Residential	EP-1 21G0098-01 7/1/2022 Soil 2 Feet bgs		EP-2 21G0098-02 7/1/2022 Soil 2 Feet bgs		EP-3 21G0098-03 7/1/2022 Soil 7 Feet bgs		EP-4 21G0098-04 7/1/2022 Soil 2 Feet bgs		EP-5 21G0098-05 7/1/2022 Soil 2 Feet bgs	
Compound			Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Volatile Organics, 8260 - Comprehensive	mg/Kg	mg/Kg	mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg	
Dilution Factor			1		1		1		1		1	
1,1,1,2-Tetrachloroethane	~	~	0.0023	U	0.0017	U	0.0022	U	0.0024	U	0.0032	U
1,1,1-Trichloroethane	0.68	100	0.0023	U	0.0017	U	0.0022	U	0.0024	U	0.0032	U
1,1,2,2-Tetrachloroethane	~	~	0.0023	U	0.0017	U	0.0022	U	0.0024	U	0.0032	U
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	~	~	0.0023	U	0.0017	U	0.0022	U	0.0024	U	0.0032	U
1,1,2-Trichloroethane	~	~	0.0023	U	0.0017	U	0.0022	U	0.0024	U	0.0032	U
1,1-Dichloroethane	0.27	26	0.0023	U	0.0017	U	0.0022	U	0.0024	U	0.0032	U
1,1-Dichloroethylene	0.33	100	0.0023	U	0.0017	U	0.0022	U	0.0024	U	0.0032	U
1,2,3-Trichlorobenzene	~	~	0.0023	U	0.0017	U	0.0022	U	0.0024	U	0.0032	U
1,2,3-Trichloropropane	~	~	0.0023	U	0.0017	U	0.0022	U	0.0024	U	0.0032	U
1,2,4-Trichlorobenzene	~	~	0.0023	U	0.0017	U	0.0022	U	0.0024	U	0.0032	U
1,2,4-Trimethylbenzene	3.6	52	0.0023	U	0.0017	U	0.0022	U	0.0024	U	0.0032	U
1,2-Dibromo-3-chloropropane	~	~	0.0023	U	0.0017	U	0.0022	U	0.0024	U	0.0032	U
1,2-Dibromoethane	~	~	0.0023	U	0.0017	U	0.0022	U	0.0024	U	0.0032	U
1,2-Dichlorobenzene	1.1	100	0.0023	U	0.0017	U	0.0022	U	0.0024	U	0.0032	U
1,2-Dichloroethane	0.02	3.1	0.0023	U	0.0017	U	0.0022	U	0.0024	U	0.0032	U
1,2-Dichloropropane	~	~	0.0023	U	0.0017	U	0.0022	U	0.0024	U	0.0032	U
1,3,5-Trimethylbenzene	8.4	52	0.0023	U	0.0017	U	0.0022	U	0.0024	U	0.0032	U
1,3-Dichlorobenzene	2.4	49	0.0023	U	0.0017	U	0.0022	U	0.0024	U	0.0032	U
1,4-Dichlorobenzene	1.8	13	0.0023	U	0.0017	U	0.0022	U	0.0024	U	0.0032	U
1,4-Dioxane	0.1	13	0.0460	U	0.0340	U	0.0440	U	0.0490	U	0.0650	U
2-Butanone	0.12	100	0.0023	U	0.0017	U	0.0022	U	0.0024	U	0.0032	U
2-Hexanone	~	~	0.0023	U	0.0017	U	0.0022	U	0.0024	U	0.0032	U
4-Methyl-2-pentanone	~	~	0.0023	U	0.0017	U	0.0022	U	0.0024	U	0.0032	U
Acetone	0.05	100	0.0430		0.0034	U	0.0044	U	0.0049	U	0.0065	U
Acrolein	~	~	0.0046	U	0.0034	U	0.0044	U	0.0049	U	0.0065	U
Acrylonitrile	~	~	0.0023	U	0.0017	U	0.0022	U	0.0024	U	0.0032	U
Benzene	0.06	4.8	0.0023	U	0.0017	U	0.0022	U	0.0024	U	0.0032	U
Bromochloromethane	~	~	0.0023	U	0.0017	U	0.0022	U	0.0024	U	0.0032	U
Bromodichloromethane	~	~	0.0023	U	0.0017	U	0.0022	U	0.0024	U	0.0032	U
Bromoform	~	~	0.0023	U	0.0017	U	0.0022	U	0.0024	U	0.0032	U
Bromomethane	~	~	0.0023	U	0.0017	U	0.0022	U	0.0024	U	0.0032	U
Carbon disulfide	~	~	0.0023	U	0.0017	U	0.0022	U	0.0024	U	0.0032	U
Carbon tetrachloride	0.76	2.4	0.0023	U	0.0017	U	0.0022	U	0.0024	U	0.0032	U
Chlorobenzene	1.1	100	0.0023	U	0.0017	U	0.0022	U	0.0024	U	0.0032	U
Chloroethane	~	~	0.0023	U	0.0017	U	0.0022	U	0.0024	U	0.0032	U
Chloroform	0.37	49	0.0023	U	0.0017	U	0.0022	U	0.0024	U	0.0032	U
Chloromethane	~	~	0.0023	U	0.0017	U	0.0022	U	0.0024	U	0.0032	U
cis-1,2-Dichloroethylene	0.25	100	0.0023	U	0.0017	U	0.0022	U	0.0024	U	0.0032	U
cis-1,3-Dichloropropylene	~	~	0.0023	U	0.0017	U	0.0022	U	0.0024	U	0.0032	U
Cyclohexane	~	~	0.0023	U	0.0017	U	0.0022	U	0.0024	U	0.0032	U
Dibromochloromethane	~	~	0.0023	U	0.0017	U	0.0022	U	0.0024	U	0.0032	U
Dibromomethane	~	~	0.0023	U	0.0017	U	0.0022	U	0.0024	U	0.0032	U
Dichlorodifluoromethane	~	~	0.0023	U	0.0017	U	0.0022	U	0.0024	U	0.0032	U
Ethyl Benzene	1	41	0.0023	U	0.0017	U	0.0022	U	0.0024	U	0.0032	U
Hexachlorobutadiene	~	~	0.0023	U	0.0017	U	0.0022	U	0.0024	U	0.0032	U
Isopropylbenzene	~	~	0.0023	U	0.0017	U	0.0022	U	0.0024	U	0.0032	U
Methyl acetate	~	~	0.0023	U	0.0017	U	0.0022	U	0.0024	U	0.0032	U
Methyl tert-butyl ether (MTBE)	0.93	100	0.0023	U	0.0017	U	0.0022	U	0.0024	U	0.0032	U
Methylcyclohexane	~	~	0.0023	U	0.0017	U	0.0022	U	0.0024	U	0.0032	U
Methylene chloride	0.05	100	0.0046	U	0.0034	U	0.0044	U	0.0049	U	0.0065	U
n-Butylbenzene	12	100	0.0023	U	0.0017	U	0.0022	U	0.0024	U	0.0032	U
n-Propylbenzene	3.9	100	0.0023	U	0.0017	U	0.0022	U	0.0024	U	0.0032	U
o-Xylene	~	~	0.0023	U	0.0017	U	0.0022	U	0.0024	U	0.0032	U
p- & m- Xylenes	~	~	0.0046	U	0.0034	U	0.0044	U	0.0049	U	0.0065	U
p-Isopropyltoluene	~	~	0.0023	U	0.0017	U	0.0022	U	0.0024	U	0.0032	U
sec-Butylbenzene	11	100	0.0023	U	0.0017	U	0.0022	U	0.0024	U	0.0032	U
Styrene	~	~	0.0023	U	0.0017	U	0.0022	U	0.0024	U	0.0032	U
tert-Butyl alcohol (TBA)	~	~	0.0023	U	0.0017	U	0.0022	U	0.0024	U	0.0032	U
tert-Butylbenzene	5.9	100	0.0023	U	0.0017	U	0.0022	U	0.0024	U	0.0032	U
Tetrachloroethene (PCE)	1.3	19	0.0023	U	0.0017	U	0.0022	U	0.0024	U	0.0032	U
Toluene	0.7	100	0.0023	U	0.0017	U	0.0022	U	0.0024	U	0.0032	U
trans-1,2-Dichloroethylene	0.19	100	0.0023	U	0.0017	U	0.0022	U	0.0024	U	0.0032	U
trans-1,3-Dichloropropylene	~	~	0.0023	U	0.0017	U	0.0022	U	0.0024	U	0.0032	U
trans-1,4-dichloro-2-butene	~	~	0.0023	U	0.0017	U	0.0022	U	0.0024	U	0.0032	U
Trichloroethene (TCE)	0.47	21	0.0023	U	0.0017	U	0.0022	U	0.0024	U	0.0032	U
Trichlorofluoromethane	~	~	0.0023	U	0.0017	U	0.0022	U	0.0024	U	0.0032	U
Vinyl Chloride	0.02	0.9	0.0023	U	0.0017	U	0.0022	U	0.0024	U	0.0032	U
Xylenes, Total	0.26	100	0.0070	U	0.0051	U	0.0066	U	0.0073	U	0.0097	U

NOTES:
Any Regulatory Exceedences are color coded by Regulation

Q is the Qualifier Column with definitions as follows:
D=result is from an analysis that required a dilution
J=analyte detected at or above the MDL (method detection limit) but below the RL (Reporting Limit) - data is estimated
U=analyte not detected at or above the level indicated
B=analyte found in the analysis batch blank
~=this indicates that no regulatory limit has been established for this analyte

Table 1
14-54 31st Avenue
Queens, New York 11106
Summary of End-Point Analytical Results (SVOCs)

Sample ID			EP-1		EP-2		EP-3		EP-4		EP-5	
York ID			21G0098-01		21G0098-02		21G0098-03		21G0098-04		21G0098-05	
Sampling Date			7/1/2022		7/1/2022		7/1/2022		7/1/2022		7/1/2022	
Client Matrix			Soil		Soil		Soil		Soil		Soil	
Depth	NYSDEC Part 375 Unrestricted Use Soil Cleanup Objectives	NYSDEC Part 375 Restricted Use Soil Cleanup Objectives - Restricted Residential	2 Feet bgs		2 Feet bgs		7 Feet bgs		2 Feet bgs		2 Feet bgs	
Compound			Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Semi-Volatiles, 8270 - Comprehensive	mg/Kg	mg/Kg	mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg	
Dilution Factor			2		2		2		2		2	
1,1-Biphenyl	~	~	0.0498	U	0.0477	U	0.0492	U	0.0455	U	0.0545	U
1,2,4,5-Tetrachlorobenzene	~	~	0.0993	U	0.0951	U	0.0983	U	0.0908	U	0.109	U
1,2,4-Trichlorobenzene	~	~	0.0498	U	0.0477	U	0.0492	U	0.0455	U	0.0545	U
1,2-Dichlorobenzene	1.1	100	0.0498	U	0.0477	U	0.0492	U	0.0455	U	0.0545	U
1,2-Diphenylhydrazine (as Azobenzene)	~	~	0.0498	U	0.0477	U	0.0492	U	0.0455	U	0.0545	U
1,3-Dichlorobenzene	2.4	49	0.0498	U	0.0477	U	0.0492	U	0.0455	U	0.0545	U
1,4-Dichlorobenzene	1.8	13	0.0498	U	0.0477	U	0.0492	U	0.0455	U	0.0545	U
2,3,4,6-Tetrachlorophenol	~	~	0.0993	U	0.0951	U	0.0983	U	0.0908	U	0.109	U
2,4,5-Trichlorophenol	~	~	0.0498	U	0.0477	U	0.0492	U	0.0455	U	0.0545	U
2,4,6-Trichlorophenol	~	~	0.0498	U	0.0477	U	0.0492	U	0.0455	U	0.0545	U
2,4-Dichlorophenol	~	~	0.0498	U	0.0477	U	0.0492	U	0.0455	U	0.0545	U
2,4-Dimethylphenol	~	~	0.0498	U	0.0477	U	0.0492	U	0.0455	U	0.0545	U
2,4-Dinitrophenol	~	~	0.0993	U	0.0951	U	0.0983	U	0.0908	U	0.109	U
2,4-Dinitrotoluene	~	~	0.0498	U	0.0477	U	0.0492	U	0.0455	U	0.0545	U
2,6-Dinitrotoluene	~	~	0.0498	U	0.0477	U	0.0492	U	0.0455	U	0.0545	U
2-Chloronaphthalene	~	~	0.0498	U	0.0477	U	0.0492	U	0.0455	U	0.0545	U
2-Chlorophenol	~	~	0.0498	U	0.0477	U	0.0492	U	0.0455	U	0.0545	U
2-Methylnaphthalene	~	~	0.0498	U	0.0477	U	0.0492	U	0.0455	U	0.0545	U
2-Methylphenol	0.33	100	0.0498	U	0.0477	U	0.0492	U	0.0455	U	0.0545	U
2-Nitroaniline	~	~	0.0993	U	0.0951	U	0.0983	U	0.0908	U	0.109	U
2-Nitrophenol	~	~	0.0498	U	0.0477	U	0.0492	U	0.0455	U	0.0545	U
3- & 4-Methylphenols	0.33	100	0.0498	U	0.0477	U	0.0492	U	0.0455	U	0.0545	U
3,3-Dichlorobenzidine	~	~	0.0498	U	0.0477	U	0.0492	U	0.0455	U	0.0545	U
3-Nitroaniline	~	~	0.0993	U	0.0951	U	0.0983	U	0.0908	U	0.109	U
4,6-Dinitro-2-methylphenol	~	~	0.0993	U	0.0951	U	0.0983	U	0.0908	U	0.109	U
4-Bromophenyl phenyl ether	~	~	0.0498	U	0.0477	U	0.0492	U	0.0455	U	0.0545	U
4-Chloro-3-methylphenol	~	~	0.0498	U	0.0477	U	0.0492	U	0.0455	U	0.0545	U
4-Chloroaniline	~	~	0.0498	U	0.0477	U	0.0492	U	0.0455	U	0.0545	U
4-Chlorophenyl phenyl ether	~	~	0.0498	U	0.0477	U	0.0492	U	0.0455	U	0.0545	U
4-Nitroaniline	~	~	0.0993	U	0.0951	U	0.0983	U	0.0908	U	0.109	U
4-Nitrophenol	~	~	0.0993	U	0.0951	U	0.0983	U	0.0908	U	0.109	U
Acenaphthene	20	100	0.0498	U	0.0477	U	0.0492	U	0.0455	U	0.0545	U
Acenaphthylene	100	100	0.0498	U	0.0477	U	0.0492	U	0.0455	U	0.0545	U
Acetophenone	~	~	0.0498	U	0.0477	U	0.0492	U	0.0455	U	0.0545	U
Aniline	~	~	0.199	U	0.191	U	0.197	U	0.182	U	0.218	U
Anthracene	100	100	0.0498	U	0.0477	U	0.0492	U	0.0455	U	0.0545	U
Atrazine	~	~	0.0498	U	0.0477	U	0.0492	U	0.0455	U	0.0545	U
Benzaldehyde	~	~	0.0498	U	0.0477	U	0.0492	U	0.0455	U	0.0545	U
Benzidine	~	~	0.199	U	0.191	U	0.197	U	0.182	U	0.218	U
Benzo(a)anthracene	1	1	0.0498	U	0.0477	U	0.0492	U	0.127	D	0.0545	U
Benzo(a)pyrene	1	1	0.0498	U	0.0479	JD	0.0492	U	0.134	D	0.0545	U
Benzo(b)fluoranthene	1	1	0.0498	U	0.0477	U	0.0492	U	0.105	D	0.0545	U
Benzo(g,h,i)perylene	100	100	0.0498	U	0.102	D	0.0492	U	0.0704	JD	0.0545	U
Benzo(k)fluoranthene	0.8	3.9	0.0498	U	0.0477	U	0.0492	U	0.0900	JD	0.0545	U
Benzoic acid	~	~	0.0498	U	0.0477	U	0.0492	U	0.0455	U	0.0545	U
Benzyl alcohol	~	~	0.0498	U	0.0477	U	0.0492	U	0.0455	U	0.0545	U
Benzyl butyl phthalate	~	~	0.0498	U	0.0477	U	0.0492	U	0.0455	U	0.0545	U
Bis(2-chloroethoxy)methane	~	~	0.0498	U	0.0477	U	0.0492	U	0.0455	U	0.0545	U
Bis(2-chloroethyl)ether	~	~	0.0498	U	0.0477	U	0.0492	U	0.0455	U	0.0545	U
Bis(2-chloroisopropyl)ether	~	~	0.0498	U	0.0477	U	0.0492	U	0.0455	U	0.0545	U
Bis(2-ethylhexyl)phthalate	~	~	0.0498	U	0.0477	U	0.0492	U	0.0455	U	0.0545	U
Caprolactam	~	~	0.0993	U	0.0951	U	0.0983	U	0.0908	U	0.109	U
Carbazole	~	~	0.0498	U	0.0477	U	0.0492	U	0.0455	U	0.0545	U
Chrysene	1	3.9	0.0498	U	0.0477	U	0.0492	U	0.127	D	0.0545	U
Dibenzo(a,h)anthracene	0.33	0.33	0.0498	U	0.0477	U	0.0492	U	0.0455	U	0.0545	U
Dibenzofuran	7	59	0.0498	U	0.0477	U	0.0492	U	0.0455	U	0.0545	U
Diethyl phthalate	~	~	0.0498	U	0.0616	JD	0.0492	U	0.0455	U	0.0545	U
Dimethyl phthalate	~	~	0.0498	U	0.0477	U	0.0492	U	0.0455	U	0.0545	U
Di-n-butyl phthalate	~	~	0.0498	U	0.0477	U	0.0492	U	0.0455	U	0.0545	U
Di-n-octyl phthalate	~	~	0.0498	U	0.0477	U	0.0492	U	0.0455	U	0.0545	U
Diphenylamine	~	~	0.0993	U	0.0951	U	0.0983	U	0.0908	U	0.109	U
Fluoranthene	100	100	0.0498	U	0.0477	U	0.0492	U	0.255	D	0.0545	U
Fluorene	30	100	0.0498	U	0.0477	U	0.0492	U	0.0455	U	0.0545	U
Hexachlorobenzene	0.33	1.2	0.0498	U	0.0477	U	0.0492	U	0.0455	U	0.0545	U
Hexachlorobutadiene	~	~	0.0498	U	0.0477	U	0.0492	U	0.0455	U	0.0545	U
Hexachlorocyclopentadiene	~	~	0.0498	U	0.0477	U	0.0492	U	0.0455	U	0.0545	U
Hexachloroethane	~	~	0.0498	U	0.0477	U	0.0492	U	0.0455	U	0.0545	U
Indeno(1,2,3-cd)pyrene	0.5	0.5	0.0498	U	0.110	D	0.0492	U	0.0908	D	0.0545	U
Isophorone	~	~	0.0498	U	0.0477	U	0.0492	U	0.0455	U	0.0545	U
Naphthalene	12	100	0.0498	U	0.0477	U	0.0492	U	0.0455	U	0.0545	U
Nitrobenzene	~	~	0.0498	U	0.0477	U	0.0492	U	0.0455	U	0.0545	U
N-Nitrosodimethylamine	~	~	0.0498	U	0.0477	U	0.0492	U	0.0455	U	0.0545	U
N-nitroso-di-n-propylamine	~	~	0.0498	U	0.0477	U	0.0492	U	0.0455	U	0.0545	U
N-Nitrosodiphenylamine	~	~	0.0498	U	0.0477	U	0.0492	U	0.0455	U	0.0545	U
Pentachlorophenol	0.8	6.7	0.0498	U	0.0477	U	0.0492	U	0.0455	U	0.0545	U
Phenanthrene	100	100	0.0498	U	0.0477	U	0.0492	U	0.144	D	0.0545	U
Phenol	0.33	100	0.0498	U	0.0477	U	0.0492	U	0.0455	U	0.0545	U
Pyrene	100	100	0.0498	U	0.0477	U	0.0492	U	0.237	D	0.0545	U

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Table 1
14-54 31st Avenue
Queens, New York 11106
Summary of End-Point Analytical Results (Pesticides and PCBs)

Sample ID York ID Sampling Date Client Matrix Depth	NYSDEC Part 375 Unrestricted Use Soil Cleanup Objectives	NYSDEC Part 375 Restricted Use Soil Cleanup Objectives - Restricted Residential	EP-1 21G0098-01 7/1/2022 Soil 2 Feet bgs		EP-2 21G0098-02 7/1/2022 Soil 2 Feet bgs		EP-3 21G0098-03 7/1/2022 Soil 7 Feet bgs		EP-4 21G0098-04 7/1/2022 Soil 2 Feet bgs		EP-5 21G0098-05 7/1/2022 Soil 2 Feet bgs	
Compound			Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Pesticides, 8081 target list	mg/Kg	mg/Kg	mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg	
Dilution Factor			5		5		5		5		5	
4,4'-DDD	0.0033	13	0.0020	U	0.00187	U	0.00194	U	0.0018	U	0.00214	U
4,4'-DDE	0.0033	8.9	0.0020	U	0.00187	U	0.00194	U	0.0018	U	0.00214	U
4,4'-DDT	0.0033	7.9	0.0020	U	0.00187	U	0.00194	U	0.0018	U	0.00214	U
Aldrin	0.005	0.097	0.0020	U	0.00187	U	0.00194	U	0.0018	U	0.00214	U
alpha-BHC	0.02	0.48	0.0020	U	0.00187	U	0.00194	U	0.0018	U	0.00214	U
alpha-Chlordane	0.094	4.2	0.0020	U	0.00187	U	0.00194	U	0.0018	U	0.00214	U
beta-BHC	0.036	0.36	0.0020	U	0.00187	U	0.00194	U	0.0018	U	0.00214	U
Chlordane, total	~	~	0.0401	U	0.0374	U	0.0389	U	0.0359	U	0.0428	U
delta-BHC	0.04	100	0.0020	U	0.00187	U	0.00194	U	0.0018	U	0.00214	U
Dieldrin	0.005	0.2	0.0020	U	0.00187	U	0.00194	U	0.0018	U	0.00214	U
Endosulfan I	2.4	24	0.0020	U	0.00187	U	0.00194	U	0.0018	U	0.00214	U
Endosulfan II	2.4	24	0.0020	U	0.00187	U	0.00194	U	0.0018	U	0.00214	U
Endosulfan sulfate	2.4	24	0.0020	U	0.00187	U	0.00194	U	0.0018	U	0.00214	U
Endrin	0.014	11	0.0020	U	0.00187	U	0.00194	U	0.0018	U	0.00214	U
Endrin aldehyde	~	~	0.0020	U	0.00187	U	0.00194	U	0.0018	U	0.00214	U
Endrin ketone	~	~	0.0020	U	0.00187	U	0.00194	U	0.0018	U	0.00214	U
gamma-BHC (Lindane)	0.1	1.3	0.0020	U	0.00187	U	0.00194	U	0.0018	U	0.00214	U
gamma-Chlordane	~	~	0.0020	U	0.00187	U	0.00194	U	0.0018	U	0.00214	U
Heptachlor	0.042	2.1	0.0020	U	0.00187	U	0.00194	U	0.0018	U	0.00214	U
Heptachlor epoxide	~	~	0.0020	U	0.00187	U	0.00194	U	0.0018	U	0.00214	U
Methoxychlor	~	~	0.0100	U	0.00935	U	0.00972	U	0.00899	U	0.0107	U
Toxaphene	~	~	0.101	U	0.0946	U	0.0984	U	0.0909	U	0.108	U
Polychlorinated Biphenyls (PCB)	mg/Kg	mg/Kg	mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg	
Dilution Factor			1		1		1		1		1	
Aroclor 1016	~	~	0.0202	U	0.0189	U	0.0196	U	0.0181	U	0.0216	U
Aroclor 1221	~	~	0.0202	U	0.0189	U	0.0196	U	0.0181	U	0.0216	U
Aroclor 1232	~	~	0.0202	U	0.0189	U	0.0196	U	0.0181	U	0.0216	U
Aroclor 1242	~	~	0.0202	U	0.0189	U	0.0196	U	0.0181	U	0.0216	U
Aroclor 1248	~	~	0.0202	U	0.0189	U	0.0196	U	0.0181	U	0.0216	U
Aroclor 1254	~	~	0.0202	U	0.0189	U	0.0196	U	0.0181	U	0.0216	U
Aroclor 1260	~	~	0.0202	U	0.0189	U	0.0196	U	0.0181	U	0.0216	U
Total PCBs	0.1	1	0.0202	U	0.0189	U	0.0196	U	0.0181	U	0.0216	U

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Table 1
14-54 31st Avenue
Queens, New York 11106
Summary of End-Point Analytical Results (Metals)

Sample ID York ID Sampling Date Client Matrix Depth	NYSDEC Part 375 Unrestricted Use Soil Cleanup Objectives	NYSDEC Part 375 Restricted Use Soil Cleanup Objectives - Restricted Residential	EP-1 21G0098-01 7/1/2022 Soil 2 Feet bgs		EP-2 21G0098-02 7/1/2022 Soil 2 Feet bgs		EP-3 21G0098-03 7/1/2022 Soil 7 Feet bgs		EP-4 21G0098-04 7/1/2022 Soil 2 Feet bgs		EP-5 21G0098-05 7/1/2022 Soil 2 Feet bgs	
Compound			Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Metals, Target Analyte	mg/Kg	mg/Kg	mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg	
Dilution Factor			1		1		1		1		1	
Aluminum	~	~	15,200		15,100		12,200		14,400		18,100	
Antimony	~	~	3.050	U	2.880	U	2.980	U	2.770	U	3.280	U
Arsenic	13	16	6.940		6.580		9.580		5.180		4.450	
Barium	350	400	49.500		54.600		36.100		69.100		62.100	
Beryllium	7.2	72	0.0610	U	0.0580	U	0.0600	U	0.0550	U	0.0660	U
Cadmium	2.5	4.3	0.365	U	0.346	U	0.357	U	0.332	U	0.393	U
Calcium	~	~	927	B	1,490	B	1,290	B	5,210	B	2,170	B
Chromium	~	~	19.400		20.800		19.300		24.200		60.100	
Cobalt	~	~	6.390		10		7.200		12		14.300	
Copper	50	270	11.900		21.100		19.100		24.700		30.800	
Iron	~	~	22,900		25,700		27,100		23,100		33,000	
Lead	63	400	11.700		20.100		39.100		57.500		8.280	
Magnesium	~	~	3,100		3,910		2,900		5,850		11,400	
Manganese	1600	2000	167		320		187		514		304	
Nickel	30	310	13.400		14.500		13.400		20.700		26.900	
Potassium	~	~	1,080		1,530		1,340		1,800		2,470	
Selenium	3.9	180	3.050	U	2.880	U	2.980	U	2.770	U	3.280	U
Silver	2	180	0.609	U	0.576	U	0.595	U	0.554	U	0.656	U
Sodium	~	~	60.900	U	57.600	U	59.500	U	79.400		150	
Thallium	~	~	3.050	U	2.880	U	2.980	U	2.770	U	3.280	U
Vanadium	~	~	27.700		31.900		28.600		34.700		51.500	
Zinc	109	10000	40.100		59.400		65.500		85.800		76	
Mercury by 7473	mg/Kg	mg/Kg	mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg	
Dilution Factor			1		1		1		1		1	
Mercury	0.18	0.81	0.0365	U	0.0346	U	0.0357	U	0.0332	U	0.0393	U

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Table 2
14-54 31st Avenue
Queens, New York 11106
Disposal Quantities and Disposal Facilities

Truck	Date	Manifest #	Trucking Company	License Plate	Quantity (Tons)	Receiving Facility	Material Type	On-Site Grid
1	6/30/2021	12300	Mendez 58	AU937Z	27.47	Harmony Belvidere Road	Historic Fill	Rear Yard and Central
2	6/30/2021	12301	Mendez 28	AU550Z	28.47	Harmony Belvidere Road	Historic Fill	Rear Yard and Central
3	6/30/2021	12302	Mendez 500	AS531D	27.49	Harmony Belvidere Road	Historic Fill	Rear Yard and Central
4	6/30/2021	12303	Mendez 200	AS353M	28.56	Harmony Belvidere Road	Historic Fill	Rear Yard and Central
5	6/30/2021	12304	Mendez 78	AS756P	26.93	Harmony Belvidere Road	Historic Fill	Rear Yard and Central
6	6/30/2021	12305	Mendez 57	AS269R	27.95	Harmony Belvidere Road	Historic Fill	Rear Yard and Central
7	6/30/2021	12306	Mendez 300	AS530D	29.39	Harmony Belvidere Road	Historic Fill	Rear Yard and Central
8	6/30/2021	12307	Mendez 49	AT558B	28.51	Harmony Belvidere Road	Historic Fill	Rear Yard and Central
9	6/30/2021	12308	Mendez 22	AW611B	28.98	Harmony Belvidere Road	Historic Fill	Rear Yard and Central
10	6/30/2021	12309	Mendez 600	AS521B	29.84	Harmony Belvidere Road	Historic Fill	Rear Yard and Central
11	6/30/2021	12310	Mendez 40	AW526V	28.36	Harmony Belvidere Road	Historic Fill	Rear Yard and Central
12	6/30/2021	12311	Mendez 36	AW837F	28.46	Harmony Belvidere Road	Historic Fill	Rear Yard and Central
13	6/30/2021	12312	Mendez 80	AW833L	28.64	Harmony Belvidere Road	Historic Fill	Rear Yard and Central
14	6/30/2021	12313	Mendez 288	AS763L	29.56	Harmony Belvidere Road	Historic Fill	Rear Yard and Central
15	6/30/2021	12314	Mendez 70	AW582M	30.22	Harmony Belvidere Road	Historic Fill	Rear Yard and Central
16	7/1/2021	12326	Mendez 70	AW582M	30.4	Harmony Belvidere Road	Historic Fill	Rear Yard and Central
17	7/1/2021	12327	Mendez 84	AW654G	28.84	Harmony Belvidere Road	Historic Fill	Rear Yard and Central
18	7/1/2021	12328	Mendez 24	AW612B	31.04	Harmony Belvidere Road	Historic Fill	Rear Yard and Central
19	7/1/2021	12329	Mendez 90	AW834C	30.1	Harmony Belvidere Road	Historic Fill	Rear Yard and Central
20	7/1/2021	12330	Mendez 76	AW583M	32.24	Harmony Belvidere Road	Historic Fill	Rear Yard and Central
21	7/1/2021	12331	Mendez 89	AS354M	30.24	Harmony Belvidere Road	Historic Fill	Front Yard
22	7/1/2021	12332	Mendez 3	AW652G	28.41	Harmony Belvidere Road	Historic Fill	Front Yard
23	7/1/2021	12333	Mendez 60	AW838F	32.68	Harmony Belvidere Road	Historic Fill	Front Yard
24	7/1/2021	12334	Mendez 99	AW549H	34.45	Harmony Belvidere Road	Historic Fill	Front Yard
25	7/1/2021	12335	Mendez 200	AS353M	31.52	Harmony Belvidere Road	Historic Fill	Front Yard
26	7/1/2021	12336	Mendez 58	AU937Z	28.39	Harmony Belvidere Road	Historic Fill	Front Yard
27	7/1/2021	12337	Mendez 21	AU877Z	29.71	Harmony Belvidere Road	Historic Fill	Front Yard

Total Tonnage	796.85 Tons