GEI Consultants

Consulting
Engineers and
Scientists

October 13, 2022
Project 2203514

Mr. Isidoro Albino
Sr. Operations Manager, Retail Mall
Empire Outlets
35B Richmond Terrace, Suite MGMT
Staten Island, New York 10301

Dear Mr. Albino:

Re: Annual Inspection Methane Monitoring System and Sub-Slab Depressurization System
Empire Outlets
55 Richmond Terrace, Staten Island, NY

GEI Consultants, Inc., P.C. (GEI) is pleased to submit this report describing the annual inspection activities completed for the methane monitoring system and the sub-slab depressurization system (SSDS) for the Empire Outlets at St. George, Staten Island, New York (the Site). The Site is part of the New York State Brownfield Cleanup Program (BCP), and the remedial action, approved for the Site by the New York State Department of Environmental Conservation (NYSDEC), required the implementation of engineering controls (EC) intended to address potential vapor intrusion into the buildings constructed as part of the site redevelopment. As described in the Site Management Plan (SMP) prepared for the Site by AKRF in 2016, the vapor intrusion mitigation requirements include a passive SSDS and a methane monitoring system.

This annual report is focused on the operation, maintenance, and monitoring activities performed during the reporting period. The SSDS and site cover system were inspected on September 14, 2022. The methane monitoring system was calibrated and bump tested on September 28, 2022.

Site Description

The Site, situated on the waterfront between the Richmond County Bank Ballpark and the Staten Island Ferry in the St. George area of Staten Island, comprises a multi-level shopping mall and attached parking. The building is supported by piles. The slab elevation of Parking Level 1 (P1) is approximately 5 ft lower than the elevation of the Retail Level 1 (R1) slab. Due to the presence of shallow groundwater, GEI understands that the P1 slab is designed to withstand hydrostatic pressure. There are no subsurface structures below the slabs. The floor of Parking Level 2 (P2), which sits above P1, is approximately 9 ft above the P1 floor.

The passive SSDS is comprised of perforated PVC piping placed in a layer of crushed stone beneath the floor slab in R1. Vapors that may accumulate beneath the slab are directed to the building roof by solid risers that vent to the atmosphere. Vapor barriers are installed on the bottom of the R1 and P1 slabs to mitigate the potential for vapors to migrate from the subsurface

into buildings. At the Empire Outlets, these vapors include volatile organic compounds (VOC) and methane.

The methane monitoring system is installed in the eight retail spaces located on R1, and in two enclosed spaces in P1. The retail location currently occupied by a Haagen-Dazs ice cream store is a stand-alone structure, and the conduit that connects the detector in that store to the control panel is underground. Each of the other monitored locations is part of the main retail and parking structure.

The methane monitoring system is comprised of three components: sensors that are specifically designed to detect methane as a percent of the lower explosive limit (% LEL); a control panel with integrated audible and visual alarms that allow an operator to monitor multiple sensor locations; and communication cables that connect the sensors to the control panels.

The methane monitoring system is manufactured by Honeywell and includes the Sensepoint XCL detector and the 301C Controller. The Sensepoint XCL is designed to detect combustible gasses in a range from 0 to 100% LEL, calibrated to methane. Each sensor is fitted with a port that allows the sensor to be routinely bump tested and calibrated. Bump testing is a qualitative assessment to ensure that system components are functioning, whereas calibration ensures that readings made by sensors are accurate. In addition, the sensors include an LED status indicator facilitating confirmation of the operating condition of the sensor.

Annual Inspection

Annual inspections and post-construction Operations, Monitoring and Maintenance (OM&M) activities are described in the Site-specific OM&M Manual and the SMP. As required for all sites in the BCP that incorporate ECs, the SMP requires an annual inspection of ECs installed at the site, and that the inspection be documented in a report submitted to DEC.

The inspection was conducted in accordance with Section 3.3 of the OM&M Manual and Sections 3.2, 3.3, 4.3 and 4.4 of the SMP and included:

- Observations of the integrity of the cover system.
- Visual inspection of accessible parts of the SSDS, principally SSDS monitoring points.
- Monitoring indoor air quality using a hand-held meter to measure percent methane by volume, concentrations of combustible gases (LEL) and percent oxygen.
- Using a hand-held meter to monitor sub-slab vapor for percent methane by volume, LEL and percent oxygen at installed vapor monitoring points.
- Review of maintenance and repairs made to the system during the prior year.
- Inspection, testing and calibration of the methane detection sensors and the system controller in accordance with the manufacturer's recommendations.

Cover System

Visual inspection of the integrity of the site cover system was performed on September 14, 2022. The cover system consists of building slabs with vapor barrier, and paving materials along the waterfront esplanade. Although minor cracks were observed in the floor of the parking structure, no evidence of significant damage to the site cover or soil disturbance activities was observed. Facilities management at the site informed GEI that no soil disturbing activities have been

performed, and no new penetrations of the building slabs have been made. A copy of the Site-Wide Inspection Form completed onsite is included in Appendix A. Photo documentation of the condition of the cover system is included in Appendix B.

Sub-Slab Depressurization System (SSDS)

All accessible parts of the SSDS were visually inspected on September 14, 2022. Six vapor monitoring points (MP-1 through MP-6) were opened and found to be in good condition. The headspace of each monitoring point was screened with a multi-gas meter, with the exception of MP-2, which requires a quick connect fitting that was not available during this inspection. Soil vapor at MP-2 will be screened using the multi-gas meter during the next quarterly inspection scheduled for December 2022. The multi-gas meter used was a Rae Systems MultiRAE, serial number M01EA01926. No field detections of VOCs or methane were observed in any of the monitoring points. Soil vapor screening data is recorded on the SSDS Inspection Form, included in Appendix A. Photos documenting the condition of the monitoring points are included in Appendix B.

Six SSDS roof vents (VR-1 through VR-6) were visually inspected and found to be in good condition. Photos documenting the condition of the roof vents are included in Appendix B.

Indoor Air Quality Screening

On September 28, 2022, GEI performed indoor air quality screening for methane and VOCs using a multi-gas meter in each room of the R1 and P1 spaces. The multi-gas meter used was a Rae Systems MultiRAE, serial number M01EA01926. The handheld meter was used to screen indoor air in the breathing zone throughout each space and at each methane detector location.

Methane and VOCs were not detected in any of the monitored locations. A copy of the indoor air screening log is included in Appendix A.

Quarterly Methane Detector Bump Testing and Calibration

On September 28, 2022, GEI performed bump testing of the methane monitoring system. Each detector was tested using vendor supplied calibration gas containing methane at a concentration of 50% LEL. Direct readings were obtained from each detector by connecting to the detector via Bluetooth using the Honeywell Sensepoint mobile app.

Three methane detectors registered positive readings (minimum 6.0% LEL, maximum 9.0% LEL) in ambient indoor air. The locations of these detectors were the fuel oil room, Lids back of house, and Haagen-Dazs front of house. Ambient air in these detector locations was monitored with the MultiRAE, which did not detect methane at these locations, suggesting that the detections in these locations were not accurate.

In addition, most detectors responded to the 50% LEL bump test gas with readings between 20 and 40% LEL, which is outside the ±20% tolerance. This indicated that the detectors required calibration according to the manufacturer's requirements. With the exception of the Haagen-Dazs front-of-house tenant space, all detectors including those located in the Lids back of house and the fuel oil room, were field calibrated using a two-point calibration to 0% LEL (ambient indoor air) and 50% LEL (vendor supplied calibration gas). Following calibration, the detectors passed an additional bump test and no longer registered false positive readings. Bump testing data are included in Appendix A.

The methane detector located in the Haagen-Dazs front-of-house tenant space could not be calibrated because connection to the detector could not be established using the Sensepoint mobile app. The system installer (Donovan Electric) has consulted with the manufacturer (Honeywell) and will replace the sensor. When the replacement sensor is installed, it will be bump tested to verify proper calibration.

Follow-up Inspection

The next anticipated site inspection is the quarterly methane monitoring system bump test scheduled for December 2022.

Please contact Henry Gold (917-836-2011 or hgold@geiconsultants) or Gary Rozmus (631-988-3089 or grozmus@geiconsultants.com) if you have any questions.

Sincerely,

GEI CONSULTANTS, INC., P.C.

Henry Gold
Senior Environmental Professional

Gary A. Rozmus, P.E.
Senior Consultant

Attachments

I:\Tech\Environmental Projects\Madison Marquette\Inspections\Annual Inspection Report 2022.10.13.docx

Appendix A

Site Inspection Forms

Site-Wide Inspection Form
Ballpark at St. George Stadium Site (VCA Site No. V-00228)
1 Bank Street, Staten Island, NY

Inspector: Michael Bohuski

Date: 9/14/22

1. Site Use Restrictions

No on-site vegetable gardens?

No

No groundwater withdrawal for potable/non-potable use?

No

Restricted commercial use maintained?

Yes

2. Site Cap

Note the date that the annual site cover inspection was performed:

9/14/22

Repairs made as noted during inspection?

N/A

3. Soil Management

Note the date(s) of any soil disturbance activities conducted during the past year:

None

Proper soil management procedures implemented (cite appropriate close-out reports)?

N/A

4. Recordkeeping

Check that the following records/reports are being maintained/completed (note report/log dates as appropriate):

1) Annual site cover inspection log

First annual.

2) Close-out report(s) for soil disburbance activities (including manifests for soil disposal)

N/A

5. Comments

(Note any deficiencies and recommendations for corrective actions.)

None.

SUB-SLAB DEPRESSURIZATION SYSTEM INSPECTION FORM

BALLPARK AT ST. GEORGE STADIUM SITE - VCA Site No. V-00228

Inspector Name: Michael Bohuski	**Date:** 9/14/22
Time IN: 9:30	**Time OUT:** 12:45

GENERAL

Weather: Sunny Temperature: 67°F (H 81°F) Barometric Pressure: 29.95 inHg

When was the last rain event? 9/12/22

Are all system fans operating? Yes / No (N/A) (circle one)

If no, please list:

Any evidence of system tampering, vandalism or damage? None

Are all cleanout/sampling port caps securely attached? Yes

If no, please list location and corrective action: N/A

BALLPARK SSDS/FAN OPERATIONS (IF APPLICABLE)

LOCATION	Vacuum Below Fan "H_2O	PID ppb	Methane [1] %	LEL %	O2/CO2 %	Notes
1st base side vents - East 1 (easternmost)						
1st base side vents - East 2						
1st base side vents - East 3						
1st base side vents - East 4 (westernmost)						
3rd base side vents - West 1 (easternmost)						
3rd base side vents - West 2						
3rd base side vents - West 3						
3rd base side vents - West 4 (westernmost)						
Interior enclosed spaces						

Comments:

TERMINAL BUILDING SSDS/FAN OPERATIONS (IF APPLICABLE)

LOCATION	Vacuum Below Fan "H_2O	PID ppb	Methane [1] %	LEL %	O2/CO2 %	Notes

Comments:

SUB-SLAB DEPRESSURIZATION SYSTEM INSPECTION FORM

BALLPARK AT ST. GEORGE STADIUM SITE - VCA Site No. V-00228

EMPIRE OUTLETS SSDS/FAN OPERATIONS (IF APPLICABLE)

	LOCATION	Vacuum Below Fan "H_2O	PID ~~ppb~~ ppm	Methane [1] %	LEL %	O2/CO2 %	Notes
12:00	MP-1		0.0		0	20.9	
11:56	MP-2		—		—	—	Need quick connect
11:40	MP-3		0.1		0	20.9	
11:41	MP-4		0.1		0	20.9	
11:44	MP-5		0.0		0	20.9	
	~~Roof Vent~~						
11:46	MP-6		0.0		0	20.9	

Comments: Took photos: 3 & 4, 5, 6, 2, 1

Notes:
1. Any methane levels above 3% by volume should be reported to AKRF immediately.
1. Normal oxygel level is 19.5 - 21% in ambient air.

CONDITION OF FOUNDATION SLABS

Are there any signs of cracking or other damage? Yes / No (circle one)

If yes, please list:

Recommended corrective action:

None

Annual Indoor Air Quality Screening
Methane Monitoring System: Operation, Maintenance, and Monitoring Manual
Empire Outlet Shops
55 Richmond Terrace
Staten Island, New York
NYSDEC Site ID No. V-00228

WED
9/28/22

Time	Location	VOCs [ppm]	Methane [%LEL]	Oxygen [%O2]	Notes
1120	Bake Culture	0.1	0	20.9	
1225	Haagen Dazs	0.0	0	20.9	
1036	Lids	0.1	0	20.9	
1052	Starbucks	0.1	0	20.9	
1136	Walgreens	0.0	0	20.9	
1105	Wetzels Pretzels	0.0	0	20.9	
1020	Vacant Unit #102A	0.0	0	20.9	
1152	Vacant Unit #104	0.0	0	20.9	
1158	Guard Booth	0.0	0	20.9	
0930	Fuel Oil Room	0.0	0	20.9	
0920	P1	0.0	0	20.9	

Note:
1. LEL = lower explosive limit

Semi-annual Methane Gas Detector Bump Test
Methane Monitoring System: Operation, Maintenance, and Monitoring Manual
Empire Outlet Shops
55 Richmond Terrace
Staten Island, New York
NYSDEC Site ID No. V-00228

9/28/22

	Methane Gas Detectors						
	Sensor #	Location	Initial (% LEL)	Bump Test (% LEL)	Condition Satisfactory (check one) Yes	Condition Satisfactory (check one) No	Notes (describe status if not satisfactory: requires maintenance or repair, etc)
1120	1	Bake Culture - Front	0	45		✓	Recalibrated, 0/50
1126	2	Bake Culture - Rear	0	35		✓	Recalibrated, 0/49
1230	3	Haagen Dazs - Front	9	43		✓	Not connecting via Bluetooth – Bump tested using controller display
1225	4	Haagen Dazs - Rear	0	41		✓	Recalibrated, 0/50
1036	5	Lids - Front	0	20		✓	Recalibrated, 0/50
1045	6	Lids - Rear	8	24		✓	Recalibrated, 0/50
1053	7	Starbucks - Front	0	22		✓	Recalibrated, 0/50
1058	8	Starbucks - Rear	0	30		✓	Recalibrated, 0/50
1136	9	Walgreens - Front	0	27		✓	Recalibrated, 0/50
1142	10	Walgreens - Rear	0	29		✓	Recalibrated, 0/50
1105	11	Wetzels Pretzels - Front	0	32		✓	Recalibrated, 0/50
1113	12	Wetzels Pretzels - Rear	0	36		✓	Recalibrated, 0/50
1020	13	Vacant Unit #102A	0	30		✓	Recalibrated, 0/50
1152	14	Vacant Unit #104	0	47		✓	~~Access~~ Recalibrated, 0/50
1200	15	Guard Booth	0	50	✓		Recalibrated, 0/50
0930	16	Fuel Oil Room	0	40		✓	Recalibrated, 0/50

Note:
1. LEL = lower explosive limit

- Most detectors were reading low.
- All were field calibrated to 0% and 50% LEL

0940 From system controller:

Hanger Dazz
#011 - 9.0%

[Alarm level is 55% LEL]

- All others zero

Lids
#010 - 8.0%

Fuel Oil Room
#016 0.0% - Was 6.0% two weeks ago

Appendix B

Photographs

Appendix B – Photo Log
Annual Inspection Report
Empire Outlets
55 Richmond Terrace, Staten Island, New York

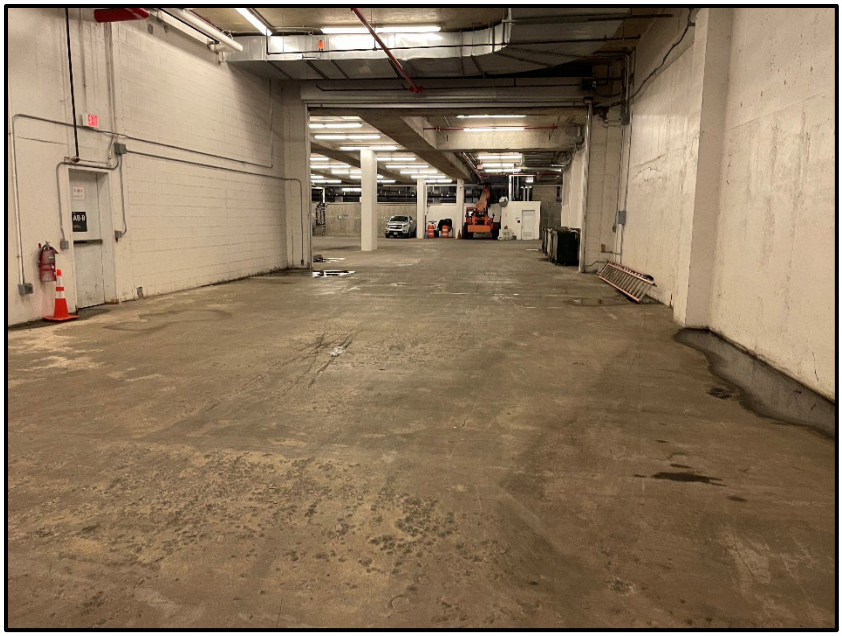

Photo 1. Site cover system inspection: parking level P1.

September 14, 2022

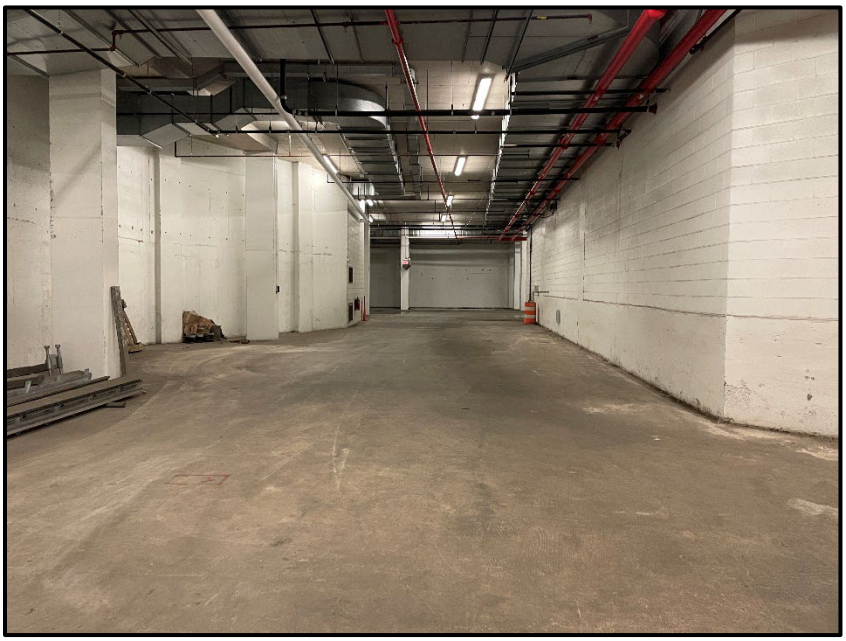

Photo 2. Site cover system inspection: parking level P1.

September 14, 2022

Photographs taken by GEI.

Appendix B – Photo Log
Annual Inspection Report
Empire Outlets
55 Richmond Terrace, Staten Island, New York

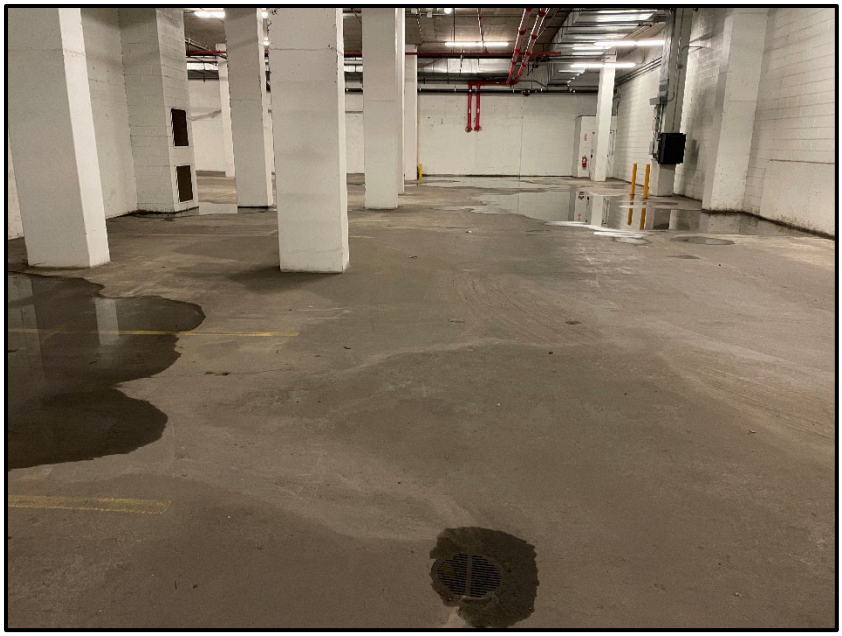

Photo 3. Site cover system inspection: parking level P1.

September 14, 2022

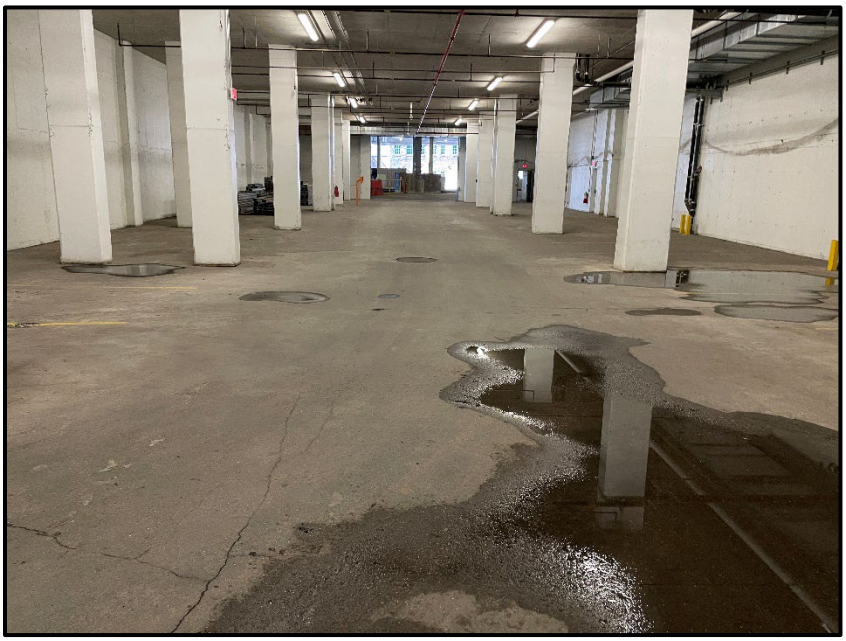

Photo 4. Site cover system inspection: parking level P1.

September 14, 2022

Photographs taken by GEI.

Appendix B – Photo Log
Annual Inspection Report
Empire Outlets
55 Richmond Terrace, Staten Island, New York

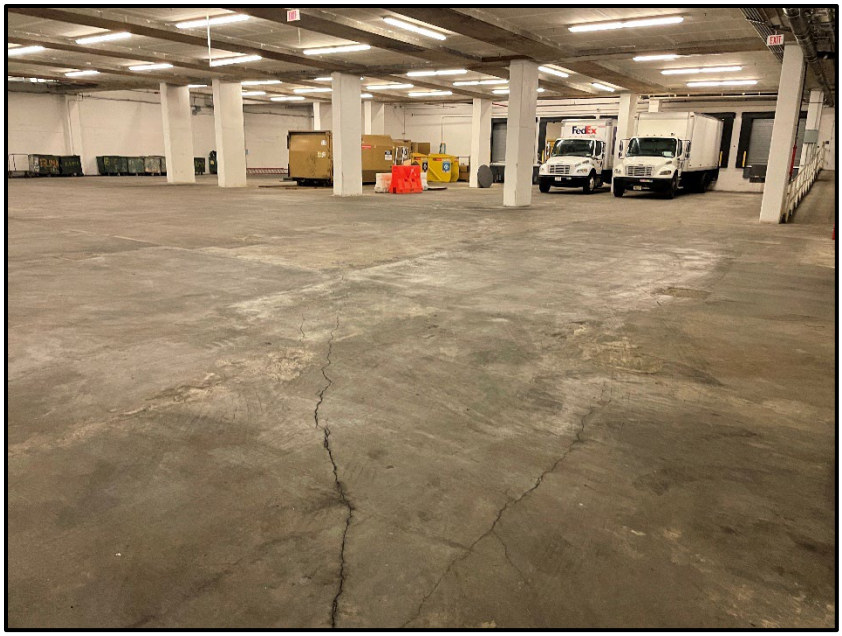

Photo 5. Site cover system inspection: parking level P1.

September 14, 2022

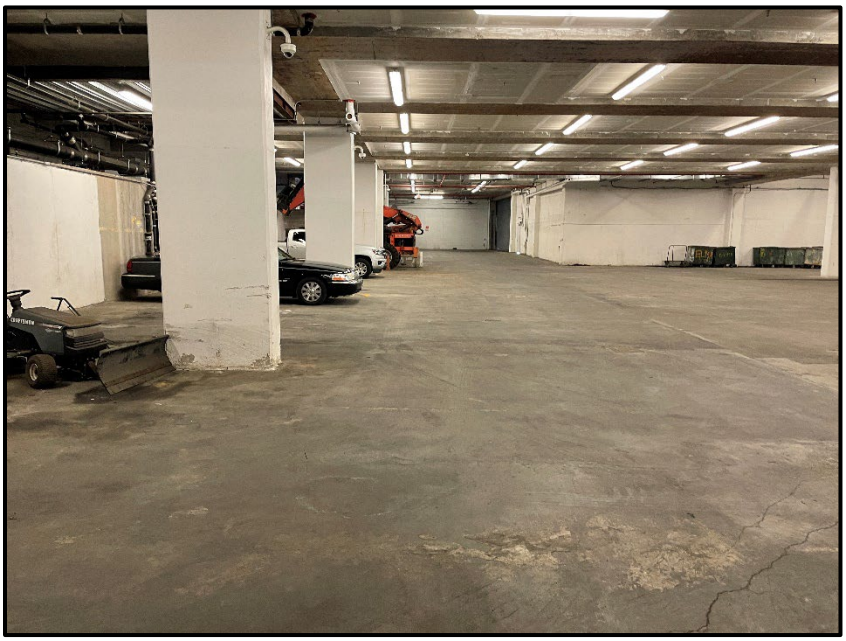

Photo 6. Site cover system inspection: parking level P1.

September 14, 2022

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Appendix B – Photo Log
Annual Inspection Report
Empire Outlets
55 Richmond Terrace, Staten Island, New York

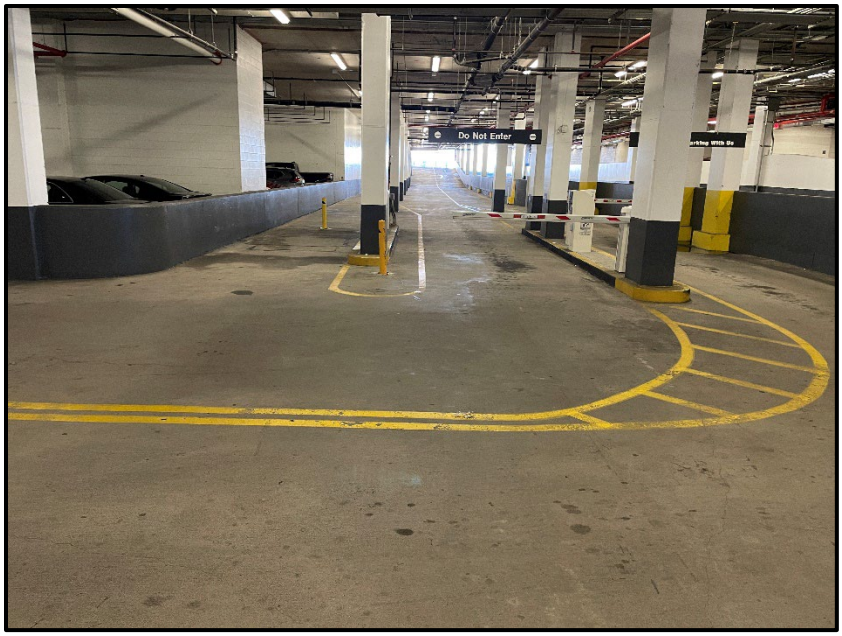

Photo 7. Site cover system inspection: parking level P1.

September 14, 2022

Photo 8. Site cover system inspection: parking level P1.

September 14, 2022

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Appendix B – Photo Log
Annual Inspection Report
Empire Outlets
55 Richmond Terrace, Staten Island, New York

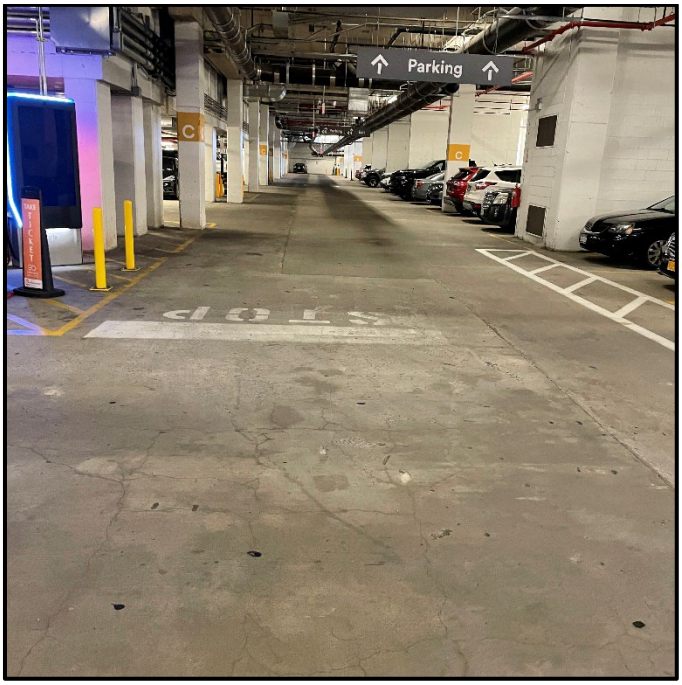

Photo 9. Site cover system inspection: parking level P1.

September 14, 2022

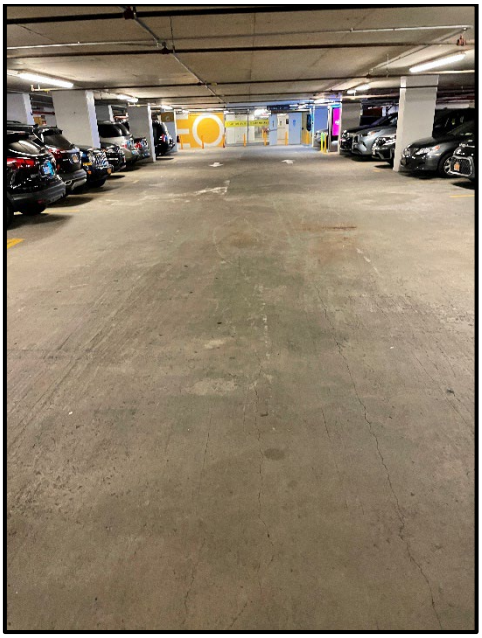

Photo 10. Site cover system inspection: parking level P1.

September 14, 2022

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Appendix B – Photo Log
Annual Inspection Report
Empire Outlets
55 Richmond Terrace, Staten Island, New York

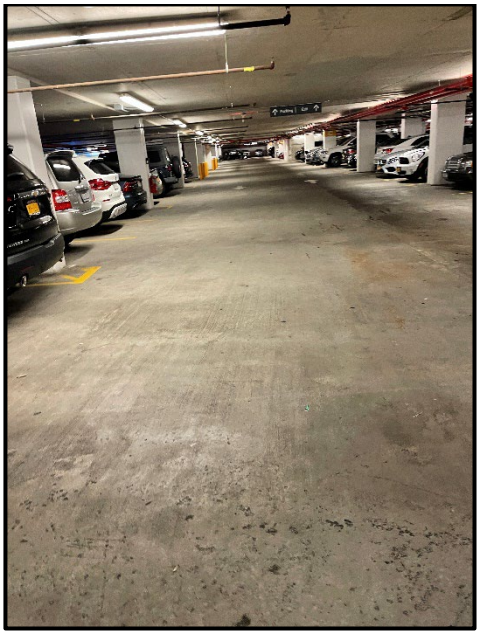

Photo 11. Site cover system inspection: parking level P1.

September 14, 2022

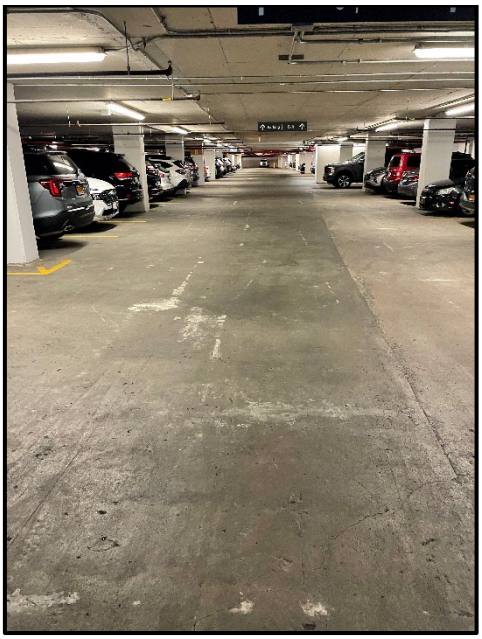

Photo 12. Site cover system inspection: parking level P1.

September 14, 2022

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Appendix B – Photo Log
Annual Inspection Report
Empire Outlets
55 Richmond Terrace, Staten Island, New York

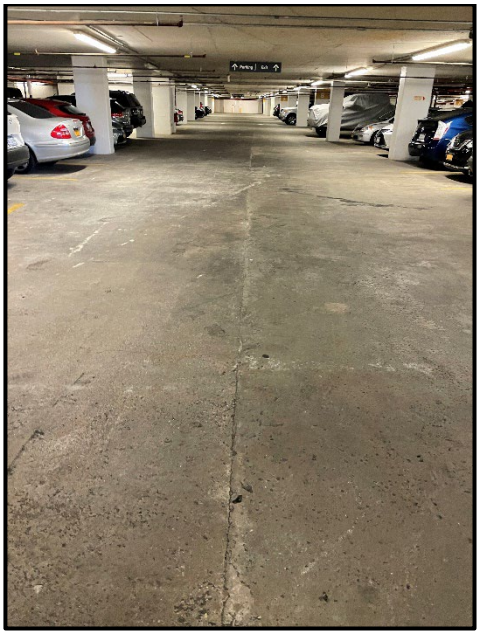

Photo 13. Site cover system inspection: parking level P1.

September 14, 2022

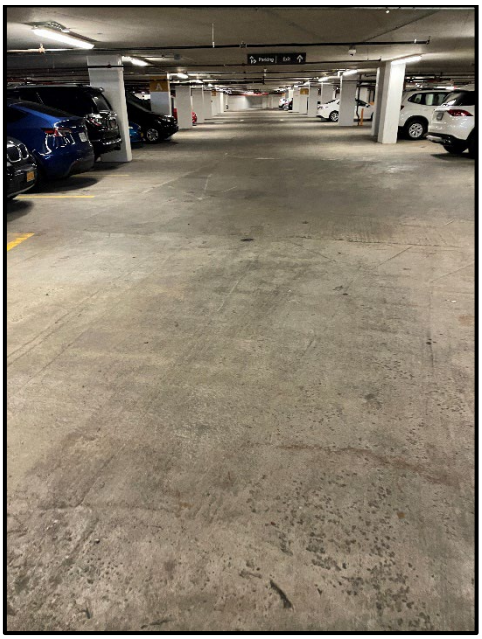

Photo 14. Site cover system inspection: parking level P1.

September 14, 2022

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Appendix B – Photo Log
Annual Inspection Report
Empire Outlets
55 Richmond Terrace, Staten Island, New York

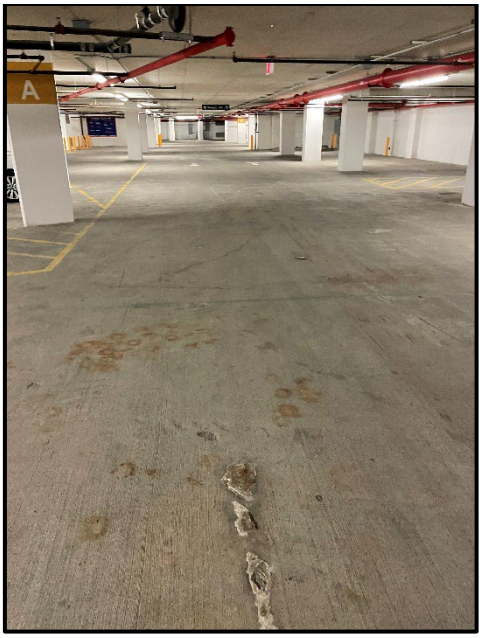

Photo 15. Site cover system inspection: parking level P1.

September 14, 2022

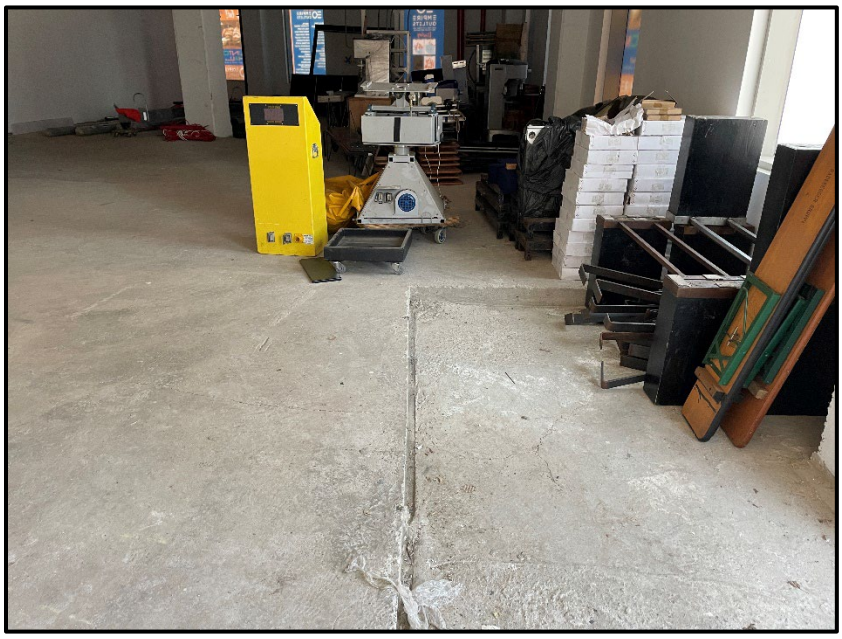

Photo 16. Site cover system inspection: parking level P1.

September 14, 2022

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Appendix B – Photo Log
Annual Inspection Report
Empire Outlets
55 Richmond Terrace, Staten Island, New York

Photo 17. Site cover system inspection: parking level P1.

September 14, 2022

Photo 18. Site cover system inspection: Haagen Dazs back of house.

September 14, 2022

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Appendix B – Photo Log
Annual Inspection Report
Empire Outlets
55 Richmond Terrace, Staten Island, New York

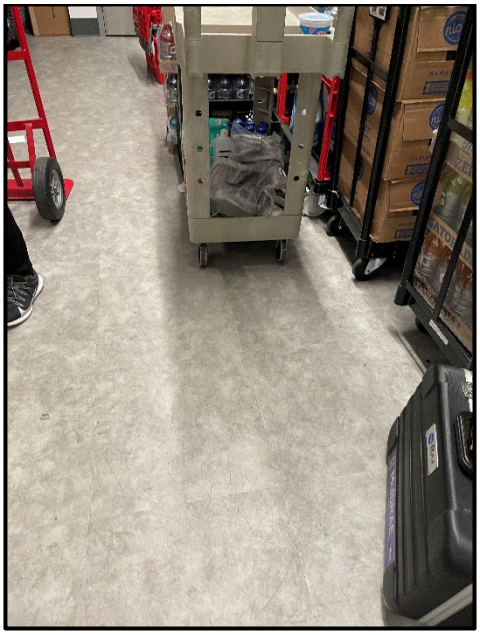

Photo 19. Site cover system inspection: Walgreens back of house.

September 14, 2022

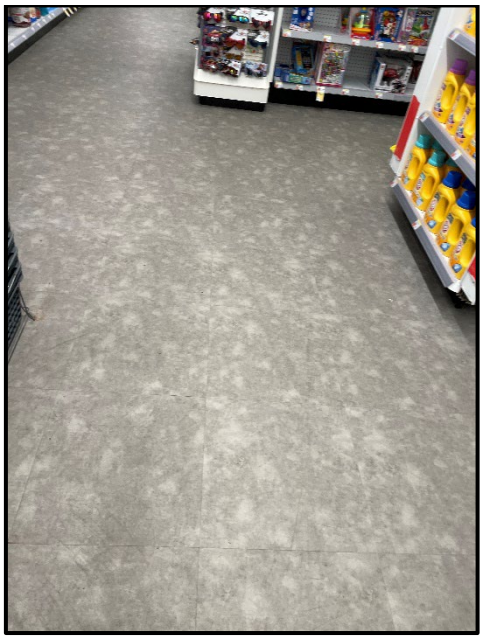

Photo 20. Site cover system inspection: Walgreens front of house.

September 14, 2022

Photographs taken by GEI.

Appendix B – Photo Log
Annual Inspection Report
Empire Outlets
55 Richmond Terrace, Staten Island, New York

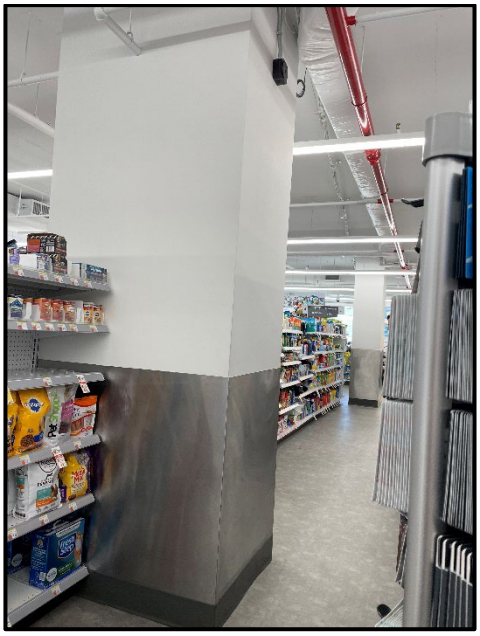

Photo 21. Site cover system inspection: Walgreens front of house methane detector location.

September 14, 2022

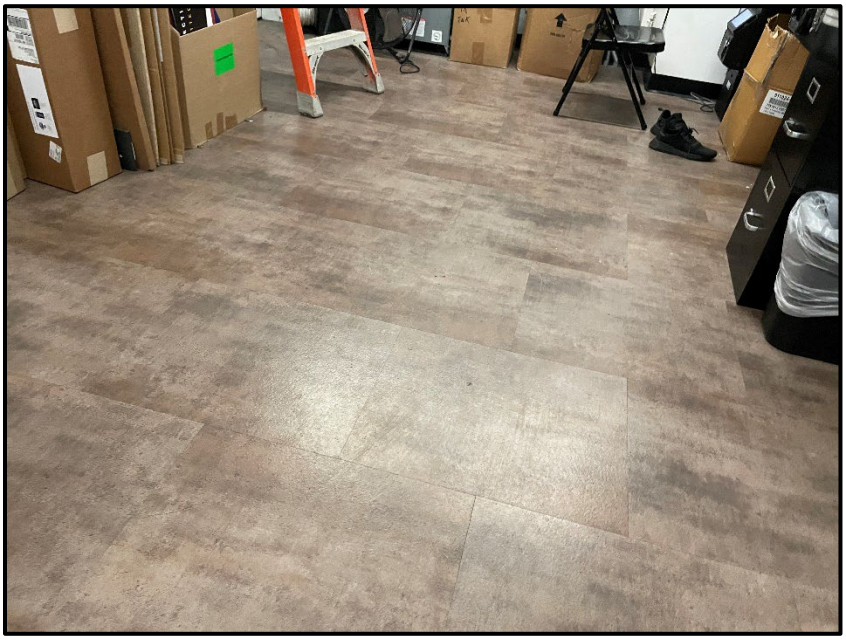

Photo 22. Site cover system inspection: Lids back of house.

September 14, 2022

Photographs taken by GEI.

Appendix B – Photo Log
Annual Inspection Report
Empire Outlets
55 Richmond Terrace, Staten Island, New York

Photo 23. Site cover system inspection: Starbucks back of house.

September 14, 2022

Photo 24. Site cover system inspection: Starbucks front of house.

Photographs taken by GEI.

Appendix B – Photo Log
Annual Inspection Report
Empire Outlets
55 Richmond Terrace, Staten Island, New York
September 14, 2022

Photo 25. Site cover system inspection: Starbucks front of house.

September 14, 2022

Photo 26. Site cover system inspection: Vacant unit #102A.

Photographs taken by GEI.

Appendix B – Photo Log
Annual Inspection Report
Empire Outlets
55 Richmond Terrace, Staten Island, New York
September 14, 2022

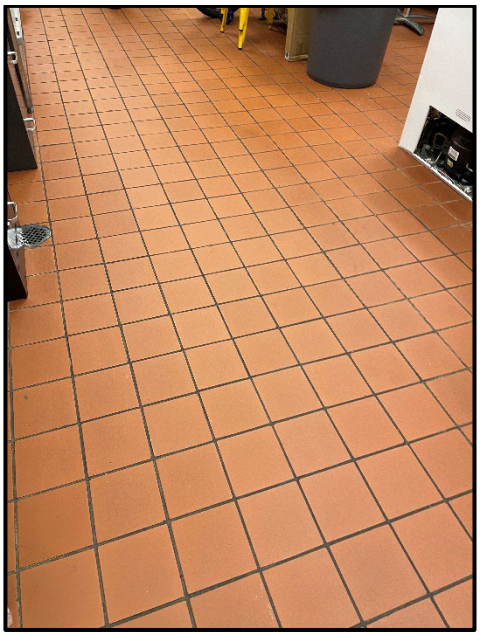

Photo 27. Site cover system inspection: Wetzels Pretzels back of house.

September 14, 2022

Photo 28. Site cover system inspection: Wetzels Pretzels front of house.

Photographs taken by GEI.

Appendix B – Photo Log
Annual Inspection Report
Empire Outlets
55 Richmond Terrace, Staten Island, New York
September 14, 2022

Photographs taken by GEI.

GEI Consultants

Appendix B – Photo Log
Annual Inspection Report
Empire Outlets
55 Richmond Terrace, Staten Island, New York

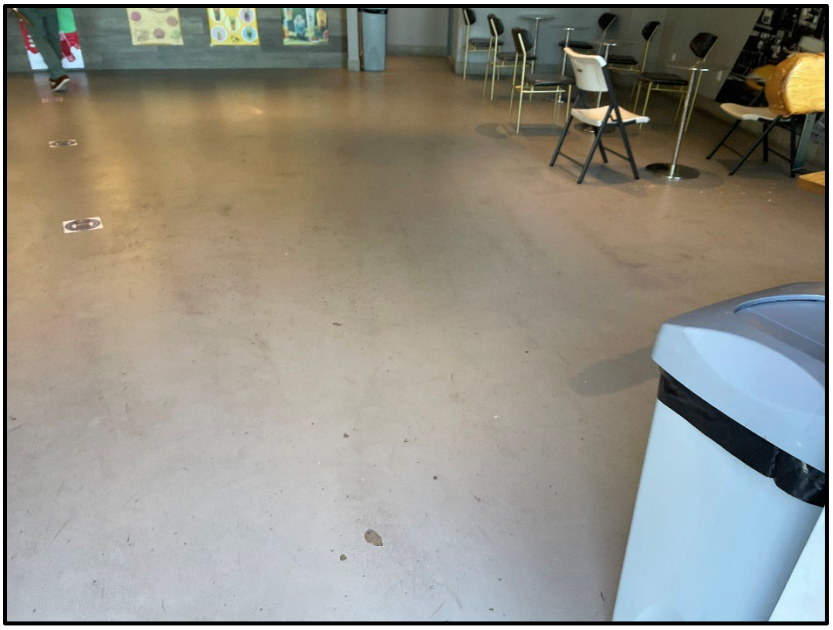

Photo 29. Site cover system inspection: Bake Culture front of house.

September 14, 2022

Photo 30. Site cover system inspection: Bake Culture back of house.

September 14, 2022

Photographs taken by GEI.

Appendix B – Photo Log
Annual Inspection Report
Empire Outlets
55 Richmond Terrace, Staten Island, New York

Photo 31. Site cover system inspection: fuel oil room.

September 14, 2022

Photo 32. Site cover system inspection: fuel oil room.

September 14, 2022

Photographs taken by GEI.

Appendix B – Photo Log
Annual Inspection Report
Empire Outlets
55 Richmond Terrace, Staten Island, New York

Photo 33. Site cover system inspection: fuel oil room.

September 14, 2022

Photo 34. Site cover system inspection: guard booth.

September 14, 2022

Photographs taken by GEI.

Appendix B – Photo Log
Annual Inspection Report
Empire Outlets
55 Richmond Terrace, Staten Island, New York

Photo 35. SSDS inspection: vapor monitoring point MP-1.

September 14, 2022

Photo 36. SSDS inspection: vapor monitoring point MP-2.

September 14, 2022

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Appendix B – Photo Log
Annual Inspection Report
Empire Outlets
55 Richmond Terrace, Staten Island, New York

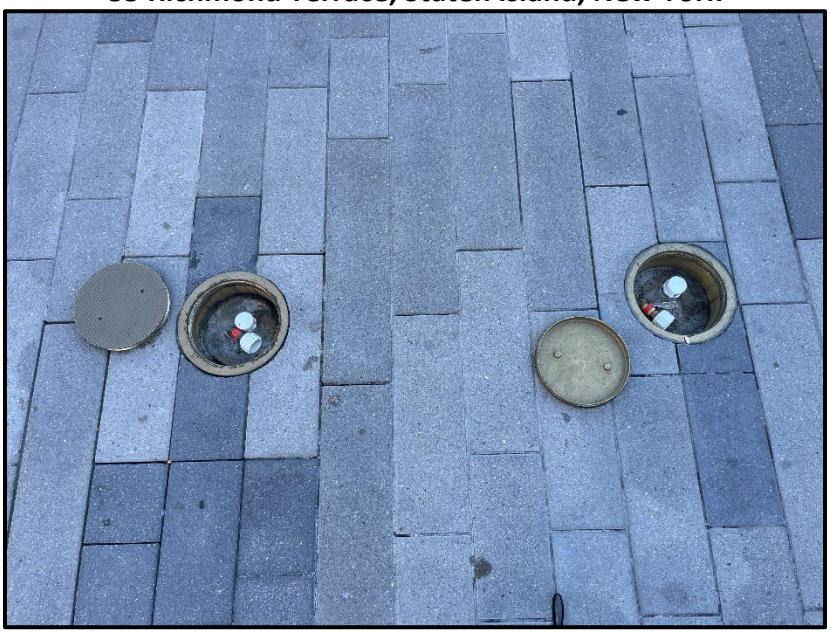

Photo 37. SSDS inspection: vapor monitoring points MP-3 and MP-4.

September 14, 2022

Photo 38. SSDS inspection: vapor monitoring point MP-5.

September 14, 2022

Photographs taken by GEI.

Appendix B – Photo Log
Annual Inspection Report
Empire Outlets
55 Richmond Terrace, Staten Island, New York

Photo 39. SSDS inspection: vapor monitoring point MP-6.

September 14, 2022

Photo 40. SSDS inspection: roof vent VR-1.

September 14, 2022

Photographs taken by GEI.

Appendix B – Photo Log
Annual Inspection Report
Empire Outlets
55 Richmond Terrace, Staten Island, New York

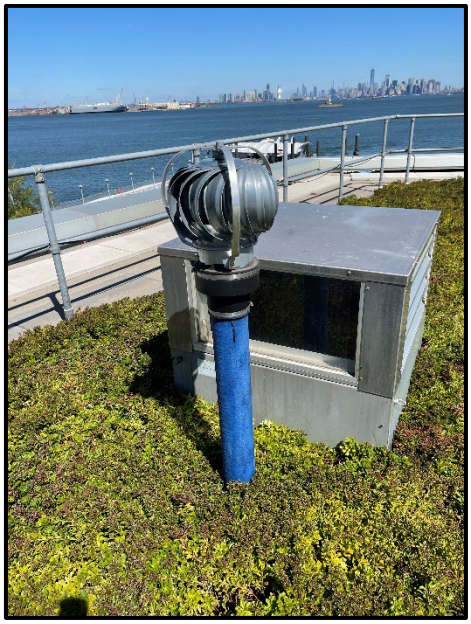

Photo 41. SSDS inspection: roof vent VR-2.

September 14, 2022

Photo 42. SSDS inspection: roof vent VR-3.

September 14, 2022

Photographs taken by GEI.

Appendix B – Photo Log
Annual Inspection Report
Empire Outlets
55 Richmond Terrace, Staten Island, New York

Photo 43. SSDS inspection: roof vents VR-4 and VR-5.

September 14, 2022

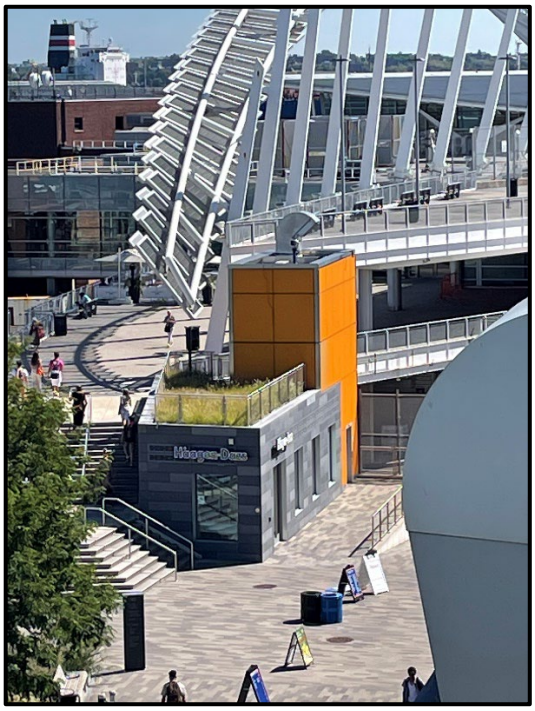

Photo 44. SSDS inspection: roof vent VR-6.

September 14, 2022

Photographs taken by GEI.