

## Alternative Analysis Report East 11<sup>th</sup> St MGP – OU-1

April 11, 2023



#### Three Operable Units



#### Investigations

- Site characterization 2004
- Remedial investigation 2006 and 2007
  - Over 50 surface soil samples collected
  - Over 150 subsurface soil samples collected.
  - Over 30 Groundwater Samples
- Indoor air investigations
  - Samples collected from several buildings over multiple events from 2010 to 2019.



CARPENTER (1ST FL) PAINT SHOP (2ND FL) 7 SB-108 MW-107A-PURIFYING HSE. FOUR GAS HOLDERS (1868) MW-107B FINGINE E 131H S ROOM B-2/MW-6 MACHINE SHOP-SB-107 SB-134 (1868) SB-110 🛦 ASH AB-7 (sa-109▲ A 🖌 UEL OIL TANKS (1903) 8-1 Π−3 -8-26 -MW-111B B-45 \* SS-BB -95 MACHINI MW-1114 LEGEND: ssie 55<u>-</u>1 25-e 55-134 ▲ B-8 CAS HOLDER 5,000,000CF. NO. 10 (1920) SURFACE SOIL SAMPLE 55-4 SB 413 SH-126 SS-124 . GAS HOLDER (1868) B-35 SOLL BORING 8-3 \$5-3 55-23 \_∏−15 TT-16 📼 TEST TRENCH UNDERGROUND SB-1/ MW-127A -**\$** 844 B-25/MW-1-MONITORING WELL 132▲ SB-127 MW-127B SB-102 ▲ 58-114 ▲<sup>8-4</sup> APPROXIMATE HISTORICAL SHORELINE B-11/MW-▲SB-101 AR-6 ▲ S8-113 TT-16 -33 FORMER SITE FEATURES (FIRST 4133 A ▲ B-40A B-37 SB-OCCURENCE-1868) -------B-25/MW \$5-5 SB-135 SS-10 . FORMER SITE FEATURES (FIRST A\_\_\_\_\_\_ B-32 -GAS HOLDER (1868) MW-128/ OCCURENCE-1903) SB-105 . ● B-5/MW-2 . | ∳<sub>SB-128</sub> SB-104 MW-105A FORMER SITE FEATURES (FIRST NAPTHA TANK (1868) GAS OIL TANK, CAP. MW-104B THREE GAS HOLDERS, CAP, 530,000 CF (1868)-55-34 🛆 ₫\$\$-32 A 86-22 OCCURENCE-1920) Gas-36 MW-1288 B-15 TT-9 JACOB RIIS BUILDING NUMBER ASS-33 . SB-106 R = 16אַ״ -20 **A**.( æ - 11 COAL SHED (1868) CONDENSE HOUSE B-19 SB-116 SB-118 A SB-115 👗 8-38 NOTES: GAS HOLDER B-13▲ MW-115A (1868) SB-117 196 FEET HICH SB-129 1. BASE MAP AND SURVEY CONTROL WAS TAKEN FROM 4,225,000 CF. NO. 8 🔶 🛛 п-17 ORIGINAL SURVEY DATED 9/3/2004; SUBMITTED BY B.B.L. 8-20 SB-119 ON 8/25/2006 AND SATELLITE IMAGERY OBTAINED FROM \$5-13 GOOGLE EARTH ON SEPTEMBER 16, 2009. 8-1 ASS-14 2. ALL PLANIMETRIC FEATURES SHOWN ARE IN NAD 83 NY HOLDERS (1868) -STATE PLANE COORDINATE SYSTEM. 11-2 33-48 ASS-46 3 THE ORIGINAL SURVEY WAS CONVERTED INTO NEW ▲ 8–18 -44 ASS-40 COORDINATE AND VERTICAL SYSTEM BASED ON 7 TRAVERSE POINTS, RECOVERED IN THE FIELD TT-10/ 8-14 SB-120 -B-23 MW-5 SS-15 R ۱Ă. (#2,3,4,6,7,12, AND 18). - 44 s-19 8-21▲ ENGINE 8-22 TT-19 PURFYING-CONDENSER-NW-1218 HSE SCRUBBERS 8-39/MW-4 MW-130A CONDENSER HSF. SB-12-3 58-121 MW-1228 58-122 SEPARATOR MW-125A SB-130 MW-130B MW-122A-58-124 Ś 8 MW-121A SB-125 MW-125B -BULKHEAD (1920) APPROX. 100' 200' GRAPHIC SCALE



#### **Investigation Results**

- Mobile coal tar has been found underground that is moving to the East River. This will be addressed separately.
- No MGP impacts detected in indoor air
- Contaminants in the surface soil were similar to levels found across Manhattan
- MGP tar in subsurface soil mostly at depths from 10 to 30 feet below the surface.
- MGP impacts to groundwater
- Groundwater is not used for drinking, bathing or washing
- Potable water is provided by municipal water system



## **Role of the NYS Department of Health**

- Work with NYSDEC to identify nature and extent of contamination to evaluate potential exposures
- Evaluate data and make recommendations to address any potential exposure and evaluate the need for additional information
- Ensure that remedy selected is protective of public health



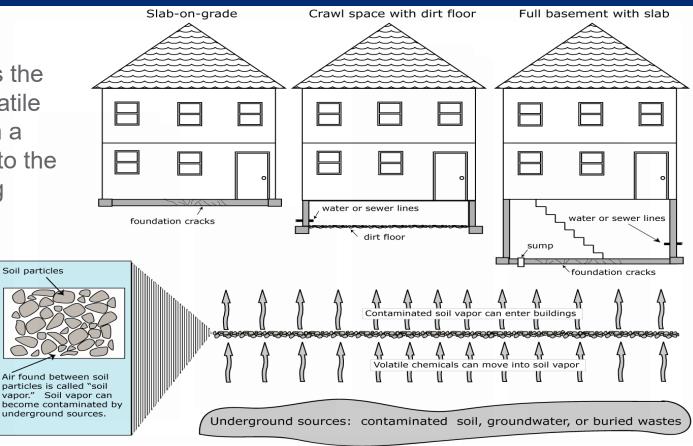
## What is exposure?

- Physical contact with a chemical or substance
  - Inhalation (breathing)
  - Direct contact (touching)
  - Ingestion (eating/drinking)
- One or more of these physical contacts <u>must</u> occur before a chemical has the *potential* to cause a health problem
- Exposure does not necessarily mean that health effects will occur



8

Soil vapor intrusion is the process by which volatile chemicals move from a subsurface source into the indoor air of overlying buildings





#### **Potential Exposure Pathways**

#### Inhalation

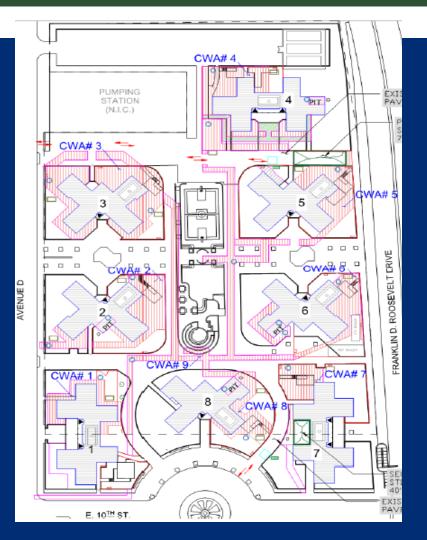
#### **Direct Contact**

Ingestion



#### **Storm Hardening Work**

- Hurricane Sandy Capital Improvement Program
- Work completed according to Site Management Plan, including community and air monitoring
- Soil excavated to depths of about 4-5 ft
- Excavated contaminated soil taken offsite
- Backfilled with soil that meets restricted residential use standards









#### **Proposed Remedy**

•Coal Tar Extraction Wells

- Wells located along eastern edge of property
- Final placement made with consultation of NYCHA staff to ensure they are in low traffic areas.

•Removing and replacing the top two feet of soil cover around buildings 2, 3, 4, 5, and 6.

•Installation of cement flooring in Building 4 storage areas.

•Monitoring Plan -assess effectiveness of the remedy

•Operation & Maintenance Plan -ensure continued operation of the remedy

•Administrative Controls

- Site Management Plan (SMP) to guide future excavation and ensure maintenance of the site cover.
- Environmental Easement to alert future owners



E 13TH STREET LEGEND: ര PROPOSED NAPL RECOVERY E 13TH STREET WELL STORAGE AREA 2 STY. BLDG PROPOSED NEW GROUNDWATER MONITORING WELL Ð 2 STY. ST. EMERIC CATHOLIC CHURCH 000 APPROXIMATE HISTORICAL SHORELINE 0 BRICK BUILDING ------ BUILDING ASPHALT PLA  $\left( 4 \right)$ ST. EMERIC ROMAN CATHOLIC CHURCH ONE STORY BUILDING н н JACOB RIIS BUILDING NUMBER 2 STY. BRICK BLDG 15 STY OCREA ۲ BRICK SHED. DOME AREA OF SHALLOW SOIL REMOVAL TO A DEPTH OF 2 0 0 FEET 2 STY. BRICK BLDG PROPOSED SUR (SEE NOTE 5) PROPOSED SURFACE CONTROL 100 18 PLANTER 10 廣 NOTES: 3 1. BASE MAP AND SURVEY CONTROL WAS TAKEN FROM (F) E 12TH STREET ORIGINAL SURVEY DATED 9/3/2004; SUBMITTED BY B.B.L. RICK BUILDING BRICK BUILDING ON 8/25/2006 AND SATELLITE IMAGERY OBTAINED FROM GOOGLE EARTH ON SEPTEMBER 16, 2009. BASKETBALI COURT 2. ALL PLANIMETRIC FEATURES SHOWN ARE IN NAD 83 NY STATE PLANE COORDINATE SYSTEM. P -.D.R 2 STY. BRICK BLDG 0 THE OLD SURVEY WAS CONVERTED INTO NEW COORDINATE AND VERTICAL SYSTEM BASED ON 7 TRAVERSE POINTS, AVENUE PR PUBLIC RECOVERED IN THE FIELD (#2,3,4,6,7,12, AND 18). SCHOOL 34 PLAYOROD. SECURITY~. WALL 4. PROPOSED NAPL RECOVERY WELL LOCATIONS ARE CONCEPTUAL. ACTUAL LOCATION AND CONFIGURATION 0 A. WOULD BE DETERMINED DURING DESIGN. 3 STY. GLASS AN METAL VENEER BLDG 5. ESTIMATED EXTENT OF SURFACE CONTROL TO BE BASKETBALL INSTALLED OVER EARTHEN FLOOR STORAGE AREAS IN Ç, JACOB RIIS BUILDING No. 4 BASED ON FIELD õd OBSERVATIONS (ASSUMED 75% OF BUILDING FOOTPRINT). ACTUAL AREA TO BE CONFIRMED. BRICK BUILDING CONCRETE SURFACE REPORT RELITIONS 2 28 Ð E 11TH STREET (PEDESTRIAN ONLY) # <del>1</del> PICNIC AREA NYC PARKS AND RECREATION DRY DOCK PLAYGROUND AND POOL BRICK BUILDING BASKETBALL COURTS (8) BRICK BUILDING BRICK BUILDING 200' 100' PDOL GRAPHIC SCALE POOL CONSOLIDATED EDISON COMPANY OF NEW YORK, INC. FORMER EAST 11TH STREET WORKS SITE MANHATTAN, NEW YORK 1 STY, BRICK BUILDING ALTERNATIVES ANALYSIS REPORT FOR OU-1 ALTERNATIVE 4 E 10TH STREET FIGURE GREFS: 43013000 43013001 5-2

Department of Environmental Conservation

13

#### What happens now?

- Comments accepted through May 22<sup>nd</sup>
- Final decision issued
- Design of the remedy and implementation
- Update Site Management Plan
- Place Environmental Easement
- Additional work will be done on the other operable units. e.g Coastal Resiliency Project that will be monitored and coordinated with the Department and Con Edison





#### **Thank You**

Sydney Sobol Project Manager 625 Broadway 12<sup>th</sup> Floor Albany, NY 12233-7014 sydney.sobol@dec.ny.gov 518-402-4799 Steven G. Berninger Public Health Specialist Bureau of Environmental Exposure Investigation Empire State Plaza, Corning Tower, Room 1787 Albany, NY 12237 beei@health.ny.gov 518-402-0443

#### **Connect with us:**

Facebook: www.facebook.com/NYSDEC Twitter: twitter.com/NYSDEC Flickr: www.flickr.com/photos/nysdec

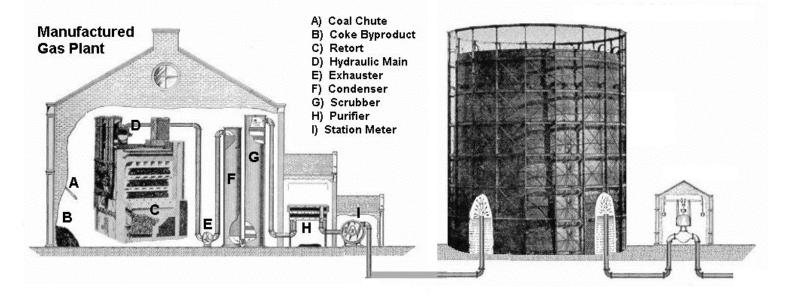


#### What is an MGP?

- Manufactured Gas Plant (MGP)
- Gas was produced by "baking" coal
- First started operations in the mid- 1800s; closed in the 1960's
- Replaced by natural gas
- The MGP at E. 11th operated from the 1860s to the 1930s.
- Con Edison is a corporate successor to the MGP operator



#### **Distribution Holder**





#### **Nature of Contamination**

# MGP Plants typically have two types of contaminants of concern onsite:



2. Purifier Waste



- Coal tar is a direct by-product of manufactured gas.
- Properties vary from site to site
- At these sites it is primarily a viscous flow-able tar
- •Coal tar is a mixture of several organic compounds. These compounds fall into two groups:
  - 1. BTEX compounds
  - 2. PAH compounds





- These are four volatile hydrocarbons: Benzene, Toluene, Ethylbenzene, and Xylene.
- Found in most liquid petroleum by-products such as gasoline.
- Lighter than water, will create sheens on water surface.
- More easily dissolved in water than PAHs, but still more likely to create sheens and float than dissolve.
- Will tend to biodegrade.



#### Polycyclic Aromatic Hydrocarbons (PAHs)

- > By-product of burning and heating processes
- Semi-volatile compounds
- Denser than water
- > Not easily dissolved and transported by water
- > Not readily broken down in the environment
- > Found in: asphalt, grilled meats, rubber





