

**Consolidated Edison Co. of
New York, Inc.**

Long Island City, New York



**Manufactured Gas Plant Site
History Research Report for the
Former Farrington Street Gas
Works 31-06 to 31-24 and 31-37 to
31-53 Farrington Street
Queens, New York**

**ENSR Corporation
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1.0 INTRODUCTION

1.1 Preface

ENSR International (ENSR) was retained by Consolidated Edison Company of New York, Inc. (Con Edison) to conduct Site History Research for the former Manufactured Gas Plant (MGP) site known as Farrington Gas Works, located at 31-06 to 31-24 and 31-37 to 31-53 Farrington Street in Flushing, New York hereafter referred to as the subject property. The "subject property" consists of an approximately 6.17-acre parcel (approximately 268,895 square feet), which contains several commercial properties, identified as Block 4407 Lot 1, Block 4406 Lots 30, 32 and 99, and Block 4408 Lot 1. The subject property is bordered to the north by 31st Road (formerly Bayside Avenue), to the east by Farrington and Linden Streets, and to the south by 32nd Avenue (formerly Myrtle Avenue). The western boundary of the subject property is approximately 200 feet east of Downing Street and is bordered by Byrd's Alley to the southwest. The subject property is located approximately 2,000 feet northeast of Flushing Creek, 1,200 feet southwest of Mill Creek and 4,000 feet east of Flushing Bay. Figure 1 provides a Site Location Map showing the site location, local topography, and surrounding areas. Figure 2 provides a site plan depicting the current site layout with property boundaries.

For the purposes of this report, and to aid in the discussion of the site and potential issues of concern, ENSR has subdivided the subject property into three quadrants. Discussions with regards to each quadrant will be referenced as Quadrant 1, Quadrant 2, and Quadrant 3. Figure 3 depicts the approximate locations of the three quadrants with regards to the subject property and surrounding areas. Current tax block and lot designations are included in Figure 5.

1.2 Objective and Scope of Work

The objective of the MGP Site History Research was to gather historical information on the former MGP sites operated by Con Edison and/or its predecessor companies, and to assess potential impacts associated with these properties. Con Edison intends to utilize the MGP Site History Research to prioritize investigation and remedial activities at these sites. In order to achieve this objective, the following activities were performed in accordance with ENSR's proposal dated August 20, 2001 and Con Edison's final scope of work:

1. Reviewed Brown's Directories of North American and International Gas Companies (Brown's Directories) for statistical information from MGP companies. Where available, data gathered included the following: plant ownership and management, size of gas plant, amount of gas manufactured and sold, number and size of gas holders, tar production and sales, and type of gas manufacturing process.

2. Reviewed Public Service Commission Reports, Statistics of Public Service Corporations, subsequently known as Statistics of Gas and Electric Companies and Statistics of Light, Heat and Power Companies.
3. Reviewed Sanborn Insurance Maps. Information gathered from the Sanborn Insurance Maps was superimposed on the current site plans for this project (Figure 4).
4. Reviewed 50-year Chain-of-title reports. Chain-of-title reports for all of the sites were ordered through Commonwealth Land Title Company as requested by Con Edison.
5. Reviewed appropriate and readily available documents at Federal, State and Local governmental agencies and departments as necessary, including United States Environmental Protection Agency (USEPA), New York State Department of Environmental Conservation (NYSDEC), Clerk's Office, Building Department, Engineering Department, Tax Assessor's Office, Health Department and Fire Department. Where available, site information relative to the following was obtained: historical ownership, property usage, environmental permits, hazardous waste generator status, violations, underground storage tanks, hazardous material or petroleum spills, and soil and groundwater sampling data. Building Department records were also evaluated to determine whether significant MGP contamination may have been encountered or removed during any site redevelopment.

Relative to the USEPA and NYSDEC document review, ENSR submitted a Freedom of Information Act (FOIA) request to both agencies for the above-mentioned information. ENSR requested a copy of the USEPA's files, however, according to the USEPA, the agency does not contain files for properties prior to 1970, thus the agency has no files for the subject property. The NYSDEC has not responded to the FOIA request, however, any information received will be reviewed and submitted as a supplemental report.

6. Conducted searches for relevant site information at the following locations as necessary: Westchester County Public Library, the New York Public Library, and local historical societies. Reviewed other potentially relevant information sources such as National Wetlands Inventory maps, USGS topographic maps, Cole's Cross Reference Directories and aerial photographs.
7. At Con Edison's request, ENSR reviewed Con Edison's files for the subject property in the Property Department and Real Estate Department located at Con Edison, 4 Irving Place, New York, NY.
8. Based on information collected in the above tasks, ENSR identified former non-MGP related site operations, along with potentially associated residuals. The following information with regard to historical site activities was noted: types of operations, and locations of associated structures, equipment and processes.

9. Identified the types of hazardous materials that potentially could have been stored, used or disposed at the site based on each identified historical operation.
10. Provided a detailed review of regional and site-specific geology and hydrogeology, including information on wetlands, local drinking water supply, aquifers, depth to bedrock and general stratigraphy.
11. Based on research information collected, ENSR described the type and general layout(s) of the MGP operations and potential MGP residuals associated with these types of facilities using commercially available publications.
12. Conducted a visual inspection of each of the MGP properties in order to identify current conditions, with particular regards to potential present contributing sources of contamination; identification of locations, if any, of regulated material storage and underground storage tanks.

1.3 Significant Assumptions

The MGP Site History Research focused specifically on the approximate 6.17-acre parcel (subject property). During the site inspection of the subject property, ENSR was not provided access to the interior portions of the Recycling Plant located on Quadrant 3 of the subject property or the buildings and office trailers located on Quadrant 2 of the subject property.

2.0 PROPERTY DESCRIPTION

2.1 Property Description

ENSR International (ENSR) was retained by Consolidated Edison Company of New York, Inc. (Con Edison) on March 11, 2002, to conduct Site History Research for the former Manufactured Gas Plant (MGP) site known as Farrington Gas Works, located at 31-06 to 31-24 and 31-37 to 31-53 Farrington Street in Flushing, New York. The “subject property” consists of approximately 6.17 acres (approximately 268,895 square feet), which contains several commercial properties, identified as Block 4407 Lot 1, Block 4406 Lots 30, 32, and 99, and Block 4408 Lot 1. The subject property is bordered to the north by 31st Road (formerly Bayside Avenue), to the east by Farrington and Linden Streets, and to the south by 32nd Avenue (formerly Myrtle Avenue). The western boundary of the subject property is approximately 200 feet east of Downing Street and is bordered by Miller Street (Byrd’s Alley) to the southwest. The subject property is located approximately 2,000 feet northeast of Flushing creek, 1,200 feet southwest of Mill Creek and 4,000 feet east of Flushing Bay. According to the New York City Department of City Planning, the subject property and northwestern, western, southwestern and southern abutting properties are zoned as M2-1; medium manufacturing district (medium performance), and the abutting properties east of Farrington Street are zoned as M1-1; light manufacturing district (high performance). Figure 1 provides a Site Location Map showing the site location, local topography, and surrounding areas. Figure 2 provides a site plan depicting the current site layout with property boundaries.

The location and extent of the former MGP operations (subject property) were determined through review of historical Fire Insurance Maps, information provided by Con Edison, and additional research as documented in this report. At the time of ENSR’s inspection, no visible or olfactory evidence of MGP residual impacts to soil or groundwater was identified. Figure 2 provides a Site Plan of the subject property, which depicts current site features and boundaries.

3.0 CURRENT SITE OPERATIONS AND OWNERSHIP

3.1 Site Ownership

Con Edison currently owns the portions of the subject property located in Quadrant 2. According to the Queens County Department of Finance, the Pathmark, liquor store and restaurant (built in 1972) located on the subject property in Quadrant 1 are owned by Feinrose Associates, and the recycling plant located on the subject property in Quadrant 3 is owned by Con Edison. According to Con Edison, there are no planned changes in land uses on their property at this time. At the time of ENSR's site inspection, there were no indications of redevelopment plans.

3.2 Site Operations

Currently, the subject property contains a Pathmark, a liquor store, a "fish and chips" restaurant, and associated paved parking areas in Quadrant 1. Two vehicle, equipment, and storage yards/lots enclosed by a chain-link fence that are owned by Con Edison are located in Quadrant 2 of the subject property. Within Quadrant 2, a chain-link fence divides the northern and southern lots. The northern lot is a paved area that is utilized as a vehicle and transportation trailer staging area. The southern lot consists of a mixed paved and gravel lot that is utilized as an equipment storage, trailer storage, material lay down and vehicle storage yard/lot. During ENSR's inspection, several office trailers were observed throughout the lots, in addition to three buildings that were observed along the eastern and southern boundaries of the lots. Additionally, a recycling plant was observed in Quadrant 3 of the subject property. However, due to site access restrictions, ENSR did not access the current structures located on the subject property; therefore, the interiors portions were not observed nor were current usages determined.

3.3 Site Reconnaissance and Areas of Potential Concern

ENSR conducted a site inspection on April 20, 2002. As mentioned above, due to site access restrictions, ENSR did not access the current structures located on the subject property; therefore, the interiors of structures were not observed. In addition, only a limited inspection was conducted on the abutting properties due to restricted access to the areas that were not owned by Con Edison. Appendix A provides representative site photographs taken during the site reconnaissance.

The subject property is situated on approximately 6.17 acres. Paved surfaces and subject property buildings cover approximately 95 percent of the subject property, with gravel and unpaved areas occupying the remaining areas.

During the site inspection, ENSR observed three former MGP structures which included the former governor house, located along the eastern boundary of the southern lot owned by Con Edison in

Quadrant 2, and the transformer and pump houses, located along the southern boundary of the southern lot in Quadrant 2. The current uses of these structures were not determined at the time of ENSR's inspection. No areas of potential concern were identified with the current utilization of the subject property. The recycling plant located in Quadrant 3 of the subject property was not inspected because site access was not provided; therefore, exact details of the plant's current activities could not be determined.

4.0 SITE SETTING AND DEMOGRAPHY

4.1 Topography

The subject property is situated in the northern portion of Queens County, which is characterized by low rolling hills overlooking and extending into the East River between various salt-water bays, of which Flushing Bay is the largest. A relatively narrow ridge, ranging in elevation from 160 to 260 feet above mean sea level, trends about east-northeast in the central part of Queens County. This ridge, located approximately 3,000 feet southeast of the subject property, is part of the Harbor Hill Terminal Moraine, which marks the furthest advance of the Wisconsin Glaciation in this area. A plain slopes gently southward from the ridge to the Atlantic Ocean. Flushing Meadow, a large flat-bottomed valley, extends northward from this ridge to Flushing Bay on the East River (ENSR, 1994).

The subject property lies in a relatively flat area approximately 2,000 feet northeast of Flushing creek, 1,200 feet southwest of Mill Creek and 4,000 feet east of Flushing Bay. The overall elevation of the subject property and the surrounding properties is approximately 14 feet above mean sea level (amsl).

4.2 Demography

According to the New York Department of City Planning's Community District Profile (N.Y. Department of City Planning, 2000) for Queens Community District 7, which is based on a 2000 census, the demography in the vicinity of the subject property includes 16.9% Hispanic origin, 2.8% Black/African American Nonhispanic origin, 41.3% White Nonhispanic origin, 36% Asian and Pacific Islander Nonhispanic origins, 0.5% other race Nonhispanic, and 2.6% Nonhispanic of two or more races. In 2000, 5.6% of the population were under five years old, 5.5% were five to nine years old, 5.3% 10 to 14 years old, 5.3% 15 to 19 years old, 6% 20 to 24 years old, 32.6% 25 to 44 years old, 23.7% 44 to 64 years old, and 15.8% 65 years old and over. The average household size in 2000 was 2.69 people and 69.8% were considered family households (families), and 30.2 % categorized as non-family households. According to the Demographic profile for New York Community Districts Ranked by Population Density Change, the population for Queens Community District 7 is 242,952 and the square mileage of the district is 12.73 square miles. In 2000, the population in the district per square mile was 19,085, with approximately 4,771 people per ¼ mile in the district.

4.3 Surface Water and Drainage

Although local surface waters are classified as suitable for recreational boating and fishing, few recreational activities occur on the East River and other area waters, because of the highly industrial nature of the area. According to the New York State Department of Environmental Conservation (NYSDEC), the surface water classification for Flushing Creek is Class I, described as saline surface waters which are best suited for secondary contact recreation and fishing, and are suitable for fish

propagation and survival. Mill Creek is classified as Class C, which is described as saline surface waters, which are best used for fishing, and can be suitable for fish survival. A substantial portion of the precipitation runs off paved surfaces to sewers, and is discharged to the adjacent water bodies through the storm sewer systems located in the adjacent roadways. Although much of the subject property is paved, some precipitation infiltrates the ground surface in unpaved areas.

4.4 Geology

According to USGS geologic maps the subject property is situated on glacial till (ground moraine). The bedrock underlying the subject property and surrounding properties consists of undifferentiated schists and gneisses (Geologic Society of America, 1982). The depth to bedrock at the subject property and immediate vicinity ranges from 35 feet to 45 feet below the ground surface. The bedrock is overlaid unconformably by Pleistocene glacial deposits and scattered postglacial material. The glacial deposits include ground moraine deposits, which is an unsorted and unstratified mixture of clay, sand, gravel, and boulders that were accumulated at the front of a continental glacier during a period of melting, specifically, the glacial period of the Wisconsin age.

4.5 Hydrogeology

The subject property and abutting properties are underlain by the Upper Glacial Aquifer in the Brooklyn/Queens Aquifer System. The Upper Glacial Aquifer in this location consists of glacial till (ground moraine). The unconsolidated sediments and glacial till aquifer underlying the subject property are approximately 35 to 45 feet thick, and rest directly upon the bedrock surface (USGS 1999). According to the NYSDEC, groundwater water classification for the Flushing vicinity of Queens County is classified as Class GA for fresh groundwater.

Based on an evaluation of the topography, groundwater is generally encountered at depths between six and ten feet below the ground surface. The general direction of groundwater flow most likely flows towards Flushing Creek (west-southwestward) and towards Mill Creek (northwest).

4.6 Adjoining Property Description and Usage

31st Road (formerly Bayside Avenue) borders the subject property to the north, beyond which is a strip mall (built in 1974) containing several commercial properties, associated parking areas and Whitestone Bridge Boulevard. The intersection of 31st Road and Farrington Street abuts the subject property to the northeast, beyond which is an office building and parking area. Beyond Farrington Street, a Quick Lube and car wash, two residences, a warehouse and the intersection of 31st Drive and Farrington Street abut the subject property to the east. Commercial and residential properties are situated southeast of the subject property beyond the intersections of Farrington Street and 32nd Avenue and Linden Street and 32nd Avenue. 32nd Avenue borders the subject property to the south beyond, which are commercial properties, such as a deli, antique shop, auto service, and several unidentified

businesses. A gravel vehicle and equipment storage lot owned by Con Edison, a collision corporation (built in 1979), a motor vehicle repair shop (built in 1969) and a lot owned by the New York Department of Conservation abut the subject property to the southwest and west. To the northwest, beyond 31st Drive, there is a large paved parking area and two strip malls (built in 1966 and 1977) containing a Blockbuster, laundromat, restaurants, a dentist office, bedding service and other commercial properties.

5.0 PAST OWNERSHIP

The subject property has been owned and/or operated as a manufactured gas plant by several different power companies since 1887. Prior to the initiation of manufactured gas operations in 1887, the original subject property boundaries included a smaller tract of land (the southwestern portion of Quadrant 2), which was originally subdivided into smaller private properties. Deed records indicate that portions of the original subject property were acquired by the Flushing Gas Light Company between 1859 and 1901 from seven private property owners. However, other records indicate that Flushing Gas Light Company operated the MGP until 1899. Therefore, Flushing's operations ceased sometime between 1899 and 1901. Between 1901 and 1905, Newton and Flushing Gas Company (a subsidiary of the New York and Queens Gas Co.) operated the subject property and MGP, in addition to expanding the subject property boundaries into the northwestern portion of Quadrant 2 in 1901. In 1905, The New York and Queens Gas Company acquired the portions of the subject property previously owned by Flushing Gas Light Company and Newton and Flushing Gas Company. Based on the various historic sources reviewed, the precise year the Flushing Gas Light Company ceased operations is unclear. Between 1909 and 1921, New York and Queens Gas Company acquired and expanded the MGP into the eastern portions of Quadrants 1 and 2. (Map of Property May 9, 1921) Deed information indicates that Con Edison purchased the portions of the subject property in Quadrant 3 from New York and Queens Gas Company on February 26, 1924. New York and Queens Gas Company merged with Con Edison on June 1, 1936, at which time Con Edison assumed operation of the MGP in Quadrant 1, 2 and 3 (Inventory Worksheet Land-Deed information 1859-1930).

The following table summarizes the ownership history for the subject property. Appendix B includes a copy of the 50-year chain-of-title report for the subject property.

The historical chain of title report for the subject property was prepared by Commonwealth Land Title Company. The chain of title report indicates that Block 4406 Lot 32 of the subject property was sold with Block 4406 Lot 86 prior to 1966. Block 4406 Lot 86 is not part of the subject property, however the deeds are the same for Block 4406 Lot 32. The chain of title report indicates that Block 4406 Lot 32 of the subject property was acquired by New York and Queens Gas Company from William Paynor in 1915, from Mabel Coss in 1920, from The Flushing Side Realty and Construction Company in 1921, from Fredrick and Mary White in 1926 and 1927, and from Joseph Desale and Jemie Street in 1930. The chain of title report indicates that Block 4408 Lot 1 was acquired by New York and Queens Gas Company from the Wilton Holding Corporation in 1924 and from Mollie Schiffin in 1924. No other pertinent information was provided in the chain of title report.

Table 5-1 presents a summary of site ownership history.

Historical Ownership Information Table 5-1		
Source	Year	Owner
Brown's Directories	1887 through 1899	Flushing Gas Light Co.
Sanborn Fire Insurance Maps	1892 and 1897	Flushing Gas Light Co.
Brown's Directories	1899 through 1904	Newton and Flushing Gas Co.
Sanborn Fire Insurance Map	1903	Newton and Flushing Gas Co.
Brown's Directories	1905 through 1936	New York and Queens Gas Co.
Chain of Title (Commonwealth) for Block 4406 Lot 32	1915 through 1930	New York and Queens Gas Co.
Sanborn Fire Insurance Maps	1916 and 1941	New York and Queens Gas Co.
Chain of Title (Commonwealth) for Block 4408 Lot 1	1924	New York and Queens Gas Co.
Brown's Directories	1937 through 1946	Consolidated Edison Company of New York
Sanborn Fire Insurance Maps	1943, 1951, 1963, 1981, 1986, 1991, and 1996	Consolidated Edison Company of New York
Unidentified Insurance Map	1954	Consolidated Edison Company of New York

6.0 PAST SITE OPERATIONS

6.1 Site Operations

ENSR compiled the following site operation history for the subject property, based on Sanborn Fire Insurance Maps, Brown's Directories, Title Searches, and additional historical information obtained from Con Edison property and archived records. Figure 4 provides a Historic Use Composite Map depicting former MGP operations and structures, superimposed over current structures.

MGP operations began in 1887 under the Flushing Gas Light Company who operated the plant until 1899 to 1901. Flushing's operations ceased sometime between 1899 and 1901. During this time, MGP operations were concentrated in the southwestern portion of Quadrant 2 and extended northward along the eastern side of the quadrant, adjacent to Byrd's Alley and Myrtle Avenue (32nd Avenue). According to the 1892 and 1897 Sanborn maps, MGP structures consisted of a small generator house (which was later replaced with a larger generator house in the 1940's) containing purifiers and a boiler located in the south central portion of Quadrant 2, three vertical gasometers (two on the 1892 map and three on the 1897 map), a coal storage shed, and a storage building. Coal was manufactured at the subject property from 1887 to 1893. Commencing in 1899, carburetted water gas was produced until the late 1940's.

MGP operations expanded northward into the southern portion of Quadrant 1 after Newton and Flushing Gas Company acquired the subject property in the year 1900. During the period of time in which Newton Flushing Gas Co. operated the MGP, MGP structures were expanded to include a fourth vertical gasometer, and adjacent pump house, a coal shed which was constructed onto the northern end of the existing generator house, a horizontal and a vertical unidentified AST, and a storage shed which was located in the eastern boundary of Quadrant 2.

The Newton and Flushing Gas Company operated the MGP until 1905, at which point the New York and Queens Gas Company assumed control of the MGP operations until 1936. The 1916 Sanborn Map indicates that MGP operations encompassed all the portions of Quadrant 2, in addition to extending into the southwestern portion of Quadrant 1. As of 1916, the existing generator house was further expanded to the north by the addition of a second coal shed, which extended northward to 31st Drive (former Center Street). MGP operations expanded to the eastern portion of Quadrant 2 with the construction of a stack, vertical condenser tanks, and a 1,000,000-gallon gasholder (1915) and a deep well pump house (1918). An oil tank enclosure, containing two vertical oil tanks located in the southwestern portion of Quadrant 1, was constructed in 1916. A period of major construction took place between the years of 1923 to 1929. During this period the 3,500,000 cubic foot waterless gasholder (1925) and several new buildings were erected, and existing buildings were reconstructed, and extensive additions were built. During this time MGP operations extended into Quadrant 3 with the construction of the waterless gasholder.

According to property records reviewed, as of 1935, the MGP included the following buildings and structures; boiler house (additions in 1922 and 1926), generator house (1923), exhaustor house (1927), a pump house (1923), tar extractor house (1925), crusher and shaker house (1926) oil and drip pump house (1924), oil tanks, office building (was originally constructed in 1862 but in 1923 it was relocated), governor house (originally built in 1916 with additions in 1924, a miscellaneous storage shed (1924), compressor house (originally built in 1924 with additions in 1947), booster house, and a 250,000 cu. ft. relief holder. In addition, the MGP included the existing one million cubic foot capacity water-seal type gas holder and a three million cubic foot capacity waterless type gas holder. Ten tar seal pump houses, four oil skimmer pump houses, and a holder office were constructed in 1925 adjacent to the 3,000,000 cubic foot gas holder. The four water gas sets located at the subject property were installed in 1911, 1923, 1924 and 1927 along with their coal and ash handling, connections, and oil supply apparatuses. Purification equipment at the MGP included a washer cool with accessory cooling tower installed in 1928, four circular purifiers installed in 1923 and 1924, two shavings scrubbers installed in 1923 and a tar extractor installed in 1912. Residual refining equipment consisted of a tar separator and coke filter that were installed in 1924 and two tar tanks installed in 1920 and 1926. As of 1935, the plant was devoted to the manufacture, storage and distribution of gas and was designed and equipped to manufacture carburetted water gas. At this time, the MGP had a rated capacity of six million cubic feet per day and a total storage capacity of four million cubic feet of gas.

Exact storage and disposal practices of the on-site by-products and coal contained on the subject property during the operation of the MGP were not available/located in ENSR's research. However, based on historical photographs taken in 1948, coal was stored in piles in the northeastern portion of Quadrant 2 and cable reels, poles, equipment, and 55-gallon drums containing unidentified materials located in a large storage yard, which extended from the western to the northwestern portions of Quadrant 2. On photograph depicts a residual pile containing 55-gallon drums and other miscellaneous debris located north of the 250,000 cubic foot relief holder in the northwestern portion of Quadrant 2.

On June 1, 1936, the New York and Queens Gas Company merged with Con Edison. Con Edison operated the MGP until the late 1940's at which time, production transitioned from manufactured water gas to natural gas. The onset of natural gas production marked the end of MGP operations at the subject property. A natural gas meter and regulator house was constructed at the subject property in 1951, in addition to a governor house in 1948 and natural gas school building in 1953. Exact retirement dates of all of the MGP structures were not available/located in ENSR's research, however, based on a review of Con Edison property records, the following summarizes the approximate retirement dates of some of the MGP structures:

- Storage shed retired in 1953;
- Boiler house retired in 1954;

- Washer cooler pump house retired in 1944;
- Oil and drip pump house retired in 1944;
- Governor station retired 1982;
- 1,000,000-gallon gasholder retired in 1957;
- pump house retired in 1957;
- Deep well pump house retired in 1944; and
- Crusher and shaker house retired in 1954.

6.1.1 Fire Insurance Maps

ENSR was provided with Sanborn Fire Insurance Maps for the subject property dated 1892, 1897, 1903, 1916, 1941, 1943, 1951, 1963, 1981, 1986, 1991, and 1996 from Environmental Data Resources, Inc. (EDR). In addition, ENSR reviewed an unidentified insurance map for the subject property dated 1954 obtained from the Con Edison Property Records. Appendix C provides copies of the representative Sanborn Fire Insurance Maps obtained for the subject property from EDR.

As described in the preface of this report, due to the size and configuration of the subject property, ENSR has subdivided the subject property into three quadrants to aid in the discussion of the site and potential issues of concern. Therefore, discussions with regards to each quadrant will be referenced as Quadrant 1, Quadrant 2, Quadrant 3, etc. Figure 3 includes the breakdown of the three quadrants with regards to the subject property and the surrounding properties. Additionally, due to the size and complexity of the former MGP operations, the structures and information are summarized to highlight the location and types of MGP structures identified in reference to the appropriate Quadrants depicted in the maps reviewed.

Figure 4 includes a Historic Use Composite Map, which includes an overlay containing former MGP structures and operations and dates.

The following descriptions present a summary of the Sanborn Fire Insurance Map history.

6.1.1.1 1892 SANBORN MAP

Subject Property (MGP operations identified as “Flushing Gas Light Co.”)

Quadrant 1:

There are two one-story dwellings, and three unidentified structures located in the southeastern portion of this quadrant. Bayside Avenue (31st Road) borders this quadrant to the north. Center Street (31st Drive) borders this quadrant to the south and segregates it from Quadrant 2. No MGP operations are located in this quadrant.

Quadrant 2:

There are six dwellings and three unidentified structures located in the northwestern, northeastern and southeastern portions of this quadrant. In the southwestern portion of the quadrant, there are several structures identified as "Flushing Gas Light Company." This area includes two vertical aboveground storage tanks (ASTs) identified as "iron gasometers," a one-story "coke shed," a one-story dwelling, and three one-story unidentified structures. These structures make up the MGP operations as of 1892.

Quadrant 3:

Quadrant 3, which extends east over Farrington Street from Quadrant 2, contains one-story dwelling located in the center of the quadrant. There are no MGP operations located on this quadrant.

Adjoining Properties

No structures are depicted and no portions of these properties are depicted on the northern, northwestern and western abutting properties. Three dwellings are located on the southwestern abutting property. To the northeast is the intersection of Bayside Avenue (31st Rd.) and Farrington Street, beyond which is a residential area consisting of several dwellings. Farrington and Linden Streets border the subject property to the east, beyond which are residential areas. To the southeast, is the intersection of Myrtle Avenue (32nd Avenue) and Linden Street, beyond which is a residential area.

6.1.1.2 1897 SANBORN MAP

Subject Property (MGP operations identified as "Flushing Gas Light Co.")

The subject property is of the same configuration as the 1892 map, with the addition of large vertical AST identified as a "gasometer," located in the southwestern portion of Quadrant 2, north of the two existing gasometers identified in the 1892 map, in the area identified as "Flushing Gas Light Co." One of the three unidentified structures depicted in the 1892 map, are identified as the "purifier and meter house."

Adjoining Properties

The adjoining properties are of the same configuration as the 1892 map.

6.1.1.3 1903 SANBORN MAP

Subject Property “MGP operations identified as Newtown and Flushing Gas Co.”

Quadrant 1:

There are three dwellings, one unidentified structure, and two one-story structures that include stables, located in the eastern portion of this quadrant. Bayside Avenue (31st Road) borders this quadrant to the north. Center Street (31st Drive) borders this quadrant to the south and segregates it from Quadrant 2. There are no MGP operations located on this quadrant.

Quadrant 2:

There are six two-story dwellings and a one-story “storage shed,” located in the eastern portion of this quadrant. MGP operations have expanded to encompass the entire western portion of this quadrant. The western portion of the quadrant is identified as the “Newtown and Flushing Gas Co.” There are four vertical ASTs, identified as “gasometers,” located in the southwestern portion of the quadrant, in addition to, a one to two-story “coal shed,” a vertical unidentified AST, a horizontal unidentified AST, a one-story structure and stable, and two unidentified structures, located in the northeastern and eastern portions of the subject property.

Quadrant 3:

Quadrant 3, which extends east over Farrington Street from Quadrant 2, contains a dwelling and two-story stable located in this quadrant. There are no MGP operations located on this quadrant.

Adjoining Properties

There are no structures depicted to the west, northwest, north and northeast of the subject property. To the northeast is the intersection of Bayside Avenue (31st Rd.) and Farrington Street, beyond which is a residential area consisting of several dwellings. Farrington and Linden Streets border the subject property to the east, beyond which are residential areas. To the southeast, is the intersection of Myrtle Avenue (32nd Avenue) and Linden Street, beyond which is not depicted on this map. Myrtle Avenue

(32nd Avenue) abuts the subject property to the south. Byrd's Alley borders the subject property to the southwest, beyond, which are three dwellings.

6.1.1.4 1916 SANBORN MAP

Subject Property (MGP operations identified as "New York and Queens Gas Co.")

Quadrant 1:

There are three dwellings located in the eastern portion of this quadrant, in addition to a stable. Two vertical ASTs identified as "oil tanks," are located in the south central portion of the quadrant, and as part of the northern expansion of the MGP operations that extend from Quadrant 2. 31st Drive (Center Drive) borders this quadrant to the south.

Quadrant 2:

At this time, MGP operations have expanded into the entire quadrant, bounded by 31st Drive to the north, Farrington Street to the east, 32nd Avenue (Myrtle Avenue) to the south, and Byrd's Alley to the west. This area is identified as "New York and Queens Gas Co." In the eastern portion of the quadrant, there is a 1,000,000-gallon "steel gas holder," a dwelling, four unidentified structures, and a stable. In the central portion of the quadrant there is a coal shed, a coal shed and filling bin, two horizontal "condensers," a stack, which is adjacent to three unidentified structures, and one dwelling. The four vertical "gasometers," identified in the 1903 map remain in the southwestern portion of the quadrant; however, one of them is identified as a "cistern." In addition, there are four small, unidentified structures located in the southwestern portion of the quadrant. A one-story shed, one-story "pump house," and an area designated as a "coal bin" is located in the northwestern portion of the quadrant.

Quadrant 3:

Quadrant 3, which extends east over Farrington Street from Quadrant 2, contains a dwelling. There are no MGP operations located on this quadrant.

Adjoining Properties

The northwestern, western, northern, and northeastern abutting properties are not depicted on this map. To the east, beyond Farrington Street, there is a large residential area and a one-story “junk shop” and stable. Abutting the subject property to the south and southeast in the intersection of Linden Street and 32nd Avenue (Myrtle Avenue), beyond which are residential structures with some commercial properties intermixed. Byrd’s Alley abuts the subject property to the southwest, beyond which are three dwelling and a large one-story structure identified as the “Third Ward Hygeia Ice Co.,” which contains two storage rooms and two tank rooms (no tanks are depicted in these areas).

6.1.1.5 1941 SANBORN MAP

Subject Property (MGP operations identified as “New York and Queens Gas Co.”)

Quadrant 1:

Quadrant 1 is identified as “New York and Queens Gas Co.” The two vertical ASTs identified on the 1916 map as “oil tanks,” remain in the south central portion of the quadrant, in addition to a one-story “storage of gas ranges” building, and one-story “pump house.” These structures are part of the northern expansion of the MGP operations depicted in the 1916 map, which extended from Quadrant 2. Quadrants 1 and 2 are now one large parcel that encompasses the MGP operations. Center Street, which had previously divided Quadrants 1 and 2, is not depicted on this map.

Quadrant 2:

MGP operations have expanded into the entire quadrant and, extended entirely onto Quadrant 1 to the north, into Farrington Street to the east, into 32nd Avenue (Myrtle Avenue) to the south, and into Byrd’s Alley to the west. Quadrants 1 and 2 are identified as “New York and Queens Gas Co.” In the eastern portion of the quadrant, there is a 1,000, 000 gallon “steel gas holder,” four vertical “purifier” ASTs, a pump house, a meter house, and an office. In the central portion of the quadrant there is a large two-story generator house, which contains two elevators, six horizontal boilers, storage rooms, and two vertical ASTs. Adjacent to the generator house are three stacks and two horizontal “purifiers.” The four vertical “gasometers,” identified in the 1903 and 1916 maps are no longer depicted in the southwestern portion of the quadrant. Instead the southwestern portion of the quadrant contains two “cooling tower” buildings, a condenser building, a structure identified as “tar separators, and filter rooms,” a pump house, and three unidentified structures.

Quadrant 3:

Quadrant 3, which extends east over Farrington Street from Quadrant 2, contains a 3,500,000 cubic foot steel gasholder, which is part of the eastern expansion of MGP operations.

Adjoining Properties

The northwestern, western, northern, and northeastern abutting properties are not depicted on this map. To the east, beyond Farrington Street, there is a large residential area. Abutting the subject property to the southeast is the intersection of Linden Street and 32nd Avenue (formerly Myrtle Avenue), beyond which is a large structure identified as "Bordens Milk Depot and Garage," which contains a warehouse, storage areas, and an office, surrounded by a residential area. 32nd Avenue (formerly Myrtle Avenue) borders the subject property to the south, beyond which is a "filling station," which includes a store, a dwelling, an autohouse, a structure identified as "auto repair," and two gasoline tanks. Additionally, there is a shed, storage building and an area designated "service yard and contractor's storage," identified as "The Nicholson Co.," and a large residential area located south of 32nd Avenue. Byrd's Alley abuts the subject property to the southwest, where there are two dwellings and two unidentified structures.

6.1.1.6 1943 SANBORN MAP

Subject Property (MGP operations identified as "Consolidated Edison Co. of New York Inc. Gas Plant")

Quadrant 1:

There is a one-story "miscellaneous storage" building located in the northwestern portion of this quadrant. The south central portion of this quadrant includes a one-story structure identified as a "deep well pump," and a diked area that includes a vertical 30,000-gallon oil tank and a 150,000-gallon oil tank.

Quadrant 2:

The 100,000-gallon gas holder depicted in the 1941 map remains in the northeastern portion of this quadrant, in addition to a one-story "scale office," and a one-story "pump house." In the eastern portion of the quadrant, there is a one to two-story "compressor and governor house," which contains coolers. Adjacent to this structure is a horizontal "pulsation tank," and two vertical "air tanks." The four vertical "purifiers" and office depicted in the 1941 map remain in the southeastern portion of the quadrant, in addition to a one-story structure identified as "gas cleaner." In the central portion of the quadrant there is a large two-story "generator house," which contains an elevator, boiler, crusher, locker, exhauster, and pump rooms. Adjacent to the "generator house" are three stacks, a structure identified as "exhaust steam generator," two vertical "scrubbers" ASTs, and a one to two-story structure identified as "tar tank." One of the two "cooling tower" buildings, a pump house, the structure identified as "tar separators, and filter rooms," remains in the southwestern portion of the quadrant. The structure identified as "tar separators and filter rooms," also includes an area designated "drip separator." In addition, there is "a vertical "cooling scrubber" AST, a one-story "oil pump house," a structure identified as a "tar tank," and a hose house. 31st Drive, which is located to the south, is identified as "not open."

Quadrant 3:

The three million-gallon gas holder remains in the eastern portion of this quadrant. Adjacent to the gasholder are ten vertical “tar pump” ASTs, a one-story “holder office,” a one-story “emergency pump house,” a vertical “oil skimmer” AST, two vertical “gasoline tanks,” an elevator, and an unidentified structure.

Adjoining Properties

The majority of the northern, northwestern and western abutting properties are undeveloped, with the exception of a one-story shed located on the northwestern abutting property. Stratton Street and 31st Road abut the subject property to the northeast, beyond which is an area identified as “Hunter Illuminated Car Sign Co.,” which includes a seven-story structure containing shipping and printing areas, machine shops, spray booth areas, sanding areas, labor storage, box shops, and an office. This area also includes two one-story “storage” buildings. Farrington Street borders the subject property to the east and the intersection of Linden Street and 32nd Avenue border the subject property to the southeast, beyond which are residential areas. Thirty Second Avenue borders the subject property to the south, beyond which is a filling station (previously depicted on the 1941 map), the “Thomas Burton, Inc. Lumberyard” and associated office and woodworking buildings, and commercial and residential properties. Byrd’s Alley abuts the subject property to the southwest, beyond which are two dwellings and two autohouses, and an area identified as “City of New York, Bureau of Sewers Corp. and Yard,” which includes storage buildings and offices.

6.1.1.7 1951 Sanborn Map

Subject Property (MGP operations identified as “Consolidated Edison Co. of New York Inc. Gas Plant”)

Quadrant 1:

The one-story “miscellaneous storage” building depicted in the 1943 map remains to be located in the northern portion of this quadrant. The south central portion of this quadrant includes the diked area that includes a vertical 30,000-gallon oil tank depicted in the 1943 map. In addition, there are two one-story “yard offices” located in the southeastern portion of the quadrant.

Quadrant 2:

The eastern portion of the quadrant includes the 100,000 cubic foot gas holder, a one-story “scale office”, a one to two-story “compressor”, a gas compressor and governor house”, a one-story “governor

house”, a one-story “pump house”, a horizontal “pulsation” AST, two vertical “air” ASTs, a one-story structure identified as “gas cleaner”, a one-story “transfer house,” and an office. The central portion of this quadrant includes a two to four-story “boiler room and pump house,” two stacks, one to two-story structure identified as “lockers,” and a one-story “hose house.”

Quadrant 3:

This quadrant has the same configuration as the 1943 map.

Adjoining Properties

The western, northwestern, northern, northeastern, eastern and southern abutting properties have the same configuration as the 1943 map, undeveloped with no structures depicted. Beyond the intersection of Farrington Street and 32nd Avenue, which abuts the subject property to the southwest, is the “Carlson Hoist and Machine Co.,” which includes a one-story building containing offices, storage rooms, and equipment repair. In addition to the two dwellings and two autohouses depicted on the southwestern abutting property in the 1943 map, there is a one-story “storage and auto repair” building and adjacent “contractor storage yard,” beyond which is the “City of New York Bureau of Sewers Corporation Yard,” that was depicted in the 1943 map. In addition to the structures depicted in the 1943 map, there is a one-story “private garage” to the west.

6.1.1.8 1954 Unidentified Insurance Map

Subject Property

Quadrant 1:

This quadrant is the same configuration as the 1951 map.

Quadrant 2:

The majority of this quadrant is the same configuration as the 1951 map, with the addition of a one-story “natural gas meter and regulator house,” located in the south central portion of this quadrant; a vertical oil AST located within the boiler house identified in the 1951 map; a 2,000-gallon “tar” UST adjacent to the boiler house; and coal storage areas identified in the northwestern and southwestern portions of the quadrant.

Quadrant 3:

This quadrant has the same configuration as the 1951 map, with the additions of four “skimmer pumps” that are located adjacent to the ten vertical “tar pump” ASTs identified in the 1951 map, and the two horizontal “gasoline tanks,” which are identified in the 1943 and 1951 maps in the northeastern portion of this quadrant are identified on this map as “two 550-gallon gasoline USTs.”

Adjoining Properties

The intersection of Stratton Street and 31st Road border the subject property to the north, beyond which is vacant land. No structures are depicted in the northwestern abutting property. Beyond Farrington Street to the east, is a large area identified as “two-story frame houses,” a one-story “junk dealer,” and six dwellings and one “autohouse,” beyond which is not depicted in this map. Beyond 32nd Avenue, no structures are depicted on the southeastern abutting property; however, the property is identified as “Carlson Hoist and Machine Co.” A one-story shed, one-story storage structure, a two-story dwelling, store and shed and two structures identified as “auto filling station and auto repairing an servicing” are located on the southern abutting property, beyond which is not depicted on this map. A one-story office and an area identified as a “lumber yard” are depicted in the southwestern abutting property, beyond which is not depicted on this map. To the west, beyond Byrd’s Alley, an area identified as “Truck Body Builders Store Yard,” which includes a one-story garage, and a dwelling, beyond which is an area identified as a “baking plant.” A large area identified as a “store yard, and an area identified as the O.P.C. Dept. Linemans School are depicted in the northwestern abutting properties. The school includes a large structure containing 58 poles and associated equipment in addition to two areas with in the building identified as bleacher seats and rows. The school includes a one-story “O.P.C. Dept. Gas School” building, a one-story shed, and two areas identified as “bleacher seats and rows,” and one area identified as “concrete manhole exhibits.”

6.1.1.9 1963 SANBORN MAP

Subject Property (MGP operations identified as “Consolidated Edison Co. of New York Inc. Gas Plant”)

The subject property is in the same configuration as depicted in the 1954 map, with the addition of a one-story “gas instruction school,” that is located in the northern portion of Quadrant 2.

Adjoining Properties

The western, northwestern, northern, northeastern, eastern, and southeastern abutting properties have the same configuration as the 1951 map. Beyond Byrds Alley and in addition to the one-story “storage and auto repair” building and adjacent “contractor storage yard,” and “City of New York Bureau of Sewers Corporation Yard,” structures depicted in the 1951 map, there is a one-story “auto repair and private garage,” a dwelling, an autohouse, a one to two-story bakery which includes wrapping and storage rooms, a port oven and office located on the southwestern abutting property. The southern

abutting properties have the same configuration as depicted in the 1951 map, with the addition of a one-story structure identified as “carpet manufacturing.”

6.1.1.10 1981 SANBORN MAP

Subject Property

Former MGP structures include only the two one-story “governor houses,” one-story “pump house,” one-story “hose house,” and the one-story “transfer house,” located in Quadrant 2 and identified as “Consolidated Edison of New York Inc. Gas Plant.” No other MGP structures are located in Quadrant 2, or in Quadrants 1 and 3. Quadrant 3 is undeveloped and no structures are depicted. Quadrant 1 includes a large one-story commercial building that was built in 1972, and an adjacent parking area.

Adjoining Properties

Mixed commercial and residential properties abut the subject property to the north, northeast, east, southeast, south, southwest, west and northwest. There is an addition of a filling station located east of the subject property beyond Farrington Street north of Quadrant 3. The abutting properties are of the same configuration as the 1963 map, with the additions of several commercial and warehouse buildings to the northwest and northeast.

6.1.1.11 1986, 1991, 1996 SANBORN MAPS

The subject property and abutting properties have the same configurations as the 1981 map.

6.1.2 Brown’s Directories

Brown's Directories were obtained and reviewed by ENSR for the years 1887 through 1946 (see Appendix D for Brown's Directory). Brown's Directories were compiled and reviewed for statistical information from former MGP operations. According to the directories, Flushing Gas Light Company operated the subject property between 1887 and 1899-1901 (see table in Section 5.0 for historic ownership information). Under the ownership of Flushing Gas Light Company, coal was the process of manufacture conducted at the facility until 1899 at which time Lowe became the process of manufacture. Lowe, a carburetted water gas process of manufacture, capable of making fuel gas from water (as steam) and enriched for candlepower by light “oils” recovered from gas-making residual tars, was manufactured at the subject property from 1899 through 1936 under the different owners.

Between 1890 and 1899 under the ownership of Flushing Gas Light Co., the annual output of manufactured coal ranged between $6-9 \times 10^6$ cubic feet. In 1899, when carburetted water gas operations commenced (Lowe), approximately 20×10^6 cubic feet of water gas was produced, of which time 15% was used for fuel purposes. Production rates were not provided for the years prior to 1889.

By-product generation information, such as coke, tar, coal gas tar, water gas tar quantities, etc., and gas holder capacities were not included for these years of operation.

Between 1901 and 1904, under the operation of Newton Flushing Gas Co., a subsidiary of the New York and Queens Gas Co., water gas was produced at an annual rate ranging between $26\text{--}90 \times 10^6$ cubic feet, of which 33% was used for fuel purposes. Production rates were not provided for the years prior to 1889. By-product generation information, such as coke, tar, coal gas tar, water gas tar quantities, etc., and gas holder capacities were not included for these years of operation.

New York and Queens Gas Co. assumed control of the MGP operations in 1905, under whom, approximately $8,011.41 \times 10^6$ cubic feet of water gas was produced between 1915 and 1930. Carburetted water gas was the process of manufacture during this time period. By-product information for these years of operations varied in detail; therefore, could only be summarized for certain year spans. By-product information reported that approximately 2,075,339 gallons of tar were produced between 1924 and 1930; 241,308 gallons of drip oil were produced between 1929 and 1931, and 22,716 gallons of light oil were produced between 1925 and 1926. Gasholder capacities at the MGP ranged from 4×10^5 cubic feet between 1909 and 1913, and 13.5×10^5 cubic feet between 1916 and 1924, to between 40 and 41.5×10^5 cubic feet between 1925 and 1935.

In 1937, Con Edison assumed control of the MGP operations, at which time carburetted water gas was the process of manufacture. According to the directories, the average annual production rate for the years of 1937 through 1946 were $40,935 \times 10^6$ cubic feet, of which $29,945 \times 10^6$ cubic feet were water gas and $10,952 \times 10^6$ cubic feet was oven gas. Approximately 7,204,634 tons of coal was carbonized and 4,057,294 tons of coke were used between 1937 and 1946. Of the $124,602 \times 10^6$ cubic feet of gas produced between 1940 and 1942, approximately:

- 202,143 tons of coke was made;
- 25,710,665 gallons of coke oven tar was made;
- 120,396,249 gallons of heavy tar was made – 2% of which was used or sold;
- 6,687,760 gallons of light tar were made – Less than 1% of which was used or sold;
- 31,154,033 gallons of light oils were made – Less than 1% of which was used or sold;
- 74,618 gallons of drip oils were made; and
- 64,236,648 pounds of sulphate of ammonia were made.

By-product information for sold quantities was not included in the directories. Some comparisons were excluded due to the information not included or not practically reviewable.

6.1.3 Public Service Commission Reports

Public Service Commission Reports were reviewed in Albany, NY and specific information for the Farrington site was unavailable for the subject property.

6.1.4 Chain-of-Title Reports

A 50-year chain-of-title report was obtained from Commonwealth Land Title Company and the information is included in Section 5.0. The chain-of-title report is included in Appendix B.

6.1.5 Additional Historical Sources

ENSR conducted historical research at Con Edison's Real Estate and Property department records at 4 Irving Place, New York, N.Y. A description of ENSR's findings from the research conducted has been incorporated into Section 6.1.

7.0 SITE REGULATORY INFORMATION

7.1 Federal and State Database Review

As part of ENSR's investigation of the subject property, a search of various governmental databases was conducted by Environmental Data Resources (EDR) of Southport, Connecticut, and reviewed by ENSR. Appendix E provides a copy of the EDR database report.

The following federal and state contamination related databases were searched for the area surrounding the subject property; the various search distances used are noted in parenthesis:

- NPL: for existing Superfund sites on the National Priorities List (1.0 mile of the subject property).
- Proposed NPL: for proposed Superfund sites on the National Priorities List (1.0 mile of the subject property).
- CERCLIS: for abandoned, uncontrolled or inactive hazardous waste sites reported to the U.S. EPA. (0.5 mile).
- CERC-NFRAP: for CERCLIS sites that have been designated "No further Remedial Action Planned" and have been removed from CERCLIS (0.25 mile).
- CORRACTS: for hazardous waste handlers with RCRA corrective action activity (1.0 mile).
- RCRIS/TSD: reported sites that treat, store and/or dispose of hazardous waste and subject to the federal RCRA regulations (0.5 mile).
- RCRIS/LQG: for reported large quantity generators of hazardous waste (0.25 mile).
- RCRIS/SQG: for reported small quantity generators of hazardous waste (0.25 mile).
- ERNS: for sites reporting spills to the U.S. EPA and/or the U.S. Coast Guard under various federal regulations (target property).
- SHWS: for identified hazardous waste sites designated under various state regulations (1.0 mile).

- SWF/LF: for identified solid waste facilities and landfill sites designated under various state regulations (0.5 mile).
- LTANKS: for leaking underground storage tanks reported to the state under various state regulations (0.5 mile).
- UST: for underground storage tanks registered on the property under various state regulations (0.25 mile).
- CBS AST: for facilities storing hazardous substances in above ground tanks with capacities greater than 185 gallons and/or USTs of any size (0.25 mile).
- MOSF AST & UST: facilities with petroleum storage capabilities of 400,000 gallons or greater (0.5 mile).
- VCP: for sites under the State Voluntary Cleanup Program (0.5-mile).
- SWTIRE: for sites on the State Registered Waste Tire & Facility List (0.5 mile).
- SWRCY: for sites on the Registered Recycling Facility List (0.5-mile).
- FINDS: for sites that are regulated or tracked by the EPA for a variety of programs (target property).
- Coal Gas: for existence and location of former manufactured gas sites (1.0 mile).

All of the current listings refer to regulatory status, reporting and compliance activity, registered tanks, and reported releases, which occurred from 1986 through the present. None of the database listings refer to historic MGP operations at the subject property with the exception of a Coal Gas listing (see below), which indicates that there was formerly a manufactured gas plant located at the property. Facilities identified at the subject property address and abutting properties are discussed below.

Subject Property

The subject property is identified in the RCRIS-LQG database with one violation (priority low), which was issued on March 31, 2000. The actual date of compliance was not included in the database. This violation is not expected to present a continued concern to the environmental conditions at the subject property. The subject property was not listed on any other databases.

The subject property address was also identified in the orphan summary list in the LTANK database, however, due to insufficient address information the listings could not be accurately located and detailed information regarding the listings was not available for review. The subject property was also listed on the Coal Gas database under the name "New York and Queens Electric Light and Power Co." However, due to poor or inadequate information, the site was not mapped and no other details were provided.

Surrounding Properties

Adjoining properties to the northeast (Linden Maintenance Corp.), southwest (US Postal Service-Vehicle Maintenance) and southeast (Thermax Wire Corp.) were identified in the RCRIS-LQG, RCRIS-SQG, and LTANKS databases. The Linden Maintenance Corp., which is located over 1,000 feet south of the subject property, was listed in the RCRIS-SQG with no violations and in the LTANKS database for a tank test failure during a tank installation reported in March 10, 1998. Information regarding the regulatory status was not included in the database. The US Postal Service Vehicle Maintenance is located less than 1,250 feet southwest from the subject property, was listed in the RCRIS-LQG database; however, no violations were listed. The Thermax Wire Corp. is located adjacent to the southeastern boundary of the subject property and was listed in the RCRIS-LQG database as a generator with no violations.

One NFRAP site was identified in the database, located approximately 1,250 feet southwest of the subject property. This site was not listed on the NPL and the Preliminary Assessment was completed on June 26, 1989.

Seven RCRIS-LQG sites were identified within one-half mile of the subject property, one of which was the subject property and was described above. The remaining sites did not have any violations, had violations that were brought into compliance, or had outstanding violations of low priority. Ten RCRIS-SQG sites were identified within one-half mile of the subject property, none of which had any violations listed.

One SHWS site was identified over one-half mile west of the subject property. This site involved a 350,000-gallon lagoon excavation and closure, which formerly contained PCB contaminated oil and wastewater. Since the onset of remedial activities in 1981, wastes have been removed, the lagoon was cleaned and built over. However, confirmatory soil samples indicate remaining contamination in the vicinity of the former lagoon and monitoring is continuing.

Eighteen LTANKS sites were identified within one-half mile of the subject property, three of which are located within 1,000 feet of the subject property. The first LTANKS site, Linden Maintenance Corp. was described in the above section as an adjoining property. The second and third LTANKS sites are the same property, which is located over one-eighth mile southeast of the subject property. This site

involved a tank test failure for a No. 4 fuel oil tank that was reported on August 30, 1996. No other details were included in the database with regards to the current regulatory status.

7.2 Federal Agency Records

ENSR submitted a Freedom of Information Act (FOIA) request to the Environmental Protection Agency (EPA) for the subject property. According to the EPA, they do not maintain information for sites existing prior to 1970. Since MGP operations were conducted at the subject property until the 1940's, the EPA does not have any information regarding the former MGP operations. Information received after the date of this report will be included in an addendum.

7.3 State Agency Records

ENSR submitted a FOIA request to the NYSDEC. No response to our request has been received as of the date of this report. Any relevant information pertaining to the subject property obtained from the NYSDEC will be submitted to Con Edison as a supplemental report.

7.4 Local Agency Records

ENSR submitted FOIA requests to the NY City Fire Department, New York City Department of Environmental Protection (NYCDEP), New York City Department of Building, and the New York City Environmental Investigations Department (Health Department). No information has been received with regard to the subject property at this time. Any relevant information pertaining to the subject property obtained from the above agencies will be submitted to Con Edison as a supplemental report.

8.0 POTENTIAL RECEPTORS

8.1 Local Groundwater Use and Surface Waters

Groundwater supply systems were developed for the Queens and Kings County areas in the 1880s. By 1947, however, severe salt-water encroachment had occurred in many of these areas due to excessive groundwater pumping. By this time, the public groundwater supply in Kings County (Brooklyn) had been replaced by the New York City municipal water supply, derived primarily from surface water reservoirs in upstate New York. By 1974, only one water supply company (the Jamaica Water Supply Company) continued to pump groundwater in Queens County. The Jamaica Water Supply Company, which continues to pump groundwater in the southeastern part of Queens County, currently supplies drinking water (approximately 30 million gallons per day) to about eight percent of the New York City population (ENSR, 1994).

Due to shortfalls in the New York City water supply system, renewed interest has been expressed in the groundwater aquifers underlying Kings and Queens Counties. An investigation of the groundwater quality in Brooklyn and Queens (Brooklyn/Queens Groundwater Quality Investigation, Dec. 1988) was recently conducted by the NYSDEC. It was determined, however, that a more comprehensive study was needed prior to determining whether the Brooklyn/Queens Aquifer Systems is a viable future water supply source (ENSR, 1994).

Groundwater in the vicinity of the subject property is not used for drinking water purposes. Residents of the area are connected to the New York City public water supply system. Groundwater pumping of production wells occurs at off-site locations in the site vicinity for both industrial cooling and process purposes. The subject property is located approximately 2,000 feet northeast of Flushing creek, 1,200 feet southwest of Mill Creek and 4,000 feet east of Flushing Bay.

8.2 Other Potential Sensitive Receptors

There were no sensitive receptors identified within the immediate area of the subject property. However, Leavittis Park is located approximately 1,100 feet southeast of the subject property. Additionally, two schools were identified within one half-mile of the subject property. The Flushing High School is located approximately 2,000 feet southeast from the subject property and the Caldwellader Colden School is located 2,000 feet east from the subject property. No other sensitive receptors were identified in the vicinity of the subject property. ENSR did not identify any evidence of contamination or seepage of contamination on any of the abutting site with regard to former MGP facilities. In addition, information regarding buildings within the vicinity of the subject property that contain basements was not available after ENSR's extensive research; however, it is assumed that based on the proximity to the surrounding water bodies and approximate depth to water, that many of the buildings in the vicinity of the subject property would not contain a basement (N.Y.C. Board of Education).

9.0 DISCUSSION AND CONCLUSIONS

ENSR International (ENSR) was retained by Consolidated Edison Company of New York, Inc. (Con Edison) to conduct Site History Research for the former Manufactured Gas Plant (MGP) site known as Farrington Gas Works property located at 31-06 to 31-24 and 31-37 to 31-53 Farrington Street in Flushing, New York. The objective of the MGP Site History Research was to gather historical information on the former MGP site operated by Con Edison and/or its predecessor companies, and to assess any potential impacts associated with these properties.

ENSR's scope of work for this site included the following:

- Review of Con Ed Property and Real Estate Files;
- Review of Brown's Directories of North American and International Gas Companies;
- Review of Sanborn Insurance Maps dated 1892, 1897, 1903, 1916, 1941, 1943, 1951, 1961, 1981, 1986, 1991, and 1996 from Environmental Data Resources, Inc. (EDR). In addition, ENSR reviewed an unidentified fire insurance map for the subject property dated 1954 obtained from the Con Edison property records.
- Review of a 50-year Chain-of-Title report;
- Submittal of FOIA letters to the USEPA Region II and the NYSDEC;
- Review of an environmental database search report prepared by EDR, and
- A site reconnaissance of the subject property.

Based on the scope of work performed, the following conclusions have been made:

- The subject property consists of approximately 6.17 acre area (approximately 268,895 square feet), which contains several commercial properties, identified as Block 4407 Lot 1, Block 4406 Lots 30, 32, and 99, and Block 4408 Lot 1. The subject property and former MGP site boundaries are bordered to the north by 31st Road (formerly Bayside Avenue), to the east by Farrington and Linden Streets, and to the south by 32nd Avenue (formerly Myrtle Avenue). The western boundary of the subject property is approximately 200 feet east of Downing Street and is bordered by Miller Street (Byrd's Alley) to the southwest. The subject property is located approximately 2,000 feet northeast of Flushing creek, 1,200 feet southwest of Mill Creek and 4,000 feet east of Flushing Bay. According to the New York City Department of City Planning, the subject property and

northwestern, western, southwestern and southern abutting properties are zoned as M2-1; medium manufacturing district (medium performance), and the abutting properties east of Farrington Street are zoned as M1-1; light manufacturing district (high performance). The location of the former MGP operations subject property and the extent were determined through review of historical Fire Insurance Maps, previous reports, information provided by Con Edison and additional research.

- The subject property was operated as a MGP site from 1887 to the late 1940's.
- Former MGP structures identified on the subject property during MGP operations included the following buildings and structures; boiler house, generator house, exhaustor house, pump houses, tar extractor house, crusher and shaker house, oil and drip pump house, oil tanks, tar tanks, washer and cooling towers, oil skimmer pump houses, four circular purifiers, two shavings scrubbers, a tar extractor, a tar separator and coke filter, an office building, governor house, a miscellaneous storage shed, compressor house, booster house, a 250,000 cu. ft. relief holder, a one million cubic foot gasholder, and a three million cubic foot gasholder. The MGP operations were concentrated in Quadrant 2.
- Retirement of the former MGP structures began in the late 1940's, at which time there was a transition from carburetted water gas production to natural gas production. Most of the MGP structures were demolished, leveled, backfilled and paved over. Three of the former MGP structures remain at the subject property, which included the former governor house, located along the eastern boundary of the southern lot owned by Con Edison in Quadrant 2, and the transformer and pump houses, located along the southern boundary of the southern lot in Quadrant 2. However, due to site access restrictions, ENSR did not access these structures located on the subject property; therefore, the interior portions were not observed nor were current usages determined.
- Con Edison currently owns the portions of the subject property located in Quadrant 2. According to the Queens County Department of Finance, the Pathmark, liquor store and restaurant (built in 1972) located on the subject property in Quadrant 1 are owned by Feinrose Associates, and the recycling plant located on the subject property in Quadrant 3 is owned by Con Edison.
- Brown's Directories were obtained and reviewed by ENSR for the years 1887 through 1946 (see Appendix D for Brown's Directory). Brown's Directories were compiled and reviewed for statistical information from former MGP operations. According to the directories, Flushing Gas Light Company operated the subject property between 1887 and 1899 (see table in Section 5.0 for historic ownership information). Under the ownership of Flushing Gas Light Company, coal was the process of manufacture conducted at the facility until 1899 at which Lowe became the process of manufacture. Lowe, a carburetted water gas process of manufacture, capable of making fuel gas from water (as steam) and enriched for candlepower by light "oils" recovered from gas-making residual tars, was manufactured at the subject property from 1899 through 1946 under the Newton

Flushing Gas Co., a subsidiary of the New York and Queens Gas Co., between 1900 and 1905, under the New York and Queens Gas Co. from between 1906 to 1936 and under Con Edison until the late 1940's when MGP operations are believed to have ceased.

10.0 SUMMARY OF HISTORICAL RESEARCH FINDINGS

For the purposes of prioritizing Con Edison's MGP sites by utilizing a qualitative ranking system, the following information is listed with regards to key factors dictating potential risk from the former operations.

- According to the information provided and the site reconnaissance, Con Edison owns and controls access and site usage of the portions the subject property located in Quadrants 2 and 3.
- The relative size of the subject property is approximately 6.17 acres.
- Indication of plans for re-development or future land uses was not observed at the subject property.
- The potential for direct exposure to impacted subsurface conditions and potential volatilization exposure pathways to workers are low.
- No potential for site actions could be triggered by other regulatory means.
- There were no sensitive receptors identified within the immediate area of the subject property. However, Leavitts Park is located approximately 1,100 feet southeast of the subject property. Additionally, two schools were identified within one half-mile of the subject property. The Flushing High School is located approximately 2,000 feet southeast from the subject property and the Caldwellader Colden School is located 2,000 feet east from the subject property. No other sensitive receptors were identified in the vicinity of the subject property. ENSR did not identify any evidence of contamination or seepage of contamination on any of the abutting site with regard to former MGP facilities.
- ENSR did not observe ongoing or obvious impacts to surface waters on or in the vicinity of the subject property.

11.0 REFERENCES

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Appendix A

Site Photographs

Appendix B

Chain of Title Report

Appendix C

Sanborn Insurance Maps

Appendix D

Brown's Directories of North American Gas Companies

Appendix E

Environmental Data Resource (EDR) Report

Appendix F

History Research Report Checklist