DECISION DOCUMENT

Former ANSCO Camera Factory
Brownfield Cleanup Program
Binghamton, Broome County
Site No. C704059
December 2019

Prepared by
Division of Environmental Remediation
New York State Department of Environmental Conservation

DECLARATION STATEMENT - DECISION DOCUMENT

Former ANSCO Camera Factory
Brownfield Cleanup Program
Binghamton, Broome County
Site No. C704059
December 2019

Statement of Purpose and Basis

This document presents the remedy for the Former ANSCO Camera Factory site, a brownfield cleanup site. The remedial program was chosen in accordance with the New York State Environmental Conservation Law and Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York (6 NYCRR) Part 375.

This decision is based on the Administrative Record of the New York State Department of Environmental Conservation (the Department) for the Former ANSCO Camera Factory site and the public's input to the proposed remedy presented by the Department.

Description of Selected Remedy

The elements of the selected remedy are as follows:

1. Remedial Design

A remedial design program will be implemented to provide the details necessary for the construction, operation, optimization, maintenance, and monitoring of the remedial program. Green remediation principles and techniques will be implemented to the extent feasible in the design, implementation, and site management of the remedy as per DER-31. The major green remediation components are as follows:

- Considering the environmental impacts of treatment technologies and remedy stewardship over the long term;
- Reducing direct and indirect greenhouse gases and other emissions;
- Increasing energy efficiency and minimizing use of non-renewable energy;
- Conserving and efficiently managing resources and materials;
- Reducing waste, increasing recycling and increasing reuse of materials which would otherwise be considered a waste;
- Maximizing habitat value and creating habitat when possible;
- Fostering green and healthy communities and working landscapes which balance ecological, economic and social goals;
- Integrating the remedy with the end use where possible and encouraging green and sustainable re-development; and

- Additionally, to incorporate green remediation principles and techniques to the extent feasible in the future development at this site, any future on-site buildings will include, at a minimum, a 20-mil vapor barrier/waterproofing membrane on the foundation to improve energy efficiency as an element of construction.

2. Excavation

All soils which exceed the restricted residential soil cleanup objectives (SCOs) and can't be beneficially reused beneath the cover system described in remedy element 4 will be taken off-site for proper disposal in order to implement the remedy.

3. Backfill

On-site soil may be used below the cover system described in remedy element 4 to establish the designed grades at the site. If additional backfill is needed to establish design grades, clean fill meeting the requirements of 6 NYCRR Part 375-6.7(d) will be brought in to replace the excavated soil and establish the designed grades at the site. Portions of the site will be re-graded to accommodate installation of a cover system.

4. Cover System

A site cover will be required to allow for restricted residential use of the site in areas where the upper two feet of exposed surface soil will exceed the restricted residential SCOs. Where a soil cover is to be used it will be a minimum of two feet of soil placed over a demarcation layer, with the upper six inches of soil of sufficient quality to maintain a vegetative cover. Soil cover material, including any fill material brought to the site, will meet the SCOs for cover material for the use of the site as set forth in 6 NYCRR Part 375-6.7(d). Substitution of other materials and components may be allowed where such components already exist or are a component of the tangible property to be placed as part of site redevelopment. Such components may include, but are not necessarily limited to: pavement, concrete, paved surface parking areas, sidewalks, building foundations and building slabs.

5. Vapor Mitigation

Any on-site buildings will be required to have a sub-slab depressurization system, or a similarly engineered system, to prevent the migration of vapors into the building from contaminated soil and groundwater.

6. Institutional Control

Imposition of an institutional control in the form of an environmental easement for the controlled property which will:

- require the remedial party or site owner to complete and submit to the Department a periodic certification of institutional and engineering controls in accordance with Part 375-1.8 (h)(3);
- allow the use and development of the controlled property for restricted residential use as defined by Part 375-1.8(g), although land use is subject to local zoning laws;
- restrict the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by the NYSDOH or County DOH; and
- require compliance with the Department approved Site Management Plan.

7. Site Management Plan

A Site Management Plan is required, which includes the following:

a. an Institutional and Engineering Control Plan that identifies all use restrictions and engineering controls for the site and details the steps and media-specific requirements necessary to ensure the following institutional and/or engineering controls remain in place and effective:

   Institutional Controls: The Environmental Easement discussed in Paragraph 6 above.

   Engineering Controls: The Cover System discussed in Paragraph 4 and the Vapor Mitigation discussed in Paragraph 5 above.

   This plan includes, but may not be limited to:

   - an Excavation Plan which details the provisions for management of future excavations in areas of remaining contamination;
   - descriptions of the provisions of the environmental easement including any land use and groundwater use restrictions;
   - a provision that should a building foundation or building slab be removed in the future, a cover system consistent with that described in Paragraph 2 above will be placed in any areas where the upper two feet of exposed surface soil exceed the applicable soil cleanup objectives (SCOs)
   - provisions for the management and inspection of the identified engineering controls;
   - maintaining site access controls and Department notification; and
   - the steps necessary for the periodic reviews and certification of the institutional and/or engineering controls.

b. a Monitoring Plan to assess the performance and effectiveness of the remedy. The plan includes, but may not be limited to:

   - monitoring of groundwater to assess the performance and effectiveness of the remedy; and
   - a schedule of monitoring and frequency of submittals to the Department.

c. an Operation and Maintenance (O&M) Plan to ensure continued operation, maintenance, optimization, monitoring, inspection, and reporting of any mechanical or physical components of the remedy. The plan includes, but is not limited to:

   - procedures for operating and maintaining the remedy;
   - compliance monitoring of treatment systems to ensure proper O&M as well as providing the data for any necessary permit or permit equivalent reporting;
   - maintaining site access controls and Department notification; and
   - providing the Department access to the site and O&M records.

Declaration

The remedy conforms with promulgated standards and criteria that are directly applicable, or that are relevant and appropriate and takes into consideration Department guidance, as appropriate. The remedy is protective of public health and the environment.

12/6/2019
Date

Susan Edwards
Susan Edwards, Director
Remedial Bureau D

DECISION DOCUMENT

Former ANSCO Camera Factory
Binghamton, Broome County
Site No. C704059
November 2019

SECTION 1: SUMMARY AND PURPOSE

The New York State Department of Environmental Conservation (the Department), in consultation with the New York State Department of Health (NYSDOH), has selected a remedy for the above referenced site. The disposal of contaminants at the site has resulted in threats to public health and the environment that would be addressed by the remedy. The disposal or release of contaminants at this site, as more fully described in this document, has contaminated various environmental media. Contaminants include hazardous waste and/or petroleum.

The New York State Brownfield Cleanup Program (BCP) is a voluntary program. The goal of the BCP is to enhance private-sector cleanups of brownfields and to reduce development pressure on "greenfields." A brownfield site is real property, the redevelopment or reuse of which may be complicated by the presence or potential presence of a contaminant.

The Department has issued this document in accordance with the requirements of New York State Environmental Conservation Law and 6 NYCRR Part 375. This document is a summary of the information that can be found in the site-related reports and documents.

SECTION 2: CITIZEN PARTICIPATION

The Department seeks input from the community on all remedies. A public comment period was held, during which the public was encouraged to submit comment on the proposed remedy. All comments on the remedy received during the comment period were considered by the Department in selecting a remedy for the site. Site-related reports and documents were made available for review by the public at the following document repositories:

DECInfo Locator – Web Application
https://gisservices.dec.ny.gov/gis/dil/index.html?rs=C704059

Broome County Public Library
185 Court Street
Binghamton, NY 13901

DEC Kirkwood Sub-office
1679 Route 11
Kirkwood, NY 13795

Receive Site Citizen Participation Information By Email

Please note that the Department's Division of Environmental Remediation (DER) is "going paperless" relative to citizen participation information. The ultimate goal is to distribute citizen participation information about contaminated sites electronically by way of county email listservs. Information will be distributed for all sites that are being investigated and cleaned up in a particular county under the State Superfund Program, Environmental Restoration Program, Brownfield Cleanup Program and Resource Conservation and Recovery Act Program. We encourage the public to sign up for one or more county listservs at http://www.dec.ny.gov/chemical/61092.html

SECTION 3: SITE DESCRIPTION AND HISTORY

Location: The Former ANSCO Camera Factory site consists of two parcels, 9 Emma Street and 16 Emma Street, in the City of Binghamton. The two parcels span Emma Street and total approximately 4.2 acres. The site is just north of Main Street and is bordered on the north side by an active rail line.

Site Features: The 9 Emma Street parcel, on the west side of Emma Street, is vacant, open, and under development as a parking lot. The 16 Emma Street parcel, on the east side of Emma Street, includes an approximately 140,000 square foot building. The main structure of the building, constructed from 1927 to 1928, is four stories with a sub-grade basement. The annex portion of the building, added to the north side of the main structure in 1950, is two stories above a slab-on-grade. The building has undergone renovation for mixed residential and commercial uses. The first floor is almost entirely occupied by commercial businesses. Floors two through four are solely residential and have 100 newly constructed, mostly occupied apartments and associated shared use spaces. The basement of the building's main structure has been converted to indoor parking. Smaller unoccupied outbuildings, grass lawns, landscaped areas, concrete sidewalks, and paved parking lots surround the building on this parcel. Grass lawns and landscaped areas on the site are limited to small areas near the building, within parking lot curb lawns, and along the street. Both parcels are generally flat, but slightly elevated from the street. 16 Emma Street has a security gate at the street entry and an eight-foot high security fence at the north, east, and south property boundaries.

Current Zoning and Land Use: The site is currently zoned for service commercial use, which allows for residential uses in a mixed-use development setting. Businesses on the first floor include: E&M Power, Glowa Manufacturing, Inc., and Crysta-Lyn. These businesses occupied the building prior to and during reconstruction. Most of the adjacent parcels are also zoned for commercial or service commercial uses.

Past Use of the Site: The 9 Emma Street property has been an open lot since the early 1900s, but may have been associated with industrial activities that occurred along the western property boundary from 1918 to at least 1970. Current site grades at this parcel appear to have been achieved by using historical fill material.

From 1927 to 1940, the building at 16 Emma Street was used by The General Cigar Company.

From 1940 to 1970, it was used by Ansco as their camera factory. Uses since 1970 have been mixed commercial and industrial and have involved companies occupying only portions of the building, but operating at the same time. Uses by E&M Power, Glowa Manufacturing, Inc., and Crysta-Lyn include industrial electronic parts and equipment supply, computer peripheral manufacturing, and specialty chemical dye manufacturing, respectively. Past uses included commercial electrical contracting, and electroplating. The electroplating business was contained to and operated in the eastern end of the basement. All other businesses occupied spaces on the first floor.

Six spills were reported at the site from 1990 to 2010. The spills involved electroplating waste, used oil and transmission fluid, uncontained fluid in the electroplating area, No. 4 fuel oil, hydraulic oil, and fuel oil contamination encountered during fuel storage tank removal. The fuel oil spills required the greatest effort for cleanup and involved removal of contaminated soil for off-site disposal. The spills of used oil, transmission fluid, fluid in the electroplating area, and hydraulic oil, were all small volumes, occurred on asphalt pavement or concrete and were easily cleaned up.

Building renovations included abatement and removal of all hazardous building materials. Additional actions included removal and off-site disposal of all remaining products, wastes, contaminated building materials, equipment, and waste treatment structures associated with the former electroplating business.

Site Geology and Hydrogeology: Historic fill material, including brick, coal, and ash have been found throughout the site with a thickness generally less than three feet. Greater thickness of fill occurs on the 16 Emma Street parcel north of the main building (up to 13 feet thick) and toward the eastern side of the parcel (generally four to five feet thick). Native soil underlies the fill and consists of brown sand, silt and clay with fine to coarse gravel, and some small cobbles.

Depth to groundwater ranged from 20 to 25 feet below ground surface. The groundwater flow direction is variable showing some indications of a localized groundwater divide. The strongest component of groundwater flow on the 16 Emma Street parcel appears to be to the east-northeast. The site overlies the Clinton Street-Ball Park Aquifer, designated as a primary aquifer.

A site location map is attached as Figure 1.

SECTION 4: LAND USE AND PHYSICAL SETTING

The Department may consider the current, intended, and reasonably anticipated future land use of the site and its surroundings when evaluating a remedy for soil remediation. For this site, an alternative that restricts the use of the site to restricted residential use (which allows for commercial use and industrial use) as described in Part 375-1.8(g) was evaluated in addition to an alternative which would allow for unrestricted use of the site.

A comparison of the results of the Remedial Investigation (RI) to the appropriate standards, criteria and guidance values (SCGs) for the identified land use and the unrestricted use SCGs for the site contaminants is available in the RI Report.

SECTION 5: ENFORCEMENT STATUS

The Applicant under the Brownfield Cleanup Agreement is a Volunteer. The Applicant does not have an obligation to address off-site contamination. However, the Department in consultation with the NYSDOH has determined that the site does pose a significant threat to public health due to the potential for human exposure to site-related contamination via soil vapor intrusion.

SECTION 6: SITE CONTAMINATION

6.1: Summary of the Remedial Investigation

A remedial investigation (RI) serves as the mechanism for collecting data to:

- characterize site conditions;
- determine the nature of the contamination; and
- assess risk to human health and the environment.

The RI is intended to identify the nature (or type) of contamination which may be present at a site and the extent of that contamination in the environment on the site or leaving the site. The RI reports on data gathered to determine if the soil, groundwater, soil vapor, indoor air, surface water or sediments may have been contaminated. Monitoring wells are installed to assess groundwater and soil borings or test pits are installed to sample soil and/or waste identified. If other natural resources are present, such as surface water bodies or wetlands, the water and sediment may be sampled as well. Based on the presence of contaminants in soil and groundwater, soil vapor will also be sampled for the presence of contamination. Data collected in the RI influence the development of remedial alternatives. The RI report is available for review in the site document repository and the results are summarized in section 6.3.

The analytical data collected on this site includes data for:

- groundwater
- soil
- indoor air
- sub-slab vapor

6.1.1: Standards, Criteria, and Guidance (SCGs)

The remedy must conform to promulgated standards and criteria that are directly applicable or that are relevant and appropriate. The selection of a remedy must also take into consideration guidance, as appropriate. Standards, Criteria and Guidance are hereafter called SCGs.

To determine whether the contaminants identified in various media are present at levels of concern, the data from the RI were compared to media-specific SCGs. The Department has developed SCGs for groundwater, surface water, sediments, and soil. The NYSDOH has developed SCGs for drinking water and soil vapor intrusion. For a full listing of all SCGs see: http://www.dec.ny.gov/regulations/61794.html

6.1.2: RI Results

The data have identified contaminants of concern. A "contaminant of concern" is a contaminant that is sufficiently present in frequency and concentration in the environment to require evaluation for remedial action. Not all contaminants identified on the property are contaminants of concern. The nature and extent of contamination and environmental media requiring action are summarized below. Additionally, the RI Report contains a full discussion of the data. The contaminants of concern identified at this site are:

cis-1,2-dichloroethene
tetrachloroethene (PCE)
trichloroethene (TCE)
benzo(a)anthracene
benzo(a)pyrene
benzo(b)fluoranthene
chrysene
dibenz[a,h]anthracene
indeno(1,2,3-CD)pyrene
cadmium
chromium
copper
lead
mercury
polychlorinated biphenyls (PCBs)

The contaminants of concern exceed the applicable SCGs for:

- groundwater
- soil
- soil vapor intrusion
- indoor air

6.2: Interim Remedial Measures

An interim remedial measure (IRM) is conducted at a site when a source of contamination or exposure pathway can be effectively addressed before issuance of the Decision Document.

The following IRMs have been completed at this site based on conditions observed during the RI. Locations of the IRMs are shown on Figure 2.

IRM Soil Excavation - 9 Emma Street

Excavation and off-site disposal of historic fill material contaminated with metals (primarily lead) was conducted on May 1, 2019. The excavation area was defined through a pre-excavation soil boring and sampling program. The limits of excavation were approximately 25 feet (north-south) by 65 feet (east-west). Fill with higher concentrations of metals and visual waste material was excavated to depths ranging from two to three and half feet below grade. A total of 291 tons of metals contaminated fill was removed from the site. Confirmation sampling of remaining soil was not conducted based on the pre-excavation sampling and the planned installation of a cover system.

Any remaining contaminated soil or fill at the base and sides of the excavation were covered with a demarcation layer (i.e., geotextile fabric) prior to backfilling. Clean fill meeting the

requirements of 6 NYCRR Part 375-6.7(d) was brought in to complete the backfilling of the excavation and establish the designed grades at the site. The backfill has been integrated with a site-wide cover system that covers all remaining soil and fill.

IRM Soil Excavation - 16 Emma Street

Excavation and off-site disposal of soil contaminated primarily with trichloroethene (TCE) was conducted between April 30 and June 6, 2019. The excavation area was defined through a pre-excavation soil boring and sampling program. The area of excavation was approximately 27 feet at its widest section (north-south) by 200 feet (east-west). Soil with higher concentrations of TCE and some visual waste material was excavated to depths ranging from two to three feet below grade. A total of 326 tons of TCE contaminated soil was removed from the site. Confirmation sampling of remaining soil was not conducted based on the pre-excavation sampling and the planned installation of a cover system.

Any remaining contaminated soil or fill at the base and sides of the excavation were covered with a demarcation layer (i.e., geotextile fabric) prior to backfilling. Clean fill meeting the requirements of 6 NYCRR Part 375-6.7(d) was brought in to complete the backfilling of the excavation and establish the designed grades at the site. The backfill has been integrated with a site-wide cover system that covers all remaining soil and fill.

6.3: Summary of Environmental Assessment

This section summarizes the assessment of existing and potential future environmental impacts presented by the site. Environmental impacts may include existing and potential future exposure pathways to fish and wildlife receptors, wetlands, groundwater resources, and surface water. The RI report presents a detailed discussion of any existing and potential impacts from the site to fish and wildlife receptors.

Nature and Extent of Contamination:
Soil and groundwater were analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), metals, polychlorinated biphenyls (PCBs), pesticides, and polyfluoroalkyl substances (PFAS). Soil vapor was analyzed for VOCs.

Soil - Remedial actions conducted as interim remedial measures (IRMs) have removed isolated areas of soil with the highest concentration of trichloroethene (TCE) and metals (primarily lead). Removal of these areas has reduced potential source areas for contamination to other environmental media (e.g., groundwater) and accommodate for construction of the site-wide remedy. The primary contaminants of concern detected in remaining soil include VOCs, SVOCs, and metals. The contaminants appear to be associated with the historic fill material present over much of the site. However, within the fill layer, contamination is most prevalent on the northern and eastern portions of the 16 Emma Street parcel (i.e., contamination is not ubiquitous over the site or within the fill). Sampling data indicates the possibility of fill with lower concentrations of VOCs extending off-site onto the rail road right-of-way adjacent to the northeast portion of 16 Emma Street. The rail line operating within the right-of-way is active with no foreseeable future

change in use. Continued rail road industrial use is substantiated by easements and local zoning. The rail road property is separated from the site by the newly constructed eight-foot high security fence. Native soil underlying the fill at the site does not indicate presence of contamination.

The primary contaminants of concern in remaining soil are listed here and compared to the appropriate and respective soil cleanup objectives (SCOs); that is, protection of groundwater SCOs (PGWSCOs) for VOCs that were also detected in groundwater above standards, and restricted residential SCOs (RRSCOs) for other VOCs, SVOCs, metals and PCBs.

In surface soils from the 0 to 2-inch depth interval, VOCs were not detected in the samples collected. SVOCs in surface soil that are considered the primary contaminants of concern are benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, chrysene, and indeno(1,2,3-cd)pyrene with maximum concentrations of 26 parts per million (ppm), 24 ppm, 32 ppm, 24 ppm, and 15 ppm, respectively. The RRSCOs for these are: 1 ppm for benzo(a)anthracene, benzo(a)pyrene, and benzo(b)fluoranthene, 3.9 ppm for chrysene, and 0.5 ppm for indeno(1,2,3-cd)pyrene. Maximum concentrations for the SVOCs all occurred at the same sample location in the northwest portion of 16 Emma Street; concentrations at all other sampling locations were nearly one order of magnitude lower. Metals in surface soil considered the primary contaminants of concern are cadmium, copper, and mercury with maximum concentrations of 51.8 ppm, 2910 ppm, and 4.41 ppm, respectively. Other metals were detected at concentrations above RRSCOs, although at much lower frequency or at lower concentrations. In remaining surface soil, PCBs were detected at two surface sample locations, with a maximum concentration of 5.7 ppm; the RRSCO is 1 ppm for PCBs.

VOCs in subsurface soil considered the primary contaminants of concern include cis 1,2 DCE, tetrachloroethene (PCE), and TCE with maximum concentrations of 3.5 ppm, 260 ppm and 670 ppm, respectively. PGWSCOs are 0.25 ppm for cis 1,2 DCE, 1.3 ppm for PCE, and 0.47 ppm for TCE. For the VOCs, only TCE was detected in soil at concentrations higher than the RRSCO. In a few subsurface soil samples, 1,4-dioxane and vinyl chloride were detected at concentrations above their respective RRSCOs. SVOCs in subsurface soil considered the primary contaminants of concern include benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, chrysene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene with maximum concentrations of 16 ppm, 14 ppm, 18 ppm, 13 ppm, 2.2 ppm, and 8.6 ppm, respectively. The RRSCO is 0.33 ppm for dibenzo(a,h)anthracene. Metals include cadmium, copper, and lead, with maximum concentrations of 87 ppm, 7,210 ppm, and 645 ppm, respectively. The RRSCO is 400 ppm for lead.

Groundwater – The primary contaminants of concern in groundwater include VOCs and metals. VOCs, including PCE, TCE and cis 1,2-DCE, were detected above groundwater standards in on-site groundwater underneath the 16 Emma Street parcel. TCE was detected at lower concentrations across the parcel, with an area of higher concentrations in the eastern portion of the parcel. Cis 1,2 DCE is a breakdown product of TCE and was detected at locations on the site where the TCE concentration is greater than approximately 50 ppb. TCE is present in groundwater above the groundwater standard at wells near the property boundary in the direction of groundwater flow, indicating the potential for TCE to migrate to off-site areas. The presence of cis 1,2 DCE is an indication of apparent natural degradation. The maximum concentrations of

TCE and cis 1,2 DCE were 660 ppb and 98 ppb, respectively at a monitoring well adjacent to the former wastewater treatment tank area. PCE was also detected across most of the 16 Emma Street parcel with a maximum concentration of 16 ppb. PCE was not detected in the eastern most portions of the 16 Emma Street parcel. Metals were detected above groundwater standards at one well in the northeast portion of the 16 Emma Street parcel. Metals of concern include hexavalent chromium and total chromium with maximum concentrations of 89 ppb and 111 ppb, respectively. The groundwater standard is 50 ppb for hexavalent and total chromium.

Soil Vapor - VOCs were detected in sub-slab vapor and indoor air samples collected within the annex portion of the main on-site building. The primary contaminant of concern in sub-slab vapor and indoor air is TCE, with a maximum concentration of 2,100 micrograms per cubic meter (µg/m3) in sub-slab vapor and 36 (µg/m3) in the indoor air. PCE was also detected in sub-slab vapor and indoor air, although at lower frequency of occurrence and at lower concentrations. Based on these results indicating impacts to the indoor air as a result of soil vapor intrusion, mitigation was recommended, and a sub-slab depressurization system has been installed in the annex portion of the building to prevent further impacts to indoor air as a result of soil vapor intrusion. The mechanical ventilation system installed as a requirement for the basement parking garage is also acceptable as a vapor mitigation system and prevents impacts to indoor air of the building's main structure as a result of soil vapor intrusion. Based on environmental sampling at the site, the potential for soil vapor intrusion to impact indoor air of off-site buildings needs further evaluation.

6.4: Summary of Human Exposure Pathways

This human exposure assessment identifies ways in which people may be exposed to site-related contaminants. Chemicals can enter the body through three major pathways (breathing, touching or swallowing). This is referred to as *exposure.*

The site is made up of two parcels. 9 Emma Street is an open parking lot and is not fenced. 16 Emma Street is partially fenced, has a main large building, with an attached annex building and smaller vacant outbuildings on the site. Outside the main building footprint, there is a 2-foot clean material cover on landscaped areas along with new pavement and sidewalks so contact with contaminated soil or groundwater is unlikely unless persons dig below the surface material. Contaminated groundwater at the site is not used for drinking or other purposes and the site is served by a public water supply that obtains water from a different source not affected by this contamination. Volatile organic compounds in the groundwater may move into the soil vapor (air spaces within the soil), which in turn may move into overlying buildings and affect the indoor air quality. This process, which is similar to the movement of radon gas from the subsurface into the indoor air of buildings, is referred to as soil vapor intrusion. On-site soil vapor intrusion is a potential exposure concern for occupants of the main or Annex buildings. Sampling indicates that there is also a potential soil vapor intrusion concern for off-site buildings.

6.5: Summary of the Remediation Objectives

The objectives for the remedial program have been established through the remedy selection process stated in 6 NYCRR Part 375. The goal for the remedial program is to restore the site to pre-disposal conditions to the extent feasible. At a minimum, the remedy shall eliminate or mitigate all significant threats to public health and the environment presented by the contamination identified at the site through the proper application of scientific and engineering principles.

The remedial action objectives for this site are:

Groundwater

RAOs for Public Health Protection

- Prevent ingestion of groundwater with contaminant levels exceeding drinking water standards.
- Prevent contact with, or inhalation of volatiles, from contaminated groundwater.

RAOs for Environmental Protection

- Restore ground water aquifer to pre-disposal/pre-release conditions, to the extent practicable.

Soil

RAOs for Public Health Protection

- Prevent ingestion/direct contact with contaminated soil.
- Prevent inhalation of or exposure from contaminants volatilizing from contaminants in soil.

RAOs for Environmental Protection

- Prevent migration of contaminants that would result in groundwater or surface water contamination.

Soil Vapor

RAOs for Public Health Protection

- Mitigate impacts to public health resulting from existing, or the potential for, soil vapor intrusion into buildings at a site.

SECTION 7: ELEMENTS OF THE SELECTED REMEDY

The alternatives developed for the site and the evaluation of the remedial criteria are presented in the Alternatives Analysis. The remedy is selected pursuant to the remedy selection criteria set forth in DER-10, Technical Guidance for Site Investigation and Remediation and 6 NYCRR Part 375. The selected remedy accounts for remedial actions already performed as IRMs.

The selected remedy is a Track 4: Restricted use with site-specific soil cleanup objectives remedy.

The selected remedy is referred to as the Cover System and Vapor Mitigation remedy.

The elements of the selected remedy, as shown in Figure 2, are as follows:

1. Remedial Design

A remedial design program will be implemented to provide the details necessary for the construction, operation, optimization, maintenance, and monitoring of the remedial program. Green remediation principles and techniques will be implemented to the extent feasible in the design, implementation, and site management of the remedy as per DER-31. The major green remediation components are as follows:

- Considering the environmental impacts of treatment technologies and remedy stewardship over the long term;
- Reducing direct and indirect greenhouse gases and other emissions;
- Increasing energy efficiency and minimizing use of non-renewable energy;
- Conserving and efficiently managing resources and materials;
- Reducing waste, increasing recycling and increasing reuse of materials which would otherwise be considered a waste;
- Maximizing habitat value and creating habitat when possible;
- Fostering green and healthy communities and working landscapes which balance ecological, economic and social goals;
- Integrating the remedy with the end use where possible and encouraging green and sustainable re-development; and
- Additionally, to incorporate green remediation principles and techniques to the extent feasible in the future development at this site, any future on-site buildings will include, at a minimum, a 20-mil vapor barrier/waterproofing membrane on the foundation to improve energy efficiency as an element of construction.

2. Excavation

All soils which exceed the restricted residential soil cleanup objectives (SCOs) and can't be beneficially reused beneath the cover system described in remedy element 4 will be taken off-site for proper disposal in order to implement the remedy.

3. Backfill

On-site soil may be used below the cover system described in remedy element 4 to establish the designed grades at the site. If additional backfill is needed to establish design grades, clean fill meeting the requirements of 6 NYCRR Part 375-6.7(d) will be brought in to replace the excavated soil and establish the designed grades at the site. Portions of the site will be re-graded to accommodate installation of a cover system.

4. Cover System

A site cover will be required to allow for restricted residential use of the site in areas where the upper two feet of exposed surface soil will exceed the restricted residential SCOs. Where a soil cover is to be used it will be a minimum of two feet of soil placed over a demarcation layer, with the upper six inches of soil of sufficient quality to maintain a vegetative cover. Soil cover material, including any fill material brought to the site, will meet the SCOs for cover material for the use of the site as set forth in 6 NYCRR Part 375-6.7(d). Substitution of other materials and components may be allowed where such components already exist or are a component of the tangible property to be placed as part of site redevelopment. Such components may include, but

are not necessarily limited to: pavement, concrete, paved surface parking areas, sidewalks, building foundations and building slabs.

5. Vapor Mitigation

Any on-site buildings will be required to have a sub-slab depressurization system, or a similarly engineered system, to prevent the migration of vapors into the building from contaminated soil and groundwater.

6. Institutional Control

Imposition of an institutional control in the form of an environmental easement for the controlled property which will:

- require the remedial party or site owner to complete and submit to the Department a periodic certification of institutional and engineering controls in accordance with Part 375-1.8 (h)(3);
- allow the use and development of the controlled property for restricted residential use as defined by Part 375-1.8(g), although land use is subject to local zoning laws;
- restrict the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by the NYSDOH or County DOH; and
- require compliance with the Department approved Site Management Plan.

7. Site Management Plan

A Site Management Plan is required, which includes the following:

a. an Institutional and Engineering Control Plan that identifies all use restrictions and engineering controls for the site and details the steps and media-specific requirements necessary to ensure the following institutional and/or engineering controls remain in place and effective:

   Institutional Controls: The Environmental Easement discussed in Paragraph 6 above.

   Engineering Controls: The Cover System discussed in Paragraph 4 and the Vapor Mitigation discussed in Paragraph 5 above.

   This plan includes, but may not be limited to:

   - an Excavation Plan which details the provisions for management of future excavations in areas of remaining contamination;
   - descriptions of the provisions of the environmental easement including any land use and groundwater use restrictions;
   - a provision that should a building foundation or building slab be removed in the future, a cover system consistent with that described in Paragraph 2 above will be placed in any areas where the upper two feet of exposed surface soil exceed the applicable soil cleanup objectives (SCOs)
   - provisions for the management and inspection of the identified engineering controls;
   - maintaining site access controls and Department notification; and
   - the steps necessary for the periodic reviews and certification of the institutional and/or engineering controls.

b. a Monitoring Plan to assess the performance and effectiveness of the remedy. The plan

includes, but may not be limited to:

- monitoring of groundwater to assess the performance and effectiveness of the remedy; and
- a schedule of monitoring and frequency of submittals to the Department.

c. an Operation and Maintenance (O&M) Plan to ensure continued operation, maintenance, optimization, monitoring, inspection, and reporting of any mechanical or physical components of the remedy. The plan includes, but is not limited to:

- procedures for operating and maintaining the remedy;
- compliance monitoring of treatment systems to ensure proper O&M as well as providing the data for any necessary permit or permit equivalent reporting;
- maintaining site access controls and Department notification; and
- providing the Department access to the site and O&M records.

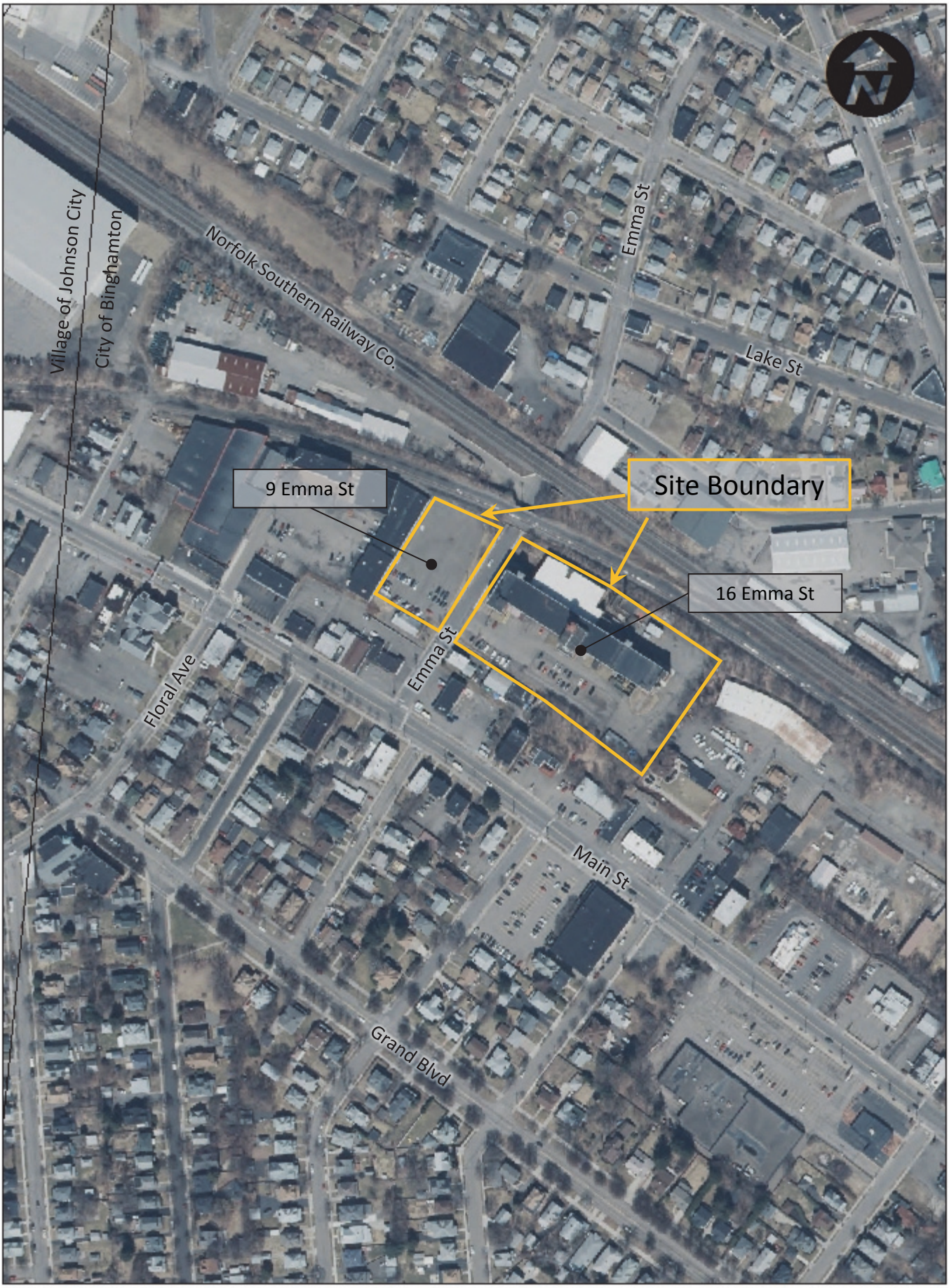

Figure 1 – Site Location

Former ANSCO Camera Factory

Site Number: C704059

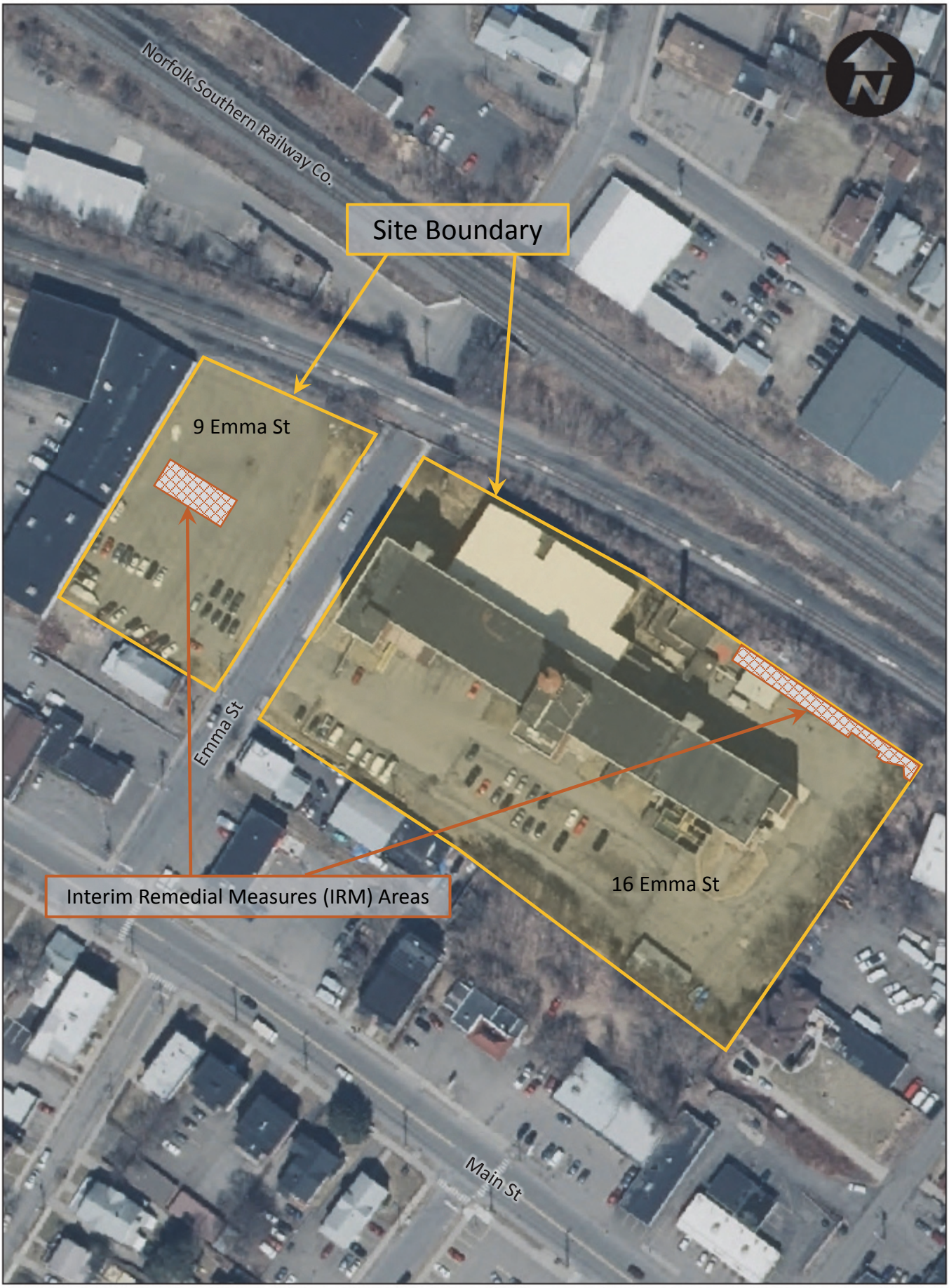

Figure 2 – IRM Areas
Former ANSCO Camera Factory
Site Number: C704059

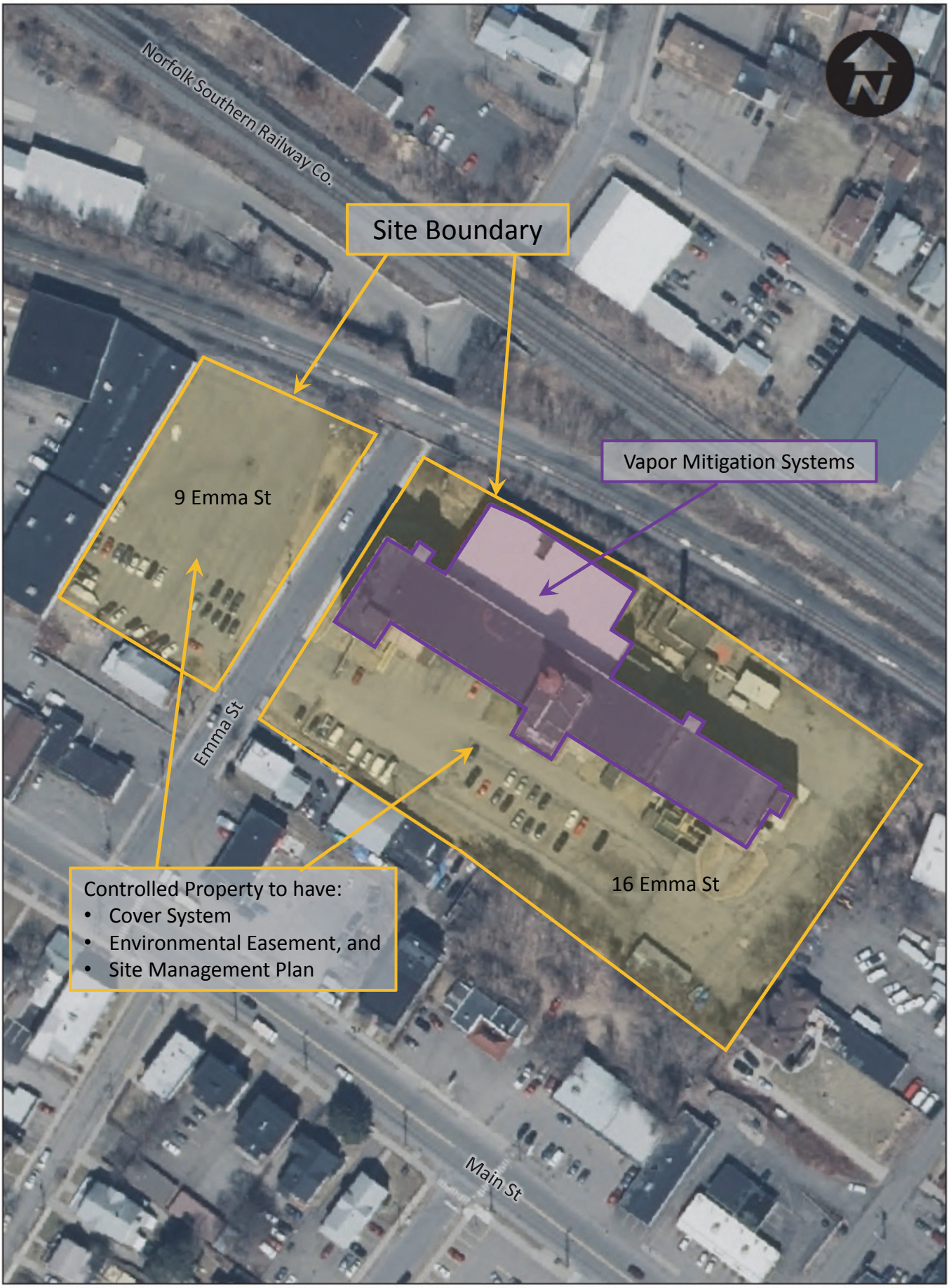

Figure 3 – Remedial Elements

Former ANSCO Camera Factory
Site Number: C704059