DECISION DOCUMENT

Moyer Carriage Lofts
Brownfield Cleanup Program
Syracuse, Onondaga County
Site No. C734151
December 2021

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

DECLARATION STATEMENT - DECISION DOCUMENT

Moyer Carriage Lofts
Brownfield Cleanup Program
Syracuse, Onondaga County
Site No. C734151
December 2021

Statement of Purpose and Basis

This document presents the remedy for the Moyer Carriage Lofts 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 Moyer Carriage Lofts 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

Excavation and off-site disposal of contaminant source areas, including soils which exceed the protection of groundwater soil cleanup objectives (PGWSCOs), as defined by 6 NYCRR Part 375-6.8 for those contaminants found in site groundwater above standards. Figure 3 shows the excavations areas.

Soils in the upper two feet which exceed the Restricted Residential Soil Cleanup Objectives (RRSCOs) will be excavated, as needed for grading purposes prior to placement of the cover system and transported off-site for disposal.

Excavation and removal of any underground storage tanks (USTs), fuel dispensers, underground piping or other structures, and associated contaminated soils, if any.

3. Backfill

On-site soil which does not exceed the above excavation criteria may be used below the cover system described in remedy element 4 to backfill the excavation and establish the designed grades at the site. Clean fill meeting the requirements of 6 NYCRR Part 375-6.7(d) will be brought in to complete the backfilling of the excavation and establish the designed grades at the site.

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 exceed the applicable 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 layer. 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. In-situ Chemical Oxidation with Groundwater Monitoring and Monitored Natural Attenuation

Groundwater contamination will be addressed with in-situ treatment (e.g., in-situ chemical oxidation [ISCO]) in the vicinity of monitoring well RI-MW-2 followed by Monitored Natural Attenuation (MNA). Groundwater will be monitored for site related contamination and for MNA indicators which will provide an understanding of the biological activity breaking down the contamination. Figure 5 shows the locations of the monitoring wells. Reports of the attenuation will be provided annually as part of the Periodic Review Report. During site monitoring, additional active remediation will be proposed if it appears that natural processes alone will not adequately

address the remaining contamination. The contingency remedial action will depend on the information collected, but it is currently anticipated that in-situ chemical oxidation (ISCO) or reductive dechlorination would be the expected contingency remedial action. If it is determined that a contingency remedial action is needed, an evaluation will be performed to determine the type of action that will be employed.

6. Vapor Mitigation

Any on-site buildings will be required to have a sub-slab depressurization system, or other acceptable measures, to mitigate the migration of vapors into the building from the subsurface.

7. Institutional Control

Imposition of an institutional control in the form of an environmental easement and a Site Management Plan, as described below, will be required. The remedy will achieve a Track 4 restricted residential, cleanup at a minimum.

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.

8. 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 7 above.

Engineering Controls: The cover system, groundwater monitoring program, contingency in-situ treatment of groundwater, and vapor mitigation system discussed in Paragraphs 4, 5 and 6 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;
- a provision for further investigation and remediation should large scale redevelopment occur, if any of the existing structures are demolished, or if the

subsurface is otherwise made accessible. The nature and extent of contamination in areas where access was previously limited or unavailable will be immediately and thoroughly investigated pursuant to a plan approved by the Department. Based on the investigation results and the Department determination of the need for a remedy, a Remedial Action Work Plan (RAWP) will be developed for the final remedy for the site, including removal and/or treatment of any source areas to the extent feasible. Citizen Participation Plan (CPP) activities will continue through this process. Any necessary remediation will be completed prior to, or in association with, redevelopment. This includes the portions of the existing site buildings that will be incorporated into the redevelopment building footprint;

- 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 item 4 above will be placed in any areas where the upper two feet of exposed surface soil exceed the applicable 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 and soil vapor to assess the performance and effectiveness of the remedy;
- a schedule of monitoring and frequency of submittals to the Department;
- monitoring for vapor intrusion for any buildings on the site, as may be required by the Institutional and Engineering Control Plan discussed above.

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

- procedures for operating and maintaining the system(s); and
- compliance inspection of the system(s) to ensure proper O&M as well as providing the data for any necessary reporting.

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.

12/17/2021
Date

Dave Harrington
David Harrington, Director
Remedial Bureau D

DECISION DOCUMENT

Moyer Carriage Lofts
Syracuse, Onondaga County
Site No. C734151
December 2021

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, where a contaminant is present at levels exceeding the soil cleanup objectives or other health-based or environmental standards, criteria or guidance, based on the reasonably anticipated use of the property.

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 comments 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://www.dec.ny.gov/data/DecDocs/C734151

White Branch Library
763 Butternut Street
Syracuse, NY 13208
Phone: 315-435-3519

Housing Visions Corporate Office
1201 East Fayette Street, Suite 26
Syracuse, NY 13210
Phone: 315-472-3820

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 site is located at 1714 North Salina Street in the city of Syracuse, Onondaga County. The site is located within the Hi-Lo Brownfield Opportunity Area (BOA). The site is bounded to the north by Park Street, to the south by North Salina Street, east by Wolf Street, and west by Exchange Place. Properties surrounding the site are commercial and industrial facilities. Figure 2 shows the site location.

SITE FEATURES:

The property contains five vacant buildings. The site includes five brick and block buildings which account for approximately 204,964 square feet of gross building space. The buildings were constructed from sometime before 1892 until 1956. The property is approximately 2 acres in size, which includes a parking lot along the northwestern side of the site buildings. The buildings are currently vacant and in distressed condition.

The site is located at approximately 400 feet above mean sea level (msl) and slopes gently to the west towards Onondaga Lake, which lies approximately one-half mile to the west of the site. The exterior of the subject property consists of asphalt parking and some gravel areas.

CURRENT ZONING AND LAND USE:

The site is currently zoned for Industrial Manufacturing and Processing. The properties surrounding the site are zoned for a mix of commercial or industrial uses.

PAST USE OF THE SITE:

The site was originally developed for industrial purposes prior to 1892. The site is presently vacant. Prior site operations included carriage and vehicle manufacturing, tool manufacturing, machining,

plating as well as parts and equipment cleaning.

SITE GEOLOGY AND HYDROGEOLOGY:

The site contains historic fill material (HFM) across a significant portion of the site from grade to approximately four to five feet below ground surface (bgs) generally, with at least one location to nine feet bgs. The HFM contains gravel, black sand, brick, ash, and coal. Native soil is located below the HFM and consists of dense dry silty clay. Depth to groundwater ranges from 35 to 38 feet bgs.

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 Department will seek to identify any parties, other than the Volunteer, known or suspected to be responsible for contamination at or emanating from the site, referred to as Potentially Responsible Parties (PRPs). The Department will seek to bring an enforcement action against the PRPs. If an enforcement action cannot be brought or does not result in the initiation of a remedial program by any PRPs, the Department will evaluate the off-site contamination for action under the State Superfund. The PRPs are subject to legal actions by the State for recovery of all response costs the State incurs or has incurred.

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(s) 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
- soil vapor
- 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 is/are:

lead	benzo(a)pyrene
trichloroethene (TCE)	benzo(b)fluoranthene
tetrachloroethene (PCE)	benzo(k)fluoranthene
mercury	chrysene
chromium	indeno(1,2,3-cd)pyrene
benzo(a)anthracene	cis-1,2-dichloroethene

The contaminants of concern exceed the applicable SCGs for:

- groundwater
- soil
- soil vapor intrusion

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.

There were no IRMs performed at this site during the RI.

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, groundwater and soil vapor samples were collected as part of the Remedial Investigation. Soil and groundwater samples were analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), metals, polychlorinated biphenyls (PCBs), per- and polyfluoroalkyl substances (PFAS), and pesticides. Soil vapor samples were analyzed for VOCs. Based on the investigations conducted to date, the primary contaminants of concern include metals (e.g. lead), Volatile Organic Compounds (VOCs) (e.g., tetrachloroethylene [PCE] and trichloroethene [TCE]) and some Semi Volatile Organic Compounds (SVOCs) (e.g., benzo(a)anthracene).

Surface Soil - Contaminants in the surface soil were detected above the Part 375 Restricted Residential Use Soil Cleanup Objective (RRUSCOs) for benzo(a)anthracene (at concentrations up to 22 ppm, RRUSCO of 1 ppm, Protection of Groundwater SCO (PGWSCO) of 1 ppm). Surface soil data does not indicate potential for off-site impacts.

Subsurface Soil - Contaminants in subsurface soil detected above the RRUSCOs and/or PGWSCOs include lead (at concentrations up to 640 parts per million [ppm], RRUSCO of 400 ppm,), PCE (at concentrations up to 110 ppm, PGWSCO of 1.3 ppm), TCE (at concentrations up to 19 ppm, PGWSCO of 0.47 ppm), and benzo(a)anthracene (at concentrations up to 44 ppm, RRUSCO of 1 ppm, PGWSCO of 1 ppm). Subsurface soil data does not indicate potential for off-site impacts.

Groundwater - Contaminants in the groundwater that exceeded groundwater quality standards included PCE (up to 1000 parts per billion [ppb], Maximum Contaminant Level [MCL] of 5 ppb), TCE (up to 66 ppb, MCL of 5 ppb), and benzo(a)anthracene (up to.77 ppb, MCL of .002 ppb). Groundwater samples were collected for laboratory analysis for 21 PFAS compounds. Perfluorooctanoic acid (PFOA) concentrations were detected (up to 7.91 parts per trillion [ppt], MCL of 10 ppt). Perfluorooctanesulfonic acid (PFOS) concentrations were detected (up to 8.48 ppt, MCL of 10 ppt). Groundwater data does indicate potential for off-site impacts.

Soil Vapor - Contaminants in the soil vapor that were detected included PCE (up to 210 ug/m3), and TCE (up to 130 ug/m3). Contaminants in the sub slab soil vapor that were detected include TCE (up to 56 ug/m3). Soil vapor data does indicate potential for off-site impacts.

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.*

Access is restricted by a fence and direct contact with contaminants in the soil is unlikely because the majority of the site is covered with buildings and pavement. People are not drinking the contaminated groundwater because the area is served by a public water supply that is not affected by this contamination. Volatile organic compounds in soil vapor (air spaces within the soil) may move into structures 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 structures, is referred to as soil vapor intrusion. Because the site is vacant, inhalation of site contaminants in indoor air due to soil vapor intrusion does not represent a concern for the site in its current condition. However, environmental sampling indicates that soil vapor intrusion may present a concern for any on-site redevelopment and occupancy and for off-site structures.

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.
- Remove the source of ground or surface water contamination.

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

The selected remedy is referred to as the Excavation, Cover System, Groundwater Monitoring and Monitored Natural Attenuation, and Vapor Mitigation remedy.

The elements of the selected remedy, as shown in Figure 3 and 4, 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

Excavation and off-site disposal of contaminant source areas, including soils which exceed the protection of groundwater soil cleanup objectives (PGWSCOs), as defined by 6 NYCRR Part 375-6.8 for those contaminants found in site groundwater above standards. Figure 3 shows the excavations areas.

Soils in the upper two feet which exceed the Restricted Residential Soil Cleanup Objectives (RRSCOs) will be excavated, as needed for grading purposes prior to placement of the cover system and transported off-site for disposal.

Excavation and removal of any underground storage tanks (USTs), fuel dispensers, underground piping or other structures, and related contaminated soils if any, associated with a source of contamination.

3. Backfill

On-site soil which does not exceed the above excavation criteria may be used below the cover system described in remedy element 4 to backfill the excavation and establish the designed grades at the site. Clean fill meeting the requirements of 6 NYCRR Part 375-6.7(d) will be brought in to complete the backfilling of the excavation and establish the designed grades at the site.

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 applicable 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 layer. 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. Figure 4 shows the cover system.

5. In-situ Chemical Oxidation with Groundwater Monitoring and Monitored Natural Attenuation

Groundwater contamination will be addressed with in-situ treatment (e.g., in-situ chemical oxidation [ISCO]) in the vicinity of monitoring well RI-MW-2 followed by Monitored Natural Attenuation (MNA). Groundwater will be monitored for site related contamination and for MNA indicators which will provide an understanding of the biological activity breaking down the contamination. Figure 5 shows the locations of the monitoring wells. Reports of the attenuation will be provided annually as part of the Periodic Review Report. During site monitoring, additional active remediation will be proposed if it appears that natural processes alone will not adequately address the remaining contamination. The contingency remedial action will depend on the information collected, but it is currently anticipated that in-situ chemical oxidation (ISCO) or reductive dechlorination would be the expected contingency remedial action. If it is determined that a contingency remedial action is needed, an evaluation will be performed to determine the type of action that will be employed.

6. Vapor Mitigation

Any on-site buildings will be required to have a sub-slab depressurization system, or other acceptable measures, to mitigate the migration of vapors into the buildings from soil and/or groundwater.

7. Institutional Controls

Imposition of an institutional control in the form of an environmental easement and a Site Management Plan, as described below, will be required. The remedy will achieve a Track 4 restricted residential, cleanup at a minimum.

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.

8. 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 7 above.

Engineering Controls: The cover system, groundwater monitoring program and vapor mitigation system(s) discussed in Paragraphs, 4, 5 and 6 above.

This plan includes, but may not be limited to:

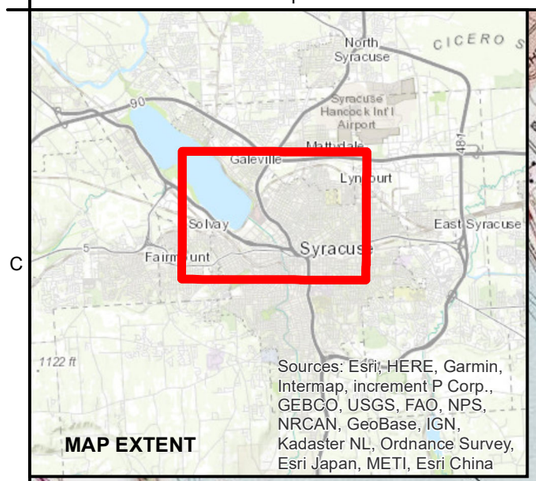
- an Excavation Plan which details the provisions for management of future excavations in areas of remaining contamination;
- a provision for further investigation and remediation should large scale redevelopment occur, if any of the existing structures are demolished, or if the subsurface is otherwise made accessible. The nature and extent of contamination in areas where access was previously limited or unavailable will be immediately and thoroughly investigated pursuant to a plan approved by the Department. Based on the investigation results and the Department determination of the need for a remedy, a Remedial Action Work Plan (RAWP) will be developed for the final remedy for the site, including removal and/or treatment of any source areas to the extent feasible. Citizen Participation Plan (CPP) activities will continue through this process. Any necessary remediation will be completed prior to, or in association with, redevelopment. This includes the portions of the existing site buildings that will be incorporated into the redevelopment building footprint;
- 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 item 4 above will be placed in any areas where the upper two of exposed surface soil exceed the applicable 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 and soil vapor to assess the performance and effectiveness of the remedy;
- a schedule of monitoring and frequency of submittals to the Department;
- monitoring for vapor intrusion for any buildings on the site, as may be required by the Institutional and Engineering Control Plan discussed above.

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

- procedures for operating and maintaining the system(s); and
- compliance inspection of the system(s) to ensure proper O&M as well as providing the data for any necessary reporting.



Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China

Site

NAD 1983 CORS96 StatePlane New York Central FIPS 3102 Ft US
Projection: Transverse Mercator
Datum: NAD 1983 CORS96
False Easting: 820,208.3333
False Northing: 0.0000
Central Meridian: -76.5833
Scale Factor: 0.9999
Latitude Of Origin: 40.0000
Units: Foot US

Document Path: F:\Project\W96 - Housing Visions ADHV Redevelopment\GIS-DO-NOT-_MOVE\Projects\RIR\Figure_1_Site Location Map.mxd

C&S COMPANIES®
C&S Engineers, Inc.
499 Col. Eileen Collins Blvd.
Syracuse, New York 13212
Phone: 315-455-2000
Fax: 315-455-9667
www.cscos.com

N

0 2,000 Feet

1 inch = 2,000 feet

Moyer Carriage Lofts
1714 North Salina Street
Syracuse, Onondaga County, New York

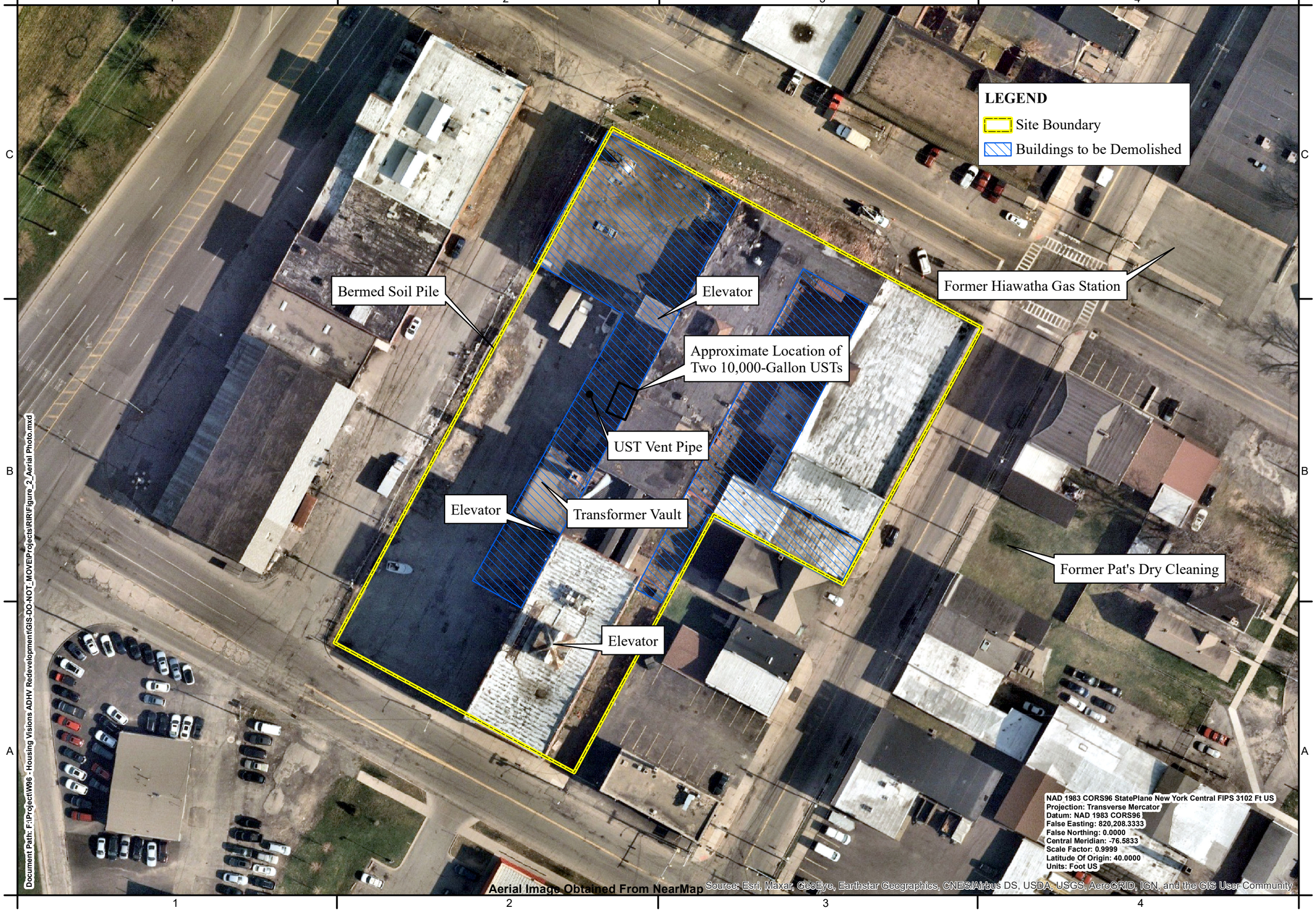
Brownfield Cleanup Program
Remedial Investigation

PROJECT NO:	W96.001.004
DATE:	June 2021
SCALE:	AS SHOWN
DRAWN BY:	JTB
DESIGNED BY:	JTB
CHECKED BY:	MLW

Modified: 6/1/2021 @ 12:30:22 PM

SITE LOCATION

Figure 1



C&S COMPANIES®
C&S Engineers, Inc.
499 Col. Eileen Collins Blvd.
Syracuse, New York 13212
Phone: 315-455-2000
Fax: 315-455-9667
www.cscos.com

N

0 60 Feet
1 inch = 60 feet

Moyer Carriage Lofts
1714 North Salina Street
Syracuse, Onondaga County, New York
Brownfield Cleanup Program
Remedial Investigation

PROJECT NO:	W96.001.004
DATE:	June 2021
SCALE:	AS SHOWN
DRAWN BY:	JTB
DESIGNED BY:	JTB
CHECKED BY:	MLW

Modified: 6/21/2021 @ 8:59:42 AM

SITE MAP

Figure 2

LEGEND

Site Boundary

Soil Removal Area

PCE / TCE SCOs

Unrestricted Use
Protection of Groundwater SCO = 1.3 / 0.47

Residential Use SCO= 5.5 / 10

Residential-Restricted Use SCO = 19 / 21

Commercial Use SCO = 150 / 200

Industrial Use SCO = 300 / 400

SAMPLE ID
(SAMPLE DEPTH) PCE / TCE CONCENTRATION
CONTAMINANT ABOVE
PROTECTION OF GROUNDWATER SCO

NOTES: Data in parts per million
Unrestricted Use SCOs and Protection of Groundwater SCOs are the same for TCE and PCE.

RI-SB-17
(0.5'-5') PCE - 0.0084 / TCE - 0.0012
(6'-8') PCE - 0.0018 / TCE - ND

RI-SB-16
(0.5'-4') PCE - 0.0048 / TCE - 0.00018
(6'-10') PCE - 0.0025 / TCE - ND

Soil removal area to 10' below grade

RI-SB-01
(8-9') PCE - 0.0015 / TCE - 0.00031
(9'-12') PCE - ND / TCE - ND

RI-SB-15A
(0-4') PCE - 0.026 / TCE - 0.0016
(4'-8') PCE - 0.068 / TCE - 0.0021
(8'-11') PCE - 0.095 / TCE - 0.0037

RI-SB-15C
(0-4') PCE - 12 / TCE - 3.8
(4'-8') PCE - 0.058 / TCE - 0.005
(8'-10') PCE - 0.008 / TCE - 0.00072

RI-SB-15
(0.5'-6') PCE - 110 / TCE - 0.82
(6'-8') PCE - 0.24 / TCE - 0.0028
(8'-9') PCE - 48 / TCE - 0.66

RI-SB-15E
(0-4') PCE - 12 / TCE - 3.5
(4'-7') PCE - 0.069 / TCE - 0.0062

Soil removal area to 4' below grade

RI-SB-15B
(0-4') PCE - 8.4 / TCE - 0.15
(4'-8') PCE - 0.064 / TCE - 0.0012
(8'-12') PCE - 0.0084 / TCE - 0.0097
(12'-15') PCE - 0.22 / TCE - 0.09

RI-SB-21
(6'-8') PCE - ND / TCE - ND

RI-SB-15D
(0-4') PCE - 0.0036 / TCE - 0.00036
(4'-8') PCE - 0.0061 / TCE - ND
(8'-9.5') PCE - 0.0016 / TCE - 0.0012

Soil removal area to 6' below grade

RI-SB-15F
(0-4') PCE - 12 / TCE - 1.4
(4'-8') PCE - 0.11 / TCE - 0.0075

RI-SB-15G
(0-4') PCE - 0.042 / TCE - 0.046
(4'-8') PCE - 0.016 / TCE - 0.011

Soil removal area to 16' below grade

RI-SB-22
(6'-9.5') PCE - ND / TCE - ND

RI-SB-02
(8-10') PCE - 0.067 / TCE - 0.0067
(10'-12') PCE - 0.026 / TCE - 0.0026

RI-SB-23
(3.5'-5') PCE - 6.1 / TCE - 19
(6'-8') PCE - 0.011 / TCE - 0.016

RI-SB-07
(15'-16') PCE - 2.2 / TCE - 0.0048

RI-SB-08
(0-4') PCE - 0.0096 / TCE - 0.0026
(8'-12') PCE - 0.048 / TCE - 0.0039

NAD 1983 CORS96 StatePlane New York Central FIPS 3102 Ft US
Projection: Transverse Mercator
Datum: NAD 1983 CORS96
False Easting: 820,208.3333
False Northing: 0.0000
Central Meridian: -76.5833
Scale Factor: 0.9999
Latitude Of Origin: 40.0000
Units: Foot US

Aerial Image Obtained From NearMap

Document Path: F:\Project\W96 - Housing Visions ADHV Redevelopment\GIS-DO-NOT_MOVE\Projects\AA-RAWP\Figure_7_PCE_Subsurface_Sample_Results.mxd

C&S COMPANIES®
C&S Engineers, Inc.
499 Col. Eileen Collins Blvd.
Syracuse, New York 13212
Phone: 315-455-2000
Fax: 315-455-9667
www.cscos.com

N

0 20 Feet
1 inch = 20 feet

Moyer Carriage Lofts
1714 North Salina Street
Syracuse, Onondaga County, New York

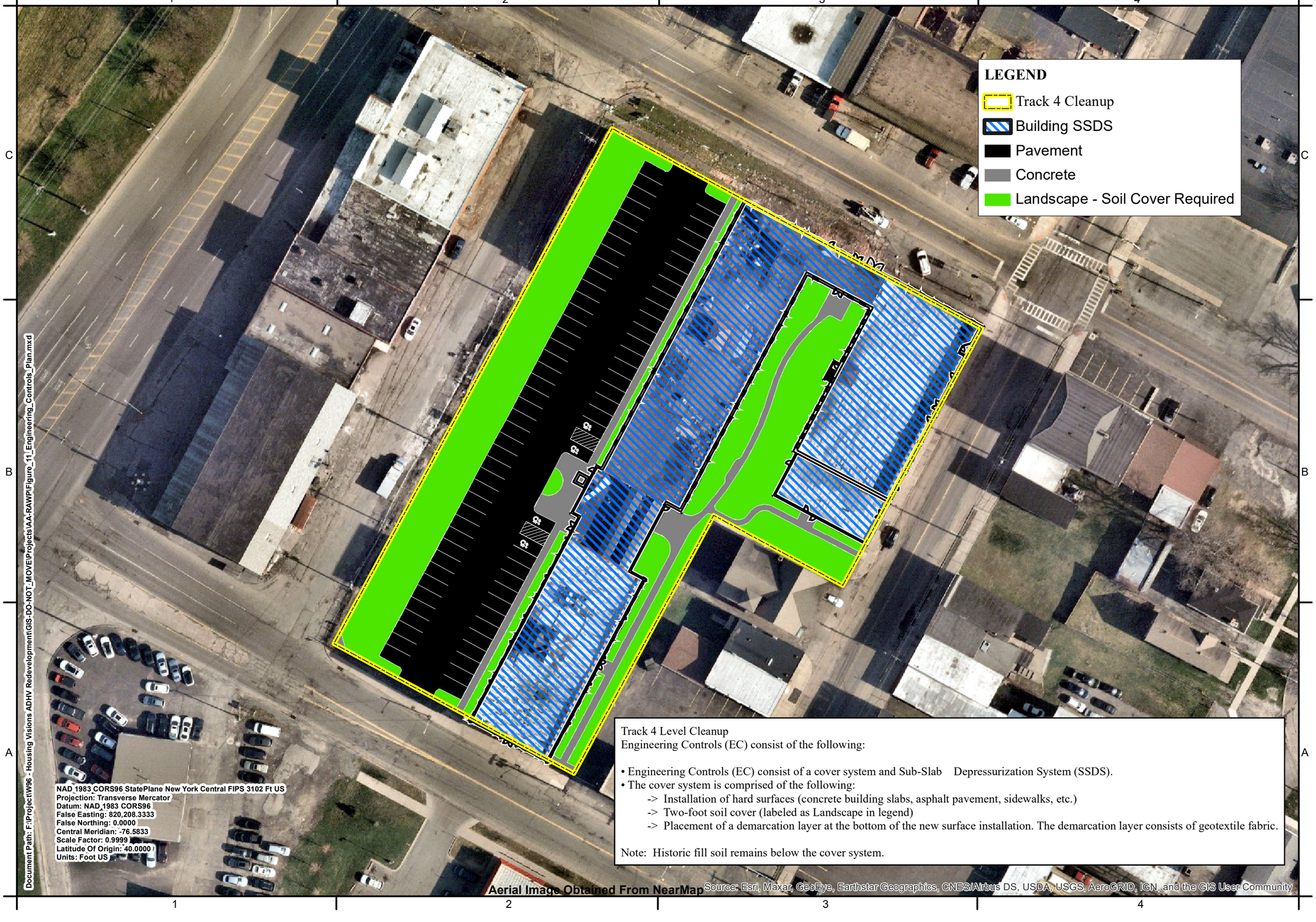
Alternatives Analysis / Remedial Action Work Plan

PROJECT NO:	W96.001.002
DATE:	December 2021
SCALE:	AS SHOWN
DRAWN BY:	JTB
DESIGNED BY:	JTB
CHECKED BY:	MLW

Modified: 12/1/2021 @ 1:56:57 PM

PCE SUBSURFACE SAMPLE RESULTS

Figure 3



Track 4 Level Cleanup
Engineering Controls (EC) consist of the following:

- Engineering Controls (EC) consist of a cover system and Sub-Slab Depressurization System (SSDS).
- The cover system is comprised of the following:
  - -> Installation of hard surfaces (concrete building slabs, asphalt pavement, sidewalks, etc.)
  - -> Two-foot soil cover (labeled as Landscape in legend)
  - -> Placement of a demarcation layer at the bottom of the new surface installation. The demarcation layer consists of geotextile fabric.

Note: Historic fill soil remains below the cover system.

C&S COMPANIES®
C&S Engineers, Inc.
499 Col. Eileen Collins Blvd.
Syracuse, New York 13212
Phone: 315-455-2000
Fax: 315-455-9667
www.cscos.com

N

0 60 Feet
1 inch = 60 feet

Moyer Carriage Lofts
1714 North Salina Street
Syracuse, Onondaga County, New York

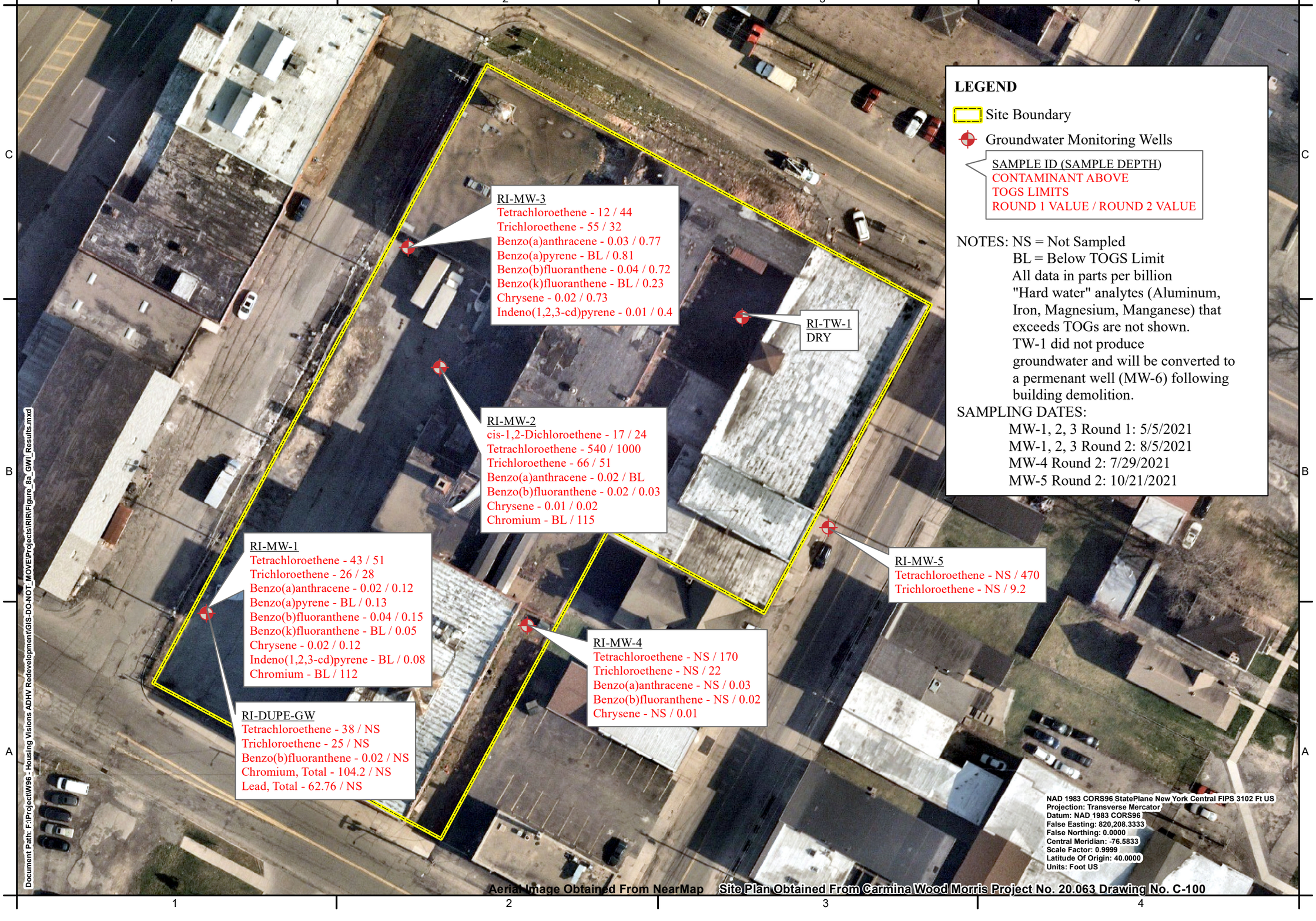
Alternatives Analysis / Remedial Action Work Plan

PROJECT NO:	W96.001.004
DATE:	August 2021
SCALE:	AS SHOWN
DRAWN BY:	JTB
DESIGNED BY:	JTB
CHECKED BY:	MLW

Modified: 8/11/2021 @ 10:56:06 AM

ENGINEERING CONTROLS

Figure 4



LEGEND

- Site Boundary
- Groundwater Monitoring Wells
  - SAMPLE ID (SAMPLE DEPTH)
  - CONTAMINANT ABOVE
  - TOGS LIMITS
  - ROUND 1 VALUE / ROUND 2 VALUE

NOTES: NS = Not Sampled
BL = Below TOGS Limit
All data in parts per billion
"Hard water" analytes (Aluminum, Iron, Magnesium, Manganese) that exceeds TOGs are not shown.
TW-1 did not produce groundwater and will be converted to a permenant well (MW-6) following building demolition.

SAMPLING DATES:
MW-1, 2, 3 Round 1: 5/5/2021
MW-1, 2, 3 Round 2: 8/5/2021
MW-4 Round 2: 7/29/2021
MW-5 Round 2: 10/21/2021

C&S COMPANIES®
C&S Engineers, Inc.
499 Col. Eileen Collins Blvd.
Syracuse, New York 13212
Phone: 315-455-2000
Fax: 315-455-9667
www.cscos.com

N

0 50 Feet
1 inch = 50 feet

Moyer Carriage Lofts
1714 North Salina Street
Syracuse, Onondaga County, New York
Brownfield Cleanup Program
Remedial Investigation Report

PROJECT NO:	W96.001.002
DATE:	November 2021
SCALE:	AS SHOWN
DRAWN BY:	JTB
DESIGNED BY:	JTB
CHECKED BY:	MLW

Modified: 11/30/2021 @ 4:27:27 PM

GROUNDWATER SAMPLING RESULTS

Figure 5

Document Path: F:\Project\W96 - Housing Visions ADHV Redevelopment\GIS-DO-NOT_MOVE\Projects\RIR\Figure_8a_GWL_Results.mxd