

DECISION DOCUMENT

RGE - West Station
Voluntary Cleanup Program
Rochester, Monroe County
Site No. V00593
February 2018



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

DECLARATION STATEMENT - DECISION DOCUMENT

RGE - West Station
Voluntary Cleanup Program
Rochester, Monroe County
Site No. V00593
February 2018

Statement of Purpose and Basis

This document presents the remedy for the RGE - West Station site, a voluntary cleanup site. The remedial program was chosen in accordance with the New York State Environmental Conservation Law and applicable guidance.

This decision is based on the Administrative Record of the New York State Department of Environmental Conservation (the Department) for the RGE - West Station site and the public's input to the proposed remedy presented by the Department.

Description of Selected Remedy

The elements of the remedy are as follows:

1. Remedial Design
- 2.

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; and
- Integrating the remedy with the end use where possible and encouraging green and sustainable re-development.

2. Excavation

Excavation and off-site disposal of contaminant source areas from the shoreline of the site (encompassing the soil between the river and the retaining wall, and from the river bank south of the retaining wall) including:

- grossly contaminated soil, as defined in 6 NYCRR Part 375-1.2(u);
- soil containing visual impacts including tar like material, purifier waste, or non-aqueous phase liquid;
- soil containing total SVOCs exceeding 500 ppm;
- soils that create a nuisance condition, as defined in Commissioner Policy CP-51 Section G.

Excavation and removal of any underground storage tanks (USTs), fuel dispensers, underground piping or other structures associated with a source of contamination. Approximately 11,300 cubic yards of contaminated soil will be removed from the site. The approximate depth of excavation will be between 6 and 15 feet (bedrock). Excavation will terminate at the depth where MGP source material is not observed. Clean fill meeting the requirements of 6 NYCRR Part 375-6.7(d) will be brought in to replace the excavated soil or complete the backfilling of the excavation and establish the designed grades at the site. Habitat restoration of the floodplain and stream consistent with bioengineering design principles and re-establishment of habitat function.

3. 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 soil cleanup objectives (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, cement, paved surface parking areas, sidewalks, building foundations and building slabs. The cover system within the bank and floodplain will consist solely of soil and will not include a demarcation layer, and shall be placed in accordance with Element 5 below.

4. Sediment Removal

Excavation and off-site disposal of near-shore, visually impacted sediment from the Genesee River (encompassing all sediment adjacent to the site). Sediment will be removed based on the following criteria:

- grossly contaminated soil, as defined in 6 NYCRR Part 375-1.2(u);
- sediment containing visual impacts including tar like material, purifier waste, or non-aqueous phase liquid;
- sediment with total PAH concentrations exceeding Class C criteria

Sediment will be accessed through the construction of a near-shore water diversion structure such

as temporary sheet piling or other means. Approximately 8,000 to 10,000 cubic yards of contaminated sediment will be removed from the site. The final extent of sediment excavation will be determined following a pre-design investigation. Excavation criteria will be confirmed based on visual inspection.

5. Restoration of Sediment Removal Area

Stream bed and bank bathymetry and topography will be restored with appropriate material. The stream bed, banks and floodplain will be restored in-kind to the extent possible using natural stream restoration design principles and with the goal of re-establishing habitat function. Bank and floodplain restoration will not supersede the current or extended barrier wall described in Element 6. If present, submerged aquatic vegetation in the remediation area will also be restored. The design will include a monitoring plan for areas disturbed by the remedy and all activities will be consistent with the requirements of 6 NYCRR Part 608.

6. Barrier Wall

The existing site retaining wall will be extended approximately 360 feet to the south to form a barrier wall to contain remaining on-site contamination. The southern terminus of the barrier wall will be keyed into the decommissioned house inlet structure. The barrier wall will be designed to prevent dense non-aqueous phase liquid (DNAPL) from seeping through the wall towards the river bank and Genesee River. The barrier wall will extend to bedrock. A pre-design investigation of the existing retaining wall will be conducted, and repairs will be made as necessary.

7. DNAPL Recovery

Installation and operation of DNAPL recovery wells along the upland side of the barrier wall to remove potentially mobile DNAPL from the subsurface. The number, depth, type and spacing of the recovery wells will be determined during the design phase of the remedy. DNAPL will be collected periodically from each well; however, if wells are determined by the Department to accumulate large quantities of DNAPL over extended time periods, they can be converted to automated collection.

8. Monitored Natural Attenuation

Groundwater contamination (remaining after active remediation) will be addressed with monitored natural attenuation (MNA). Groundwater will be monitored for site related contamination and also for MNA indicators which will provide an understanding of the (biological activity) breaking down the contamination. It is anticipated that contamination will attenuate over a 30-year time period. Reports of the attenuation will be provided at 5 year intervals, and active remediation will be proposed if it appears that natural processes alone will not address the contamination. The contingency remedial action will depend on the information collected, but it is currently anticipated that in-situ biological treatment would be the expected contingency remedial action.

9. Institutional Controls

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, commercial or industrial 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.

10. Site Management Plan

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

1. 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 8 above.

Engineering Controls: The soil cover discussed in Paragraph 3, the barrier wall discussed in Paragraph 5, and the DNAPL recovery system discussed in Paragraph 7.

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 should redevelopment occur to ensure no soil exceeding protection of groundwater concentrations will remain below storm water retention basin or infiltration structures.
- descriptions of the provisions of the environmental easement including any land use, and groundwater use restrictions;
- a provision for evaluation of the potential for soil vapor intrusion for any occupied buildings built in the future on the site, including provision for implementing actions recommended to address exposures related to soil vapor intrusion;
- a provision that should a building foundation or building slab be removed in the future, a cover system consistent with that described in Paragraph 3 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.

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

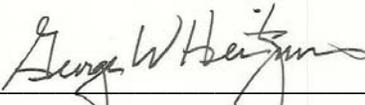
- monitoring of groundwater to assess the performance and effectiveness of the remedy;
 - a schedule of monitoring and frequency of submittals to the Department;
 - monitoring for vapor intrusion for any occupied existing or future buildings on the site, as may be required by the Institutional and Engineering Control Plan discussed above;
 - Monitoring of the barrier wall effectiveness in preventing contaminant release to the river; and
 - Monitoring of the restored river bank and river bed for erosion with repairs, as needed.
3. 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 (DNAPL recovery). 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.

February 20, 2018

Date



George Heitzman, Director
Remedial Bureau C

DECISION DOCUMENT

RGE - West Station
Rochester, Monroe County
Site No. V00593
February 2018

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 Voluntary Cleanup Program (VCP) is a voluntary program. The goal of the VCP is to enhance private sector cleanup of brownfields by enabling parties to remediate sites using private rather than public funds and to reduce the development pressures on "greenfields." 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:

NYS Department of Environmental Conservation
Region 8 Office
6274 E. Avon-Lima Rd
Avon, NY 14414-9516
Phone: (585) 226-5326

Rochester Public Library
Rundel Branch, 4th Floor
115 South Ave
Rochester, NY 14604
Phone: (585) 428-8440

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, Voluntary 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 Rochester Gas and Electric (RG&E) - West Station site is an approximately rectangular 5.5-acre area located along the west bank of the Genesee River in the City of Rochester Monroe County. The site is approximately a quarter mile northwest of the Genesee River's High Falls.

Site Features: The site is a former manufactured gas plant (MGP) that is located within the Genesee River Gorge directly adjacent to the river. The site is relatively flat with the gorge wall rising to the west and the river to the east. The site is bounded by the Genesee River to the east, the Pont de Rennes Bridge to the south, the former Beebe Station to the west, and the end of Falls Street to the north. The site is currently vacant and most site structures have been demolished with the exception of small ancillary buildings on the northern portion of the site. Demolition of the adjacent Beebe Station was completed in 2017. The upland portion of the site is currently fenced.

Current Zoning/Use(s): The site is currently inactive and is zoned Center City District - Riverfront (CCD-R). CCD-R zoning allows for industrial, commercial, and restricted-residential property use.

Past Use of the Site: The West Station Former MGP operated from about 1910 to 1952. Following the MGP operation, the site was used as part of a large coal-fired power generating facility (Beebe Station) which was removed from service in 1999 and demolished in 2017.

Site Geology and Hydrogeology: The site is located in the Genesee River Gorge, the floor and sidewalls of which are the Rochester Shale. The site is located on fill ranging from 4 to 37.5 feet in thickness. The fill is underlain by 0 to 19.5 feet of native alluvium which overlies the Rochester Shale bedrock.

Groundwater is present in both the overburden and bedrock. The depth to groundwater is approximately 18 feet below ground surface across the site. Groundwater moves generally eastward and discharges to the river. A concrete retaining wall which is keyed into bedrock locally diverts overburden groundwater slightly to the south before it can resume its eastward course.

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, at a minimum, alternatives (or an alternative) that restrict(s) the use of the site to restricted-residential use (which allows for commercial use and industrial use) as described in DER-10, Technical Guidance for Site Investigation and Remediation were/was evaluated.

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 NYSDEC and Rochester Gas and Electric (RGE) entered into a Voluntary Cleanup Agreement (VCA) Index Number B-0535-98-07 on April 10, 2003. The Order obligates RGE to implement a full remedial program for MGP-related contamination both on and off the site.

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
- sediment

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 contaminant(s) of concern identified at this site is/are:

coal tar	fluoranthene
acenaphthene	indeno(1,2,3-CD)pyrene
acenaphthylene	naphthalene
anthracene	phenanthrene
benzo(a)anthracene	pyrene
benzo(a)pyrene	benzene
benzo(b)fluoranthene	ethylbenzene
benzo(g,h,i)perylene	toluene
benzo[k]fluoranthene	xylene (mixed)
chrysene	arsenic
dibenz[a,h]anthracene	lead
dibenzofuran	mercury

The contaminant(s) of concern exceed the applicable SCGs for:

- groundwater
- soil
- sediment

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.

Soil, groundwater, and sediments were analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), metals, polychlorinated biphenyls (PCBs), and cyanide. Based upon investigations conducted to date, the primary contaminants of concern include VOCs, SVOCs, and metals in soils; VOCs and SVOCs in groundwater; and SVOCs and metals in sediment.

All above ground MGP structures have been removed from the site and the locations of subsurface process piping have been documented. The remedial investigation has noted coal tar and coal tar contaminated soil/wastes on-site. Dense Non-Aqueous Phase Liquid (DNAPL) seeps have historically been observed in the Genesee River along the banks and coal tar impacts have been noted in the near shore river sediment adjacent to the site. Recent investigation has not indicated on-going discharges of DNAPL to the river.

Soil - SVOCs and metals are found in near surface soils (0-0.5 feet) at the site exceeding unrestricted and restricted-residential soil cleanup objectives (SCOs). Constituents exceeding SCOs in shallow soil include polycyclic aromatic hydrocarbons (PAHs) (maximum concentration 250 parts per million [ppm]), lead (maximum concentration 199 ppm) and arsenic (maximum concentration 28.6 ppm). Subsurface soil is impacted by several constituents associated with the historic use of the site as a manufactured gas plant (MGP) at levels exceeding unrestricted SCOs and protection of groundwater SCOs including VOCs (benzene, toluene, ethylene, and xylene (BTEX)), SVOCs, metals (arsenic, lead, and mercury) and cyanide. The maximum concentration of BTEX encountered in subsurface soil was 122.7 ppm and the maximum concentration of total PAHs encountered in subsurface soil was 83,330 ppm. The presence of DNAPL and concentrations of VOCs and SVOCs in subsurface soils in exceedance of protection of groundwater SCOs have resulted in groundwater contamination. Soil contamination exists in the floodplain and extends to the near-shore sediments, soil contamination does not extend off-site on the upland portions of the site.

Groundwater - VOCs (BTEX) and SVOCs (PAHs) are found throughout the site in both overburden and bedrock groundwater at levels exceeding groundwater standards. Groundwater impacts generally originate from areas of the site impacted by DNAPL and areas of the site used historically for MGP processes. Traces of DNAPL are noted in some on-site monitoring wells. The maximum concentration of BTEX encountered in overburden groundwater was 954 parts per billion (ppb) and the maximum concentration of total PAHs encountered in groundwater was 2,107 ppb. Total BTEX and PAH concentration in bedrock groundwater were generally an order of magnitude lower than in overburden groundwater. The maximum concentration of BTEX encountered in bedrock groundwater was 231 ppb and the maximum concentration of total PAHs encountered in

groundwater was 2,355 ppb. The vertical extent of impact to bedrock groundwater from the site occurs in the Irondequoit Limestone which is immediately below the Rochester Shale. Groundwater flows to the east through the site towards the Genesee River, and groundwater beneath adjacent properties to the north, south and west of the site is not impacted.

Sediment – Near shore sediments in the Genesee River are off-site and are impacted by past DNAPL seeps emanating from the site and contain concentrations of PAHs and metals in exceedance of sediment standards. A hardened tar deposit has been identified in the Genesee River adjacent to the site. Total PAHs levels in sediment range from non-detect to approximately 15,000 parts per million (ppm). 10 out of 28 sediment samples exceeded the Class C guidance value of 35 ppm for total PAHs in sediment, while 23 out of 28 sediment samples exceeded the Class A guidance value of 4 ppm. Several metals exceeded sediment screening values including arsenic, nickel and silver (exceed Class A guidance values) and lead, mercury, copper and silver (exceed Class A and Class C guidance values). The concentrations of metals detected in sediment samples in exceedance of sediment guidance values are co-located with elevated PAH concentrations.

Special Resources Impacted/Threatened: The site is located directly adjacent to the Genesee River. The Genesee River adjacent to the site is considered a class B surface water in the State of New York. The river bank adjacent to the site is ten to twenty feet wide and is vegetated with trees. Directly adjacent to a narrow river bank is a tall concrete wall (10 to 15 feet tall). Upland of the wall there are the few remaining MGP buildings and a grassed field where the former Beebe Power Station used to be. MGP impacts to river sediments have been documented and a hardened tar deposit has been identified in the Genesee River adjacent to the site.

Soil vapor sampling has not been conducted at the site.

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 upland portion of the site is currently fenced. Persons who enter the site could contact contaminants in the soil by walking on the soil, digging or otherwise disturbing the soil. People may come in contact with contaminants present in the floodplain or shallow river sediments in the event that they enter those areas. 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 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. Currently there are no occupied buildings on the site. A soil vapor intrusion evaluation is recommended in the event that the current buildings become re-occupied or new buildings are developed on the site. Environmental sampling indicates that soil vapor intrusion is not a 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.
- Prevent the discharge of contaminants to surface water.
- 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.

Sediment

RAOs for Public Health Protection

- Prevent direct contact with contaminated sediments.

RAOs for Environmental Protection

- Prevent impacts to biota from ingestion/direct contact with sediments causing toxicity or impacts from bioaccumulation through the marine or aquatic food chain.
- Restore sediments to pre-release/background conditions to the extent feasible.

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.

The selected remedy is referred to as the Barrier Wall, Shoreline and Sediment Excavation, Site Cover and Natural Attenuation 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; and
- Integrating the remedy with the end use where possible and encouraging green and sustainable re-development.

2. Excavation

Excavation and off-site disposal of contaminant source areas from the shoreline of the site to an average depth of at least 10 feet (encompassing the floodplain soil between the river and the retaining wall, and from the river bank south of the retaining wall) including:

- grossly contaminated soil, as defined in 6 NYCRR Part 375-1.2(u);
- soil containing visual impacts including tar like material, purifier waste, or non-aqueous phase liquid;
- soil containing total SVOCs exceeding 500 ppm;
- soils that create a nuisance condition, as defined in Commissioner Policy CP-51 Section G.

Excavation and removal of any underground storage tanks (USTs), fuel dispensers, underground piping or other structures associated with a source of contamination. Approximately 11,300 cubic yards of contaminated soil will be removed from the site. The approximate depth of excavation will be between 6 and 15 feet (bedrock). Excavation will terminate at the depth where MGP source

material is not observed. Clean fill meeting the requirements of 6 NYCRR Part 375-6.7(d) will be brought in to replace the excavated soil or complete the backfilling of the excavation and establish the designed grades at the site. Habitat restoration of the floodplain and stream consistent with bioengineering design principles and re-establishment of habitat function.

3. 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 soil cleanup objectives (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, cement, paved surface parking areas, sidewalks, building foundations and building slabs. The cover system within the bank and floodplain will consist solely of soil, and will not include a demarcation layer, and shall be placed in accordance with Element 5 below.

4. Sediment Removal

Excavation and off-site disposal of near-shore, visually impacted sediment from the Genesee River (encompassing all sediment adjacent to the site). Sediment will be removed based on the following criteria:

- grossly contaminated soil, as defined in 6 NYCRR Part 375-1.2(u);
- sediment containing visual impacts including tar like material, purifier waste, or non-aqueous phase liquid;
- sediment with total PAH concentrations exceeding Class C criteria.

Sediment will be accessed through the construction of a near-shore water diversion structure such as temporary sheet piling or other means. Approximately 8,000 to 10,000 cubic yards of contaminated sediment will be removed from the site. The final extent of sediment excavation will be determined following a pre-design investigation. Excavation criteria will be confirmed based on visual inspection. It is expected that the sediment removal will achieve the remedial action objectives for the protection of public health as well as for the environment.

5. Restoration of Sediment Removal Area

Stream bed and bank bathymetry and topography will be restored with appropriate material. The stream bed, banks and floodplain will be restored in-kind to the extent possible using natural stream restoration design principles and with the goal of re-establishing habitat function. Bank and floodplain restoration will not supersede the current or extended barrier wall described in Element 6. If present, submerged aquatic vegetation in the remediation area will also be restored. The design will include a monitoring plan for areas disturbed by the remedy and all activities will be consistent with the requirements of 6 NYCRR Part 608.

6. Barrier Wall

The existing site retaining wall will be extended approximately 360 feet to the south to form a barrier wall to contain remaining on-site contamination. The southern terminus of the barrier wall will be keyed into the decommissioned house inlet structure. The barrier wall will be designed to prevent dense non-aqueous phase liquid (DNAPL) from seeping through the wall towards the river bank and Genesee River. The barrier wall will extend to bedrock. A pre-design investigation of the existing retaining wall will be conducted, and repairs will be made as necessary.

7. DNAPL Recovery

Installation and operation of DNAPL recovery wells along the upland side of the barrier wall to remove potentially mobile DNAPL from the subsurface. The number, depth, type and spacing of the recovery wells will be determined during the design phase of the remedy. DNAPL will be collected periodically from each well; however, if wells are determined by the Department to accumulate large quantities of DNAPL over extended time periods, they can be converted to automated collection.

8. Monitored Natural Attenuation

Groundwater contamination (remaining after active remediation) will be addressed with monitored natural attenuation (MNA). Groundwater will be monitored for site related contamination and also for MNA indicators which will provide an understanding of the (biological activity) breaking down the contamination. It is anticipated that contamination will attenuate over a 30-year time period. Reports of the attenuation will be provided at 5 year intervals, and active remediation will be proposed if it appears that natural processes alone will not address the contamination. The contingency remedial action will depend on the information collected, but it is currently anticipated that in-situ biological treatment would be the expected contingency remedial action.

9. Institutional Controls

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, commercial or industrial 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.

10. Site Management Plan

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

1. 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 8 above.

Engineering Controls: The soil cover discussed in Paragraph 3, the barrier wall discussed in Paragraph 5, and the DNAPL recovery system discussed in paragraph 7.

This plan includes, but may not be limited to:

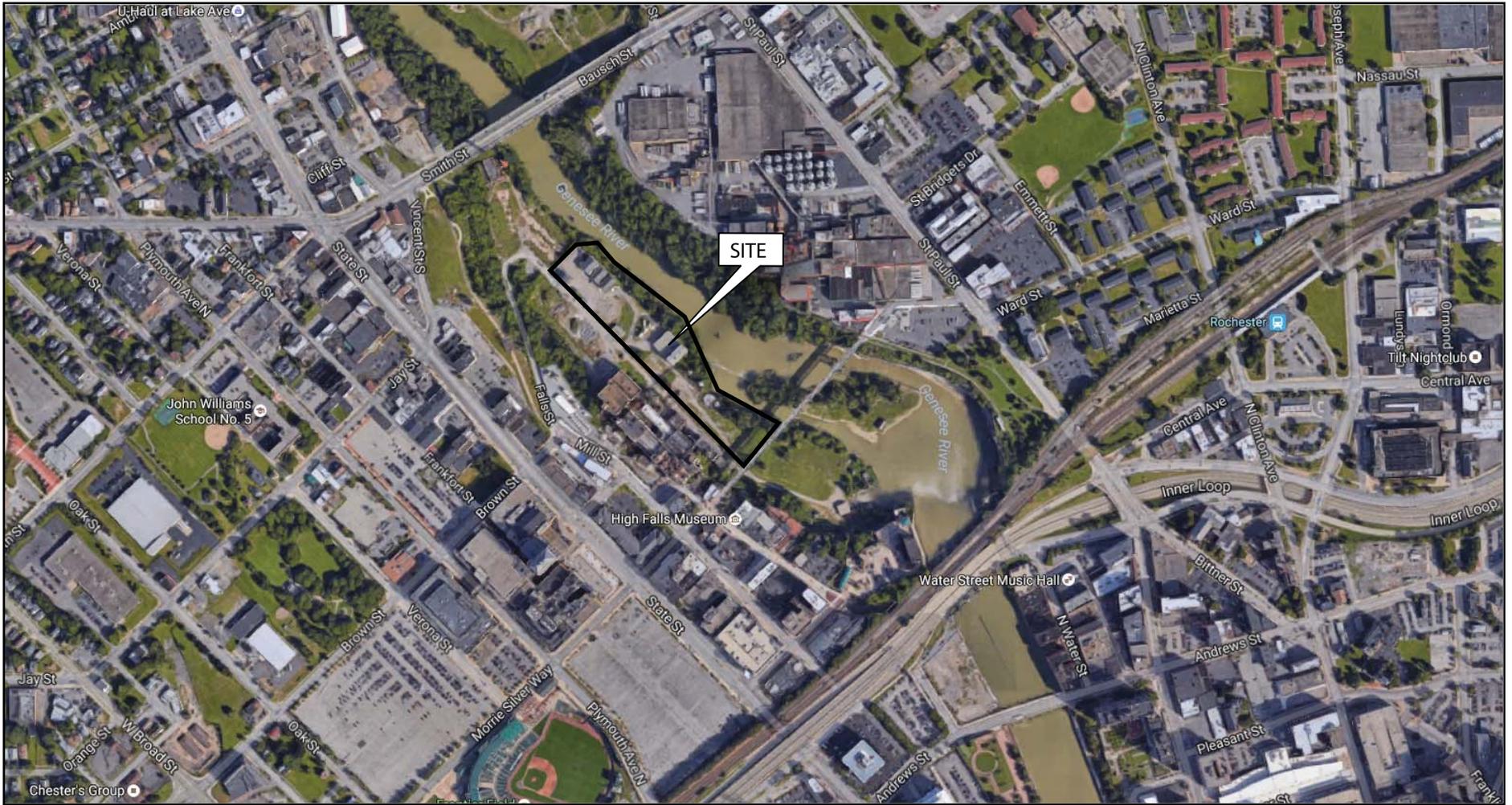
- an Excavation Plan which details the provisions for management of future excavations in areas of remaining contamination;
- a provision should redevelopment occur to ensure no soil exceeding protection of groundwater concentrations will remain below storm water retention basin or infiltration structures.
- descriptions of the provisions of the environmental easement including any land use, and groundwater use restrictions;
- a provision for evaluation of the potential for soil vapor intrusion for any buildings built in the future on the site, including provision for implementing actions recommended to address exposures related to soil vapor intrusion;
- a provision that should a building foundation or building slab be removed in the future, a cover system consistent with that described in Paragraph 3 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.

2. 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;
- a schedule of monitoring and frequency of submittals to the Department;
- monitoring for vapor intrusion for any existing or future buildings on the site, as may be required by the Institutional and Engineering Control Plan discussed above; Monitoring of the barrier wall effectiveness in preventing contaminant release to the river; and
- Monitoring of the restored river bank and river bed for erosion with repairs, as needed.

3. 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 (DNAPL recovery). 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.



New York State



Site Location



SCALE
(miles, approximate)



SITE LOCATION MAP
 Rochester Gas and Electric
 West Station Former MGP Plant Area
 Remedial Action Work Plan
 Rochester, New York

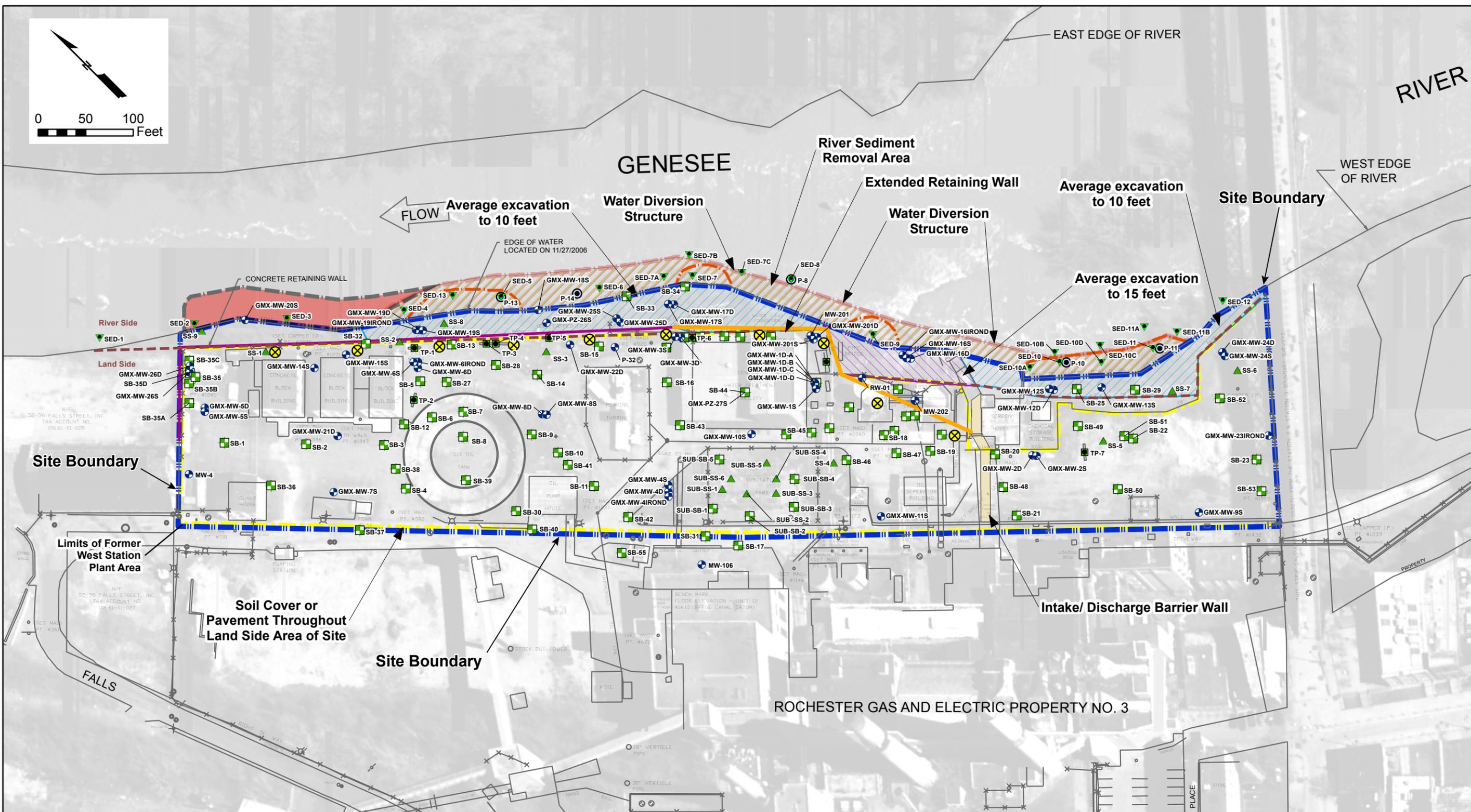
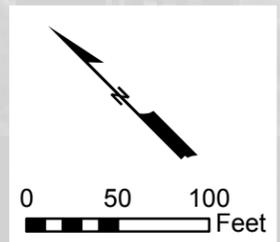
By: MAC

Date: 10/2016

Project No.128480



Figure **1**



S:\BU\BU12\160900\13_0102_aar_fig_23.mxd

Explanation	
Monitoring Well	Soil Boring
Pore Water	Surface Soil
Sediment Sample	Test Pit
Site Boundary	River sediment removal area
Extension of existing barrier wall	Average excavation to 10 feet
Extent of sediment impacts (RI)	Average excavation to 15 feet
Passive DNAPL recovery well	Intake/ Discharge Barrier Wall
	Extent of Cover System (1-2 ft soil or pavement)
	River sediment removal area (contingent on PDI results)

**ALTERNATIVE 3:
EXTEND EXISTING BARRIER WALL,
DNAPL RECOVERY, SOIL COVER
Rochester Gas and Electric
West Station Former MGP Plant Area RAWP
Rochester, New York**

By: MC	Date: October 2017	Project No. 128480
--------	--------------------	--------------------

Figure 2