# RECORD OF DECISION

Kingsbury Landfill
Operable Unit Number 01: On-Site Contamination
State Superfund Project
Kingsbury, Washington County
Site No. 558008
March 2023



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

## DECLARATION STATEMENT - RECORD OF DECISION

Kingsbury Landfill
Operable Unit Number: 01
State Superfund Project
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#### **Statement of Purpose and Basis**

This document presents the remedy for Operable Unit Number: 01: On-Site Contamination of the Kingsbury Landfill site, a Class 2 inactive hazardous waste disposal 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, and is not inconsistent with the National Oil and Hazardous Substances Pollution Contingency Plan of March 8, 1990 (40CFR300), as amended.

This decision is based on the Administrative Record of the New York State Department of Environmental Conservation (the Department) for Operable Unit Number: 01 of the Kingsbury Landfill site and the public's input to the proposed remedy presented by the Department. A listing of the documents included as a part of the Administrative Record is included in Appendix B of the ROD.

#### **Description of Selected Remedy**

During the course of the investigation certain actions, known as interim remedial measures (IRMs), were undertaken at the above referenced site. An IRM is conducted at a site when a source of contamination or exposure pathway can be effectively addressed before completion of the remedial investigation (RI) or feasibility study (FS). The IRMs undertaken at this site are discussed in Section 6.2.

Based on the results of the investigations at the site, the IRM that has been performed, and the evaluation presented here, the Department has selected No Further Action with Site Management as the remedy for the site. The Department believes that this remedy is protective of human health and the environment and satisfies the remediation objectives described in Section 6.5.

The elements of the IRM already completed, as described in Section 6.2, and the institutional controls are listed below:

- 1. Cover System
- 2. Slurry Wall
- 3. Groundwater Extraction & Treatment

- 4. Upgradient Gravity-fed Groundwater Drain
- 5. Environmental Easement (described below)
- 6. Site Management Plan (described below)

The elements of the selected remedy are as follows:

Based on the past site investigations and completion of multiple IRMs consisting of a cutoff wall, impermeable cap, and upgradient drain, the Department has selected No Further Action with Site Management as the remedy for Operable Unit 01. The recent investigation data indicate this Operable Unit does not pose a significant threat to human health or the environment and satisfies the remedial objectives described in Section 6.5. To ensure the remedy remains effective in protecting human health and the environment and complies with the New York State standards, criteria, and guidance, site management activities shall continue in accordance with the current Site Management Plan.

- 1. Green remediation principles and techniques will be implemented to the extent feasible in the 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 gas and other emissions;
  - Increasing energy efficiency and minimizing use of non-renewable energy;
  - Conserving and efficiently managing resources and materials; and
  - Reducing waste, increasing recycling and increasing reuse of materials which would otherwise be considered a waste;
- 2. Imposition of an institutional control in the form of an environmental easement for the controlled property.
- 3. A Site Management Plan is required, which includes the following:
- a) an Institutional Control Plan that identifies all use restrictions for the site and details the steps and media-specific requirements necessary to ensure the following institutional controls remain in place and effective:

#### **Institutional Controls:**

The Environmental Easement discussed above.

This plan includes, but may not be limited to:

- descriptions of the provisions of the environmental easement including the restriction of groundwater use as a source of potable or process water, without necessary water quality treatment as determined by the NYSDOH or County DOH;
- allow the use and development of the controlled property for commercial use as defined by Part 375-1.8(g), although land use is subject to local zoning laws;

- a provision for evaluation of the potential for soil vapor intrusion for any new buildings
  developed on the site, including provision for implementing actions recommended to
  address exposures related to soil vapor intrusion;
- a provision that should the owners of properties where water supply sampling was previously offered request to have their properties sampled in the future, the NYSDEC, in consultation with the NYSDOH, shall assess the need for sampling and take appropriate action:
- maintaining site access controls and Department notification;
- the steps necessary for the periodic reviews and certification of the institutional and/or engineering controls; and
- requires the remedial party or site owner to complete and submit to the Department a periodic certification of institutional controls in accordance with Part 375-1.8 (h)(3).
- b) Monitoring Plan to assess the performance and effectiveness of the remedy. The plan includes, but may not be limited to:
  - a schedule of monitoring and frequency of submittals to the Department; and
  - monitoring for vapor intrusion for any new buildings developed on the site, as may be required by the Institutional and Engineering Control Plan described 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 remedial systems, in the event the treatment system is turned back on. The plan includes, but is not limited to:
  - procedures for operating and maintaining the system; and
  - compliance inspection of the systems to ensure proper O&M as well as providing the data for any necessary reporting.

## **New York State Department of Health Acceptance**

The New York State Department of Health (NYSDOH) concurs that the remedy for this site is protective of human health.

#### **Declaration**

The selected remedy is protective of human health and the environment, complies with State and Federal requirements that are legally applicable or relevant and appropriate to the remedial action to the extent practicable, and is cost effective. This remedy utilizes permanent solutions and alternative treatment or resource recovery technologies, to the maximum extent practicable, and satisfies the preference for remedies that reduce toxicity, mobility, or volume as a principal element.

| March 31, 2023 | Andrew Guglislmi                      |  |  |
|----------------|---------------------------------------|--|--|
| Date           | Andrew O. Guglielmi, Director         |  |  |
|                | Division of Environmental Remediation |  |  |

## RECORD OF DECISION

Kingsbury Landfill Kingsbury, Washington County Site No. 558008 March 2023

## **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 hazardous wastes at the site resulted in threats to public health and the environment that were addressed by actions known as interim remedial measures (IRMs), which were undertaken at the site. An IRM is conducted at a site when a source of contamination or exposure pathway can be effectively addressed before completion of the remedial investigation (RI) or feasibility study (FS). The IRMs undertaken at this site are discussed in Section 6.2.

Based on the implementation of the IRMs and continued site management, the findings of the investigation of this site indicate that the site does not pose a threat to human health or the environment. The IRMs conducted at the site attained the remediation objectives identified for this site, which are presented in Section 6.5, for the protection of public health and the environment. No Further Action with Site Management is the remedy selected by this Record of Decision (ROD). A No Further Action remedy may include site management, which will include continued operation of any remedial system installed during the IRM and the implementation of any prescribed controls that have been identified as being part of the remedy for the site. This ROD identifies the IRMs conducted and discusses the basis for No Further Action.

The New York State Inactive Hazardous Waste Disposal Site Remedial Program (also known as the State Superfund Program) is an enforcement program, the mission of which is to identify and characterize suspected inactive hazardous waste disposal sites and to investigate and remediate those sites found to pose a significant threat to public health and environment.

The Department has issued this document in accordance with the requirements of 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 document is a summary of the information that can be found in the site-related reports and documents in the document repository identified below.

## **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:

Hudson Falls Free Library 220 Main Street Hudson Falls, NY 12839 Phone: (518) 747-6406

DECInfo Locator - Web Application:

https://gisservices.dec.ny.gov/gis/dil/index.html?rs=558008

A public meeting was also conducted. At the meeting, the findings of the remedial investigation (RI) and the feasibility study (FS) were presented along with a summary of the proposed remedy. After the presentation, a question-and-answer period was held, during which verbal or written comments were accepted on the proposed remedy.

Comments on the remedy received during the comment period are summarized and addressed in the responsiveness summary section of the ROD.

## **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 <a href="http://www.dec.ny.gov/chemical/61092.html">http://www.dec.ny.gov/chemical/61092.html</a>

## **SECTION 3: SITE DESCRIPTION AND HISTORY**

#### Location:

The Kingsbury Landfill Site is a 25.5-acre site located in a rural area. The site is located on Burgoyne Avenue near the intersection of Pine Street in the Town of Kingsbury, Washington County, New York. The Glens Falls Feeder Canal Trail bike path and the Feeder Canal border the site to the south.

#### Site Features:

The site is a closed landfill. The former landfill was capped in 1989 and is now covered with grass. A treatment building is located on-site which houses the leachate collection and treatment system (LCTS). The landfill is surrounded by woods, grasses and two ponds.

#### Current Zoning and Land Use:

The landfill is currently inactive and is zoned commercial. The parcels surrounding the landfill are zoned agricultural. The nearest residence is approximately 600 feet west of the site on Burgoyne Avenue.

#### Past Use of the Site:

The Kingsbury Landfill operated as a municipal landfill from 1930 to 1985 and received both solid and hazardous wastes. Between 1930 and 1980, the General Electric Company (GE) disposed of an estimated 1,900 tons of hazardous waste at the landfill. The primary contaminants of concern are polychlorinated biphenyl (PCBs), volatile organic compounds (VOCs) and metals. PCB contamination was evaluated off-site in Cutters Pond and Brown Pond. Contamination was discovered in Brown Pond and subsequently remediated via sediment excavation in October 2011.

Complaints by an adjacent landowner of leachate migrating into a surface water body resulted in legal action between 1967 and 1972. The Kingsbury Landfill operator, the Town of Kingsbury, attempted to divert leachate and surface water runoff into the Feeder Tow Canal but was unsuccessful. During hearings before the Department, GE acknowledged that they had disposed of 1,900 tons of industrial waste material at the landfill, including PCBs in the form of scrap capacitors.

The Department and NYSDOH initiated a sampling program at the Site between 1977 and 1979 with follow-up sampling in 1980 and 1981. The results of these investigations found: elevated levels of PCBs and other contaminants prompting the closure of the landfill; PCB soil contamination did not extend much beyond the immediate perimeter of the landfill; and groundwater beneath the landfill was found to contain significant levels of PCBs.

On September 24, 1980, GE entered into an agreement with the Department (referred to as the Seven Sites Agreement) which established requirements for actions to be completed at the Site to remediate the identified environmental impacts as well as mitigate the potential for ongoing and future environmental degradation.

Landfill closure activities were completed in 1989. These activities included: the construction of a slurry wall; a low permeability clay cap and cover system; a passive landfill gas venting system; a leachate collection and treatment system; and the installation of groundwater monitoring wells. When initially constructed, the landfill gas was treated through activated carbon units integrated into the vent risers. In 2016, the carbon drums were replaced with turbine vents as the drums had deteriorated.

Following closure activities, a leachate stream, estimated to be flowing at up to 30 gallons per minute, continued to drain from the site. The Department designed and installed the leachate collection and treatment system in 1988 and 1989. After a 1990 full-scale treatability study, renovations to the treatment system were completed in 1991 and the system was fully operational.

The ILCTS has been treating leachate collected by the underdrain system from March 1989 to

the 2019. The system was inactive from 1992 to 2002 due to low leachate levels. In August 2002, the system was re-started due to rising leachate levels and was operated seasonally through 2009. The system has run continuously from June 2009 to September 2019 when the treatment system was turned off to monitor the rise in leachate level inside the slurry wall. A series of upgrades were performed in 1995, 2008 and 2013.

In 2014, a remedial systems optimization report introduced remedial alternatives to address the continued generation of leachate. These alternatives were further evaluated in the Remedial Investigation – Focused Feasibility Study before the Department selected the upgradient drain for Interim Remedial Measure (IRM) implementation.

## Operable Units:

The site was divided into two operable units. An operable unit represents a portion of a remedial program for a site that for technical or administrative reasons can be addressed separately to investigate, eliminate or mitigate a release, threat of release or exposure pathway resulting from the site contamination. Operable Unit 1 (OU1) is the on-site landfill area and impacted groundwater. OU2 consists of off-site soil and sediment. The off-site portions consist of a feeder/tow canal for the Champlain Canal (located to the south/southwest of the landfill), Cutter Pond (located to the east), and a small unnamed pond, referred to here as Brown Pond (located to the north).

## Site Geology and Hydrogeology:

The site lies within the Hudson-Champlain Lowland, a broad bedrock depression formed in the Middle Ordovician Snake Hill Formation. The bedrock depression became a depositional outlet for retreating Wisconsinan Stages glaciers. The area was occupied by a series of lakes where sand, silt and clay were deposited in broad deltas formed by Glacial Lake Hudson.

Groundwater flow is to the east-southeast through the sand aquifer. Depth to groundwater ranges from 2 to 10 feet below ground surface (bgs) across the site.

Operable Unit (OU) Number 01 is the subject of this document.

A Record of Decision was issued previously for OU 02 which addressed offsite soil and sediment. As PCB-contaminated sediment was removed from Brown's Pond in 2011, a No Further Action Record of Decision was released in March 2014.

A site location map is attached as Figure 1. A site boundary map is shown in Figure 2.

## **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.

A comparison of the results of the investigation to the appropriate standards, criteria and guidance values (SCGs) for the identified land use and the unrestricted use SCGs for the site contaminants is included in the Tables for the media being evaluated in Exhibit A.

#### **SECTION 5: ENFORCEMENT STATUS**

Potentially Responsible Parties (PRPs) are those who may be legally liable for contamination at a site. This may include past or present owners and operators, waste generators, and haulers.

The PRPs for the site, documented to date, include:

General Electric

United Merchants and Manufacturers, Inc.

Town of Kingsbury

The Department entered into a Consent Order with the General Electric Corporation (GE) in 1980; with the Town of Kingsbury (Town) in 1985; and with United Merchants and Manufacturers, Inc. (UMM) in 1985. The Orders obligate the Town, UMM, and GE to provide a financial contribution toward a full remedial program to be implemented by the Department.

If the Department incurs costs under the State Superfund for implementation of the remedial program or continued operation and maintenance at the site, the Department will seek cost recovery from all appropriate PRPs to the extent costs are recoverable under the Orders or applicable law.

## **SECTION 6: SITE CONTAMINATION**

#### **6.1:** Summary of the Remedial Investigation

A Remedial Investigation (RI) has been conducted. The purpose of the RI was to define the nature and extent of any contamination resulting from previous activities at the site. The field activities and findings of the investigation are described in the RI Report.

The following general activities are conducted during an RI:

- Research of historical information,
- Geophysical survey to determine the lateral extent of wastes,
- Test pits, soil borings, and monitoring well installations,
- Sampling of waste, surface and subsurface soils, groundwater, and soil vapor,
- Sampling of surface water and sediment,
- Ecological and Human Health Exposure Assessments.

The analytical data collected on this site includes data for:

- groundwater
- surface water
- 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. The tables found in Exhibit A list the applicable SCG in the footnotes. For a full listing of all SCGs see: <a href="http://www.dec.ny.gov/regulations/61794.html">http://www.dec.ny.gov/regulations/61794.html</a>

## 6.1.2: RI Results

The data have identified contaminants of concern. A "contaminant of concern" is a hazardous waste 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 in Exhibit A. Additionally, the RI Report contains a full discussion of the data. The contaminants of concern identified for this Operable Unit at this site are:

polychlorinated biphenyls (PCB) 1,1 dichloroethene trichloroethene (TCE) methylene chloride benzene dichlorodifluoromethane vinyl chloride xylene (mixed) chlorobenzene naphthalene antimony 1.4-dioxane arsenic Per- and polyfluoroalkyl substances (PFAS) cis-1,2-dichloroethene chromium 1,4-dichlorobenzene lead 1,3-dichlorobenzene phenol 1,1-dichloroethane

Based on the investigation results, comparison to the SCGs, and the potential public health and environmental exposure routes, certain media and areas of the site required remediation. These media were addressed by the IRMs described in Section 6.2. More complete information can be found in the RI Report and the IRM Construction Completion Report.

## **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 Record of Decision.

The following IRMs have been completed at this site based on conditions observed during the RI.

## Capping/Slurry Wall

Installed in 1989, the soil-bentonite groundwater cut-off wall (slurry wall) and the low permeability clay cap and cover system are meant to effectively cut off the waste mass and leachate from the surrounding environment. The slurry wall is constructed of a soil bentonite mixture and surrounds the waste mass forming a barrier to leachate escaping into permeable soils. The wall elevation and depth of construction varies to match the geologic conditions encountered. The depth of slurry wall placement is controlled by the underlying clay surface, with trenching terminating six feet into the underlying clay to create a low permeability seal. The slurry was placed without failing any required quality control testing, but was required to be extended deeper in areas to address localized permeable soils. A soil cap was installed at the site consisting of a 42-inch layer of compacted clay, a 12-inch layer of silty loam, and a 6-inch layer of topsoil. The cap was designed to restrict infiltration of precipitation into the landfill. The compacted soil cap depends on a vegetative cover to maintain the cohesion of the soil. Rip-rap filled drainage ditches channel runoff away from the landfill towards the east.

## **Leachate Treatment System**

In 1988 and 1989, the Interim Leachate Collection and Treatment System (ILCTS) was installed to evacuate and treat leachate from the landfill in response to leachate seeps appearing along the junction of the cap and cut-off wall. The ILCTS was designed to reduce the leachate head in the landfill thereby protecting the integrity of the engineered cap and cover system and mitigating the potential for leachate release into the environment. The ILCTS was designed for a maximum capacity of 30 gallons per minute (gpm), which was estimated to be sufficient to maintain the leachate elevation at or below the 202-foot action level to prevent seeps. In the treatment system, leachate from the landfill is first aerated to oxidize the iron, then chemically treated with sodium aluminate and a polymer to remove the precipitated iron, and finally polished by activated carbon to remove PCBs. The ILCTS was first operated in 1991 removing and treating almost two million gallons of leachate. The leachate collection system was renovated in response to operational problems in 1995 and again in 2008. The ILTS was operated by Earth Tech and IEG in 2002, 2003 and 2005, removing and treating approximately two million gallons of leachate in each 3-month operating season.

The ILCTS operated continuously from 2009 until 2019. In April 2011, an inspection indicated that both the shallow and deep drains lines were partially to completely blocked with sediment. An effort was made in 2011 to draw down the leachate level in the landfill in order to access the drain lines which had become clogged. The pumping rate was increased from approximately 3 gpm to almost 10 gpm in August 2011, but further discussions on drain lancing with NYSDEC

resulted in the postponement of the operation pending a review of other alternatives. The treatment system was shut off on September 9, 2019 to conduct a rising head test and install an upgradient drain to alleviate leachate mounding within the slurry wall. The system is currently offline and, as discussed below, may be decommissioned based on performance monitoring.

## Upgradient Drain

In October 2022, an 8-inch upgradient gravity drain was installed to decrease the volume of water entering the landfill, alleviate leachate mounding within the landfill, and reduce slurry wall leaks down and side gradient of the landfill. Groundwater flow upgradient of the landfill is redirected to Cutter's Pond and regulated under a State Pollutant Discharge Elimination System (SPDES) permit equivalent. The recently installed upgradient drain has significantly lowered groundwater elevations upgradient of the waste mass, thereby reducing the groundwater mounding pressure behind the slurry wall. Groundwater level reductions also have occurred within the waste mass and will take time for the aquifer to equilibrate. Monitoring will continue to ensure the IRM remains effective the need to restart the ILCTS is alleviated.

## 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.

Based upon the resources and pathways identified and the toxicity of the contaminants of ecological concern at this site, a Fish and Wildlife Resources Impact Analysis (FWRIA) was deemed not necessary for OU 01.

This site is a closed landfill. The primary contaminants of concern are polychlorinated biphenyls (PCBs) in Brown's Pond sediments and volatile organic compounds (VOCs) and PCBs in on-site soil and groundwater. Per- and Polyfluoroalkyl Substances (PFAS), perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS) were also reported in groundwater. Unless otherwise noted, concentrations described below are from the post-IRM sampling event.

Groundwater: Total PCBs in site groundwater were detected at concentrations up to 97 parts per billion (ppb), exceeding the groundwater standard of 0.09 ppb. Several VOCs, including but not limited to, chlorobenzene (CB) and trichloroethene (TCE) and associated breakdown products exceeded the groundwater standard of 5 ppb, with CB detected up to 100 ppb and TCE up to 270 ppb. In 2017, PFOA and PFOS were detected at concentrations of up to 1500 and 680 parts per trillion (ppt), respectively, both exceeding their respective 6.7 ppt and 2.7 ppt ambient water quality guidance value. The highest individual PFAS compound that exceeded the 100 ppt screening level was Perfluorohexanesulfonic acid (PFHxS) at 500 ppt. The total concentration of PFAS, including PFOA and PFOS, were reported at concentrations up to 3,283.6 ppt, exceeding the 500 ppt screening level for groundwater. 1,4-Dioxane was reported at a concentration of up to 140 ppb, exceeding the 0.35 ppb ambient water quality guidance value. The highest exceedances for PFAS and 1,4-dioxane occur inside the slurry wall within the waste mass. Groundwater at the site is not used as a source of drinking water. While there is evidence of

contaminated groundwater just downgradient of the slurry wall over standards, there are no known downgradient wells used as sources of drinking water within at least one-half mile of the site and the IRMs are expected to limit further migration of contaminated groundwater.

Soil: During an additional investigation in 2019, PCBs and VOCs were detected in site soils that have been sequestered under the landfill cover system. Total PCBs were detected in site soils up to 162 parts per million (ppm) compared to the unrestricted use soil cleanup objective (UUSCO) of 0.1 ppm. Acetone was detected at 0.13 ppm (UUSCO – 0.05 ppm). Acetone and PCB soil exceedances above the commercial use SCO were found within the slurry wall.

Off-Site Surface Water: Four samples were collected from nearby Cutter Pond and two from the Feeder Canal. Samples were analyzed for VOCs, SVOCs, PCBs, and Target Analyte List (TAL) metals. There were no exceedances of VOCs, SVOCs, or PCBs in any of the six samples. Iron, manganese, and sodium exceedances are similar to concentrations present upgradient of the landfill, indicating iron, manganese, and sodium are naturally high in the underlying aquifer.

Off-Site Sediment: Sediment samples were collected from Cutters Pond, co-located with surface water samples noted above, following completion of the IRMs. The results indicate that sediment in Cutter's Pond slightly exceed the Department's Class A standards, criteria or guidance (SCGs) for chromium, copper, and nickel as follows: chromium up to 43 ppm (SCG <43 ppm), copper up to 35 ppm (SCG <32 ppm); nickel up to 49 ppm (SCG <23 ppm). There were no exceedances of VOCs, SVOCs, PCBs or pesticides. Sediment in Brown's Pond that exceeded PCB standards was removed in 2011. Removal activities are summarized in the OU2 Record of Decision.

Residual contamination in the soil, groundwater, and sediment is being managed under a Site Management Plan.

## 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*.

Remedial activities undertaken at the site have effectively reduced the potential for exposure to site-related contaminants and measures are in place to ensure that these measures remain protective in the future.

## 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**

• Prevent the discharge of contaminants to surface water.

#### 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.

## **SECTION 7: SUMMARY OF SELECTED REMEDY**

Based on the results of the investigations at the site, the IRMs that have been performed, and the evaluation presented here, the Department has selected No Further Action with Site Management as the remedy for the site. The Department believes that this remedy is protective of human health and the environment and satisfies the remediation objectives described in Section 6.5.

The elements of the IRM already completed, as described in Section 6.2, and the institutional controls are listed below:

- 1. Cover System
- 2. Slurry Wall
- 3. Groundwater Extraction & Treatment
- 4. Upgradient Gravity-fed Groundwater Drain
- 5. Environmental Easement (described below)
- 6. Site Management Plan (described below)

The elements of the selected remedy are as follows:

Based on the past site investigations and completion of multiple IRMs consisting of a cutoff wall, impermeable cap, and upgradient drain, the Department has selected No Further Action with Site Management as the remedy for Operable Unit 01. The recent investigation data indicate this Operable Unit does not pose a significant threat to human health or the environment and satisfies the remedial objectives described in Section 6.5. To ensure the remedy remains effective in protecting human health and the environment and complies with the New York State standards, criteria, and guidance, site management activities shall continue in accordance with the current Site Management Plan.

- 1. Green remediation principles and techniques will be implemented to the extent feasible in the 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 gas and other emissions;
  - Increasing energy efficiency and minimizing use of non-renewable energy;
  - Conserving and efficiently managing resources and materials; and
  - Reducing waste, increasing recycling and increasing reuse of materials which would otherwise be considered a waste;
- 2. Imposition of an institutional control in the form of an environmental easement for the controlled property.
- 3. A Site Management Plan is required, which includes the following:
- a) an Institutional Control Plan that identifies all use restrictions for the site and details the steps and media-specific requirements necessary to ensure the following institutional controls remain in place and effective:

#### **Institutional Controls:**

The Environmental Easement discussed above.

This plan includes, but may not be limited to:

- descriptions of the provisions of the environmental easement including the restriction of groundwater use as a source of potable or process water, without necessary water quality treatment as determined by the NYSDOH or County DOH;
- allow the use and development of the controlled property for commercial use as defined by Part 375-1.8(g), although land use is subject to local zoning laws;
- a provision for evaluation of the potential for soil vapor intrusion for any new buildings developed on the site, including provision for implementing actions recommended to address exposures related to soil vapor intrusion;
- a provision that should the owners of properties where water supply sampling was previously offered request to have their properties sampled in the future, the NYSDEC, in consultation with the NYSDOH, shall assess the need for sampling and take appropriate action;
- maintaining site access controls and Department notification;
- the steps necessary for the periodic reviews and certification of the institutional and/or engineering controls; and
- requires the remedial party or site owner to complete and submit to the Department a periodic certification of institutional controls in accordance with Part 375-1.8 (h)(3).
- b) Monitoring Plan to assess the performance and effectiveness of the remedy. The plan includes, but may not be limited to:
  - a schedule of monitoring and frequency of submittals to the Department; and

- monitoring for vapor intrusion for any new buildings developed on the site, as may be required by the Institutional and Engineering Control Plan described 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 remedial systems, in the event the treatment system is turned back on. The plan includes, but is not limited to:
  - procedures for operating and maintaining the system; and
  - compliance inspection of the systems to ensure proper O&M as well as providing the data for any necessary reporting.

#### Exhibit A

#### **Nature and Extent of Contamination**

This section describes the findings of the Remedial Investigation (RI) for all environmental media that were evaluated. As described in Section 6.1, samples were collected from various environmental media to characterize the nature and extent of contamination.

For each medium for which contamination was identified, a table summarizes the findings of the investigation. The tables present the range of contamination found at the site in the media and compares the data with the applicable SCGs for the site. The contaminants are arranged into four categories: volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), pesticides/polychlorinated biphenyls (PCBs), and inorganics (metals and cyanide). For comparison purposes, the SCGs are provided for each medium that allows for unrestricted use. For soil, if applicable, the Restricted Use SCGs identified in Section 4 and Section 6.1.1 are also presented.

#### Waste/Source Areas

As described in the RI report, waste/source materials were identified at the site and are impacting groundwater.

Wastes are defined in 6 NYCRR Part 375-1.2 (aw) and include solid, industrial and/or hazardous wastes. Source Areas are defined in 6 NYCRR Part 375 (au). Source areas are areas of concern at a site where substantial quantities of contaminants are found which can migrate and release significant levels of contaminants to another environmental medium. Wastes and source areas were identified at the site include, the area bounded by the slurry wall, which contains the waste disposal area (Figure 2). The landfill is primarily composed of municipal solid waste; however, it also contains hazardous waste along with 1,900 tons of waste capacitors containing PCBs. The landfill cap restricts precipitation infiltration into the waste mass, preventing the accumulation of leachate. The slurry wall that was installed around the waste was keyed into the underlying clay but was being overtopped and bypassed by incoming groundwater. The recently installed upgradient drain has significantly lowered groundwater elevations upgradient of the waste mass, demonstrating the IRM's effectiveness. Water level reductions have begun within the waste mass and will take time for the aquifer to equilibrate. The waste/source areas identified at the site were addressed by the IRMs described in Section 6.2.

#### Groundwater

Groundwater samples were collected from monitoring wells upgradient, sidegradient, and downgradient of the landfill that were installed both inside and outside of the current slurry wall. Samples were collected to assess groundwater conditions on-site. The results from the RI indicated that contamination of the groundwater exceeded the SCGs for VOCs, SVOCs, PCBs, and metals. One round of post IRM groundwater samples have been collected to date and are presented in Table 1 and Figures 3 through 5. Groundwater exceeded SCGs for VOCs (Figure 3), SVOCS (Figure 3), PCBs (Figure 4) and metals (Figure 5); the highest concentrations occur within the slurry wall. The focus of the RI and subsequent Feasibility Study (FS) was to evaluate the control of the upgradient groundwater. Controlling groundwater entering the site will limit, or eliminate, the migration of contaminants from the site. Since the installation of the upgradient drain, the upgradient groundwater elevation has been significantly reduced, demonstrating the drain is functioning as designed. Contaminant levels of VOCs, SVOCs, PCBs, and

metals are being monitored outside of the slurry wall to confirm the IRM effectiveness. Concentrations outside of the slurry wall are expected to decrease below the associated SCGs as the aquifer stabilizes.

Currently, VOC and SVOC exceedances occur mainly within the slurry wall. Minor exceedances are also present outside of the slurry wall in select locations sidegradient (both east and west) and downgradient of the landfill. The highest PCB exceedances in groundwater are located within the slurry wall in the southern portion of the landfill. Four locations outside of the slurry wall on the eastern side of the landfill exceed the SCG for PCBs. Various metals exceed their corresponding SCGs both within and outside of the slurry wall. Although antimony, selenium, and sodium occur upgradient of the landfill, these metals are also present in groundwater within the slurry wall. Antimony, iron, manganese, magnesium, and sodium are the most frequent metals to exceed their respective SCGs within the slurry wall. The highest emerging contaminant concentrations occur within the slurry wall.

Table 1 - Groundwater

| Detected Constituents   | d Constituents  Concentration Range Detected (ppb) <sup>a</sup> |        | Frequency Exceeding SCG |  |
|-------------------------|-----------------------------------------------------------------|--------|-------------------------|--|
| VOCs                    |                                                                 |        |                         |  |
| 1,1-Dichloroethane      | ND - 11                                                         | 5      | 2/33                    |  |
| 1,1-Dichloroethene      | ND - 7                                                          | 5      | 2/33                    |  |
| 1,2,4-Trimethylbenzene  | ND 6.9                                                          | 5      | 2/33                    |  |
| 1,2-Dichlorobenzene     | ND - 3.1                                                        | 3      | 1/33                    |  |
| 1,2-Dichloroethane      | ND - 0.88                                                       | 0.6    | 2/33                    |  |
| 1,3-Dichlorobenzene     | ND - 12                                                         | 3      | 2/33                    |  |
| 1,4-Dichlorobenzene     | ND - 45                                                         | 3      | 3/33                    |  |
| Acetone                 | ND - 120                                                        | 50     | 1/33                    |  |
| Benzene                 | ND - 16                                                         | 1      | 8/33                    |  |
| Chlorobenzene           | ND - 100                                                        | 5      | 5/33                    |  |
| cis-1,2-Dichloroethene  | ND - 180                                                        | 5      | 8/33                    |  |
| Dichlorodifluoromethane | ND - 8.1                                                        | 5      | 1/33                    |  |
| m&p-Xylene              | ND - 16                                                         | 5      | 2/33                    |  |
| N-Butylbenzene          | ND - 8.4                                                        | 5      | 1/33                    |  |
| Trichloroethene (TCE)   | ND - 270                                                        | 5      | 5/33                    |  |
| Vinyl Chloride          | ND - 12                                                         | 2      | 7/33                    |  |
| Xylene                  | ND - 16                                                         | 1      | 2/33                    |  |
| SVOCs                   |                                                                 |        |                         |  |
| Phenol                  | ND - 48                                                         | 1      | 3/33                    |  |
| Inorganics              |                                                                 |        |                         |  |
| Antimony                | ND - 22                                                         | 3      | 26/33                   |  |
| Barium                  | 15 - 1,100                                                      | 1,000  | 1/33                    |  |
| Iron                    | 25 - 62,000                                                     | 300    | 26/33                   |  |
| Magnesium               | 87 - 92,000                                                     | 35,000 | 12/33                   |  |
| Manganese               | 3.8 - 6,700                                                     | 300    | 18/33                   |  |
| Selenium                | ND - 21                                                         | 10     | 11/33                   |  |
| Sodium                  | 3,900 - 200,000                                                 | 20,000 | 27/33                   |  |
| Pesticides/PCBs         | •                                                               |        | •                       |  |
| Total PCB               | ND - 97                                                         | 0.09   | 15/33                   |  |
| Aroclor-1221            | ND - 28                                                         | 0.09   | 1/33                    |  |
| Aroclor-1242            | ND - 97                                                         | 0.09   | 13/33                   |  |
| Aroclor-1260            | ND - 0.33                                                       | 0.09   | 1/33                    |  |

| Detected Constituents               | Concentration Range<br>Detected (ppb) <sup>a</sup> | SCG <sup>b</sup><br>(ppb) | Frequency Exceeding SCG |
|-------------------------------------|----------------------------------------------------|---------------------------|-------------------------|
| Aroclor-1248                        | ND - 0.46                                          | 0.09                      | 1/33                    |
| <b>Emerging Contaminants</b>        |                                                    |                           |                         |
| 1,4-Dioxane                         | ND - 67                                            | 0.35                      | 4/24                    |
| Perfluorooctanesulfonic acid (PFOS) | 0.00042 - 0.54                                     | 0.0027                    | 4/5                     |
| Perfluorooctanoic acid (PFOA)       | 0.0032 - 1.1                                       | 0.0067                    | 4/5                     |

a - ppb: parts per billion, which is equivalent to micrograms per liter, ug/L, in water.

Groundwater contamination identified during the RI was addressed during the IRMs described in Section 6.2. As groundwater contamination is present within the landfill waste mass, continued monitoring through site management is required.

#### Soil

Five soil samples were collected during the installation of the new triplet monitoring wells in June and July 2019 both inside and outside the slurry wall. Samples were collected from depths between 17 and 72 feet below ground surface to assess soil contamination impacts to groundwater in the three aquifer units present below the site. Soil samples were analyzed for VOCs and PCBs. The results indicate that soil at the site exceed the unrestricted soil cleanup objective (SCO) for VOCs and PCBs (Figure 6; Table 2). Acetone exceeded the unrestricted soil cleanup objective (SCO) in one sample located inside the slurry wall but did not exceed the commercial use SCO. PCBs were detected above the unrestricted soil cleanup objectives in all five samples at concentrations ranging from 0.28 mg/kg to 162 mg/kg. However, only two samples exceeded the commercial use SCO; both samples were located within the slurry wall.

Table 2 - Soil

| Detected Constituents | Concentration<br>Range Detected<br>(ppm) <sup>a</sup> | Unrestricted SCG <sup>b</sup> (ppm) | Frequency Exceeding Unrestricted SCG | Restricted Use SCG <sup>c</sup> (ppm) | Frequency<br>Exceeding<br>Restricted<br>SCG |
|-----------------------|-------------------------------------------------------|-------------------------------------|--------------------------------------|---------------------------------------|---------------------------------------------|
| VOCs                  |                                                       |                                     |                                      |                                       |                                             |
| Acetone               | ND-0.13                                               | 0.05                                | 1/5                                  | 500                                   | 0/5                                         |
| Pesticides/PCBs       |                                                       |                                     |                                      |                                       |                                             |
| PCB-1232              | ND-150                                                | 0.1                                 | 4/5                                  | 1                                     | 2/5                                         |
| PCB-1254              | ND-12                                                 | 0.1                                 | 2/5                                  | 1                                     | 1/5                                         |
| Total PCBs            | 0.28-162                                              | 0.1                                 | 5/5                                  | 1                                     | 2/5                                         |

a - ppm: parts per million, which is equivalent to milligrams per kilogram, mg/kg, in soil;

b - SCG: Standard Criteria or Guidance - Ambient Water Quality Standards and Guidance Values (TOGs 1.1.1) and 6 NYCRR Part 703, Surface water and Groundwater Quality Standards, and Part 5 of the New York State Sanitary Code (10 NYCRR Part 5).

b - SCG: Part 375-6.8(a), Unrestricted Soil Cleanup Objectives.

c - SCG: Part 375-6.8(b), Restricted Use Soil Cleanup Objectives for the Protection of Public Health for Commercial Use, unless otherwise noted.

d - SCG: Part 375-6.8(b), Restricted Use Soil Cleanup Objectives for the Protection of Groundwater.

Based on the findings of the Remedial Investigation, the past disposal of hazardous waste has resulted in the contamination of soil by VOCs and PCBs and has been addressed during the IRM described in Section 6.2. Soil exceedances above the commercial use SCO occur within the slurry wall and at depth, limiting the exposure pathway. Therefore, continued site management is required to monitor impacts, if any, to groundwater.

#### **Surface Water**

Four surface water samples were collected from Cutter Pond and two surface water samples from Feeder Canal (Figure 7). Samples were analyzed for VOCs, SVOCs, PCBs, and TAL metals (Table 3). There were no exceedances of VOCs, SVOCs, or PCBs in any of the six samples. Iron, manganese, and sodium exceedances are similar to concentrations present upgradient of the landfill, indicating iron, manganese, and sodium are naturally high in the underlying aquifer.

Table 3 - Surface Water

| abic 5 - Bullace Water             |                                                 |                        |                         |  |  |  |
|------------------------------------|-------------------------------------------------|------------------------|-------------------------|--|--|--|
| Detected Constituents              | Concentration Range Detected (ppb) <sup>a</sup> | SCG <sup>b</sup> (ppb) | Frequency Exceeding SCG |  |  |  |
| VOCs                               | VOCs                                            |                        |                         |  |  |  |
|                                    | No exceedances for VOCs                         |                        |                         |  |  |  |
| SVOCs                              |                                                 |                        |                         |  |  |  |
| No exceedances for SVOCs           |                                                 |                        |                         |  |  |  |
| Inorganics                         |                                                 |                        |                         |  |  |  |
| Iron                               | 210 - 1400                                      | 300                    | 4/6                     |  |  |  |
| Manganese                          | 14 - 540                                        | 300                    | 2/6                     |  |  |  |
| Sodium                             | 23,000 - 33,000                                 | 20,000                 | 6/6                     |  |  |  |
| Pesticides/PCBs                    |                                                 |                        |                         |  |  |  |
| No exceedances for Pesticides/PCBs |                                                 |                        |                         |  |  |  |

a - ppb: parts per billion, which is equivalent to micrograms per liter, ug/L, in water.

Based on the findings of the RI, the past disposal of hazardous waste has resulted in the contamination of sediments by iron, manganese, and sodium and are associated with landfill disposal activities. However, no remedial alternatives were evaluated for surface water, since contamination in surface water at the site only slightly exceeds the SCGs for metals and are naturally occurring.

#### **Sediments**

Sediment samples were collected in Cutters Pond co-located with surface water samples (Figure 7). Samples were collected to access the potential for impacts to pond from the site after the completion of the IRMs. The results indicate that sediment in Cutter's Pond slightly exceed the Department's SCGs for sediments for chromium, copper, and nickel (Table 4).

b-SCG: Ambient Water Quality Standards and Guidance Values (TOGs 1.1.1) and 6 NYCRR Part 703: Surface Water and Groundwater Quality Standards.

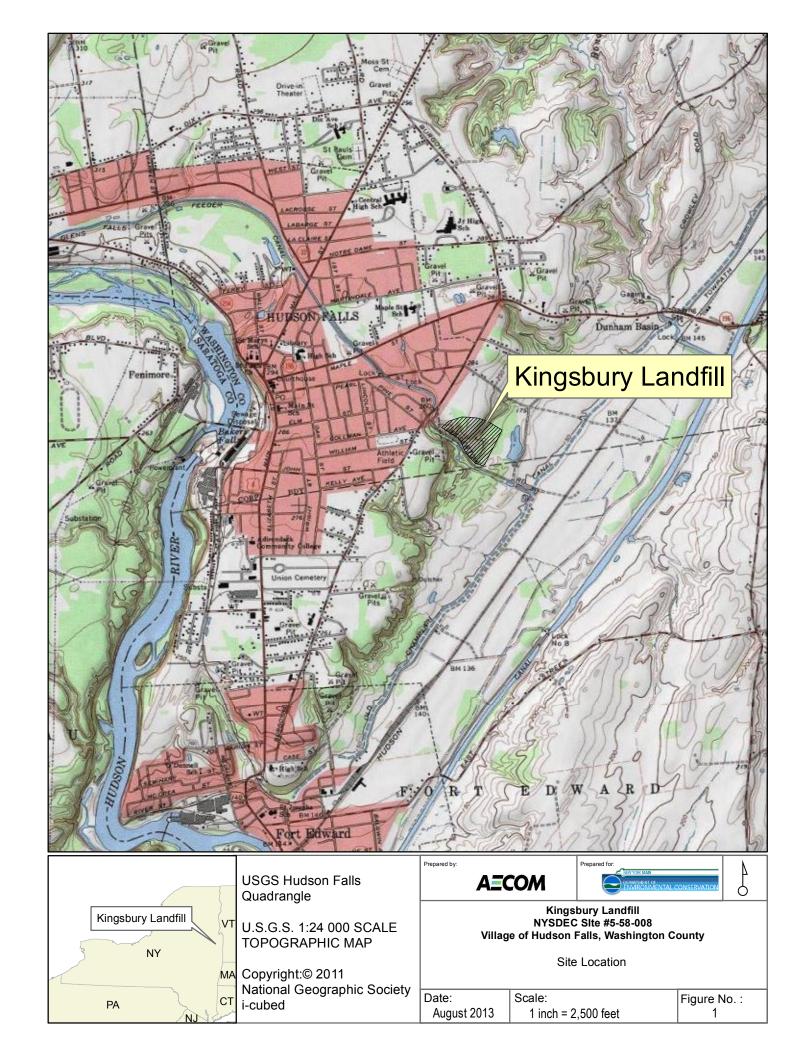
**Table 4 - Sediments** 

| <u> </u>                           |                                                    |                                   |                            |  |  |
|------------------------------------|----------------------------------------------------|-----------------------------------|----------------------------|--|--|
| Detected Constituents              | Concentration Range<br>Detected (ppm) <sup>a</sup> | SCG <sup>b</sup> Class A<br>(ppm) | Frequency<br>Exceeding SCG |  |  |
| VOCs                               |                                                    |                                   |                            |  |  |
| No Exceedances for VOCs            |                                                    |                                   |                            |  |  |
| SVOCs                              |                                                    |                                   |                            |  |  |
| No Exceedances for SVOCs           |                                                    |                                   |                            |  |  |
| Inorganics                         |                                                    |                                   |                            |  |  |
| Chromium                           | 3 - 43                                             | <43                               | 1/4                        |  |  |
| Copper                             | 2.1 - 35                                           | <32                               | 1/4                        |  |  |
| Nickel                             | 2.9 - 49 <23 2/4                                   |                                   |                            |  |  |
| Pesticides/PCBs                    |                                                    |                                   |                            |  |  |
| No Exceedances for Pesticides/PCBs |                                                    |                                   |                            |  |  |

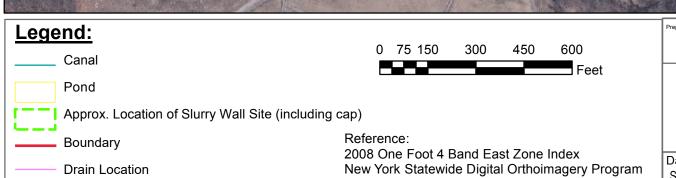
a - ppm: parts per million, which is equivalent to milligrams per kilogram, mg/kg, in sediment;

Based on the findings of the RI, the past disposal of hazardous waste has resulted in the contamination of sediments by chromium, copper, and nickel which are associated with landfill disposal activities. However, no remedial alternatives were evaluated for sediment, since contamination in sediment at the site only slightly exceeds the SCGs for metals.

b - SCG: Class A: The Department's "Technical Guidance for Screening Contaminated Sediments."







**AECOM** 

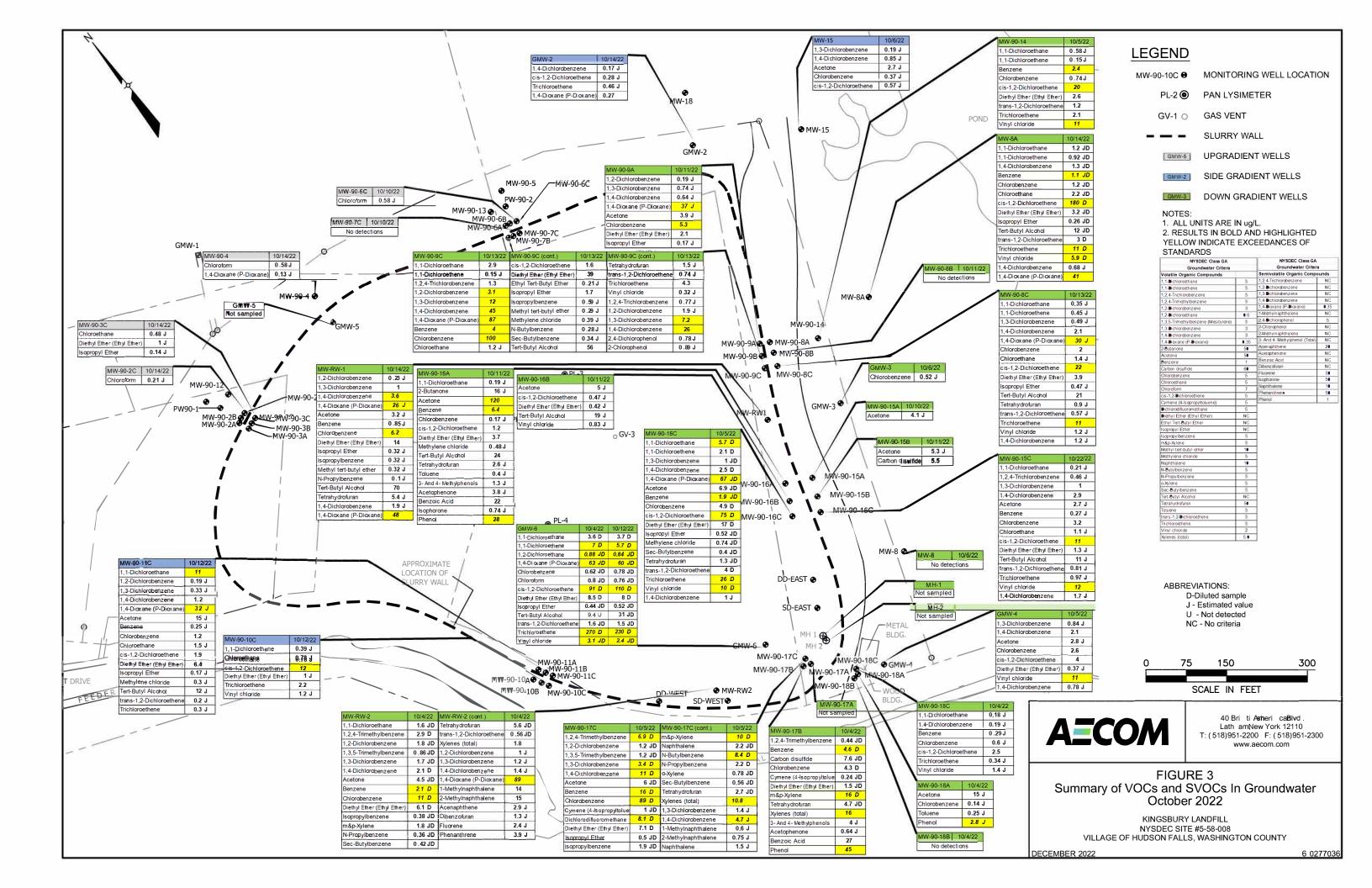


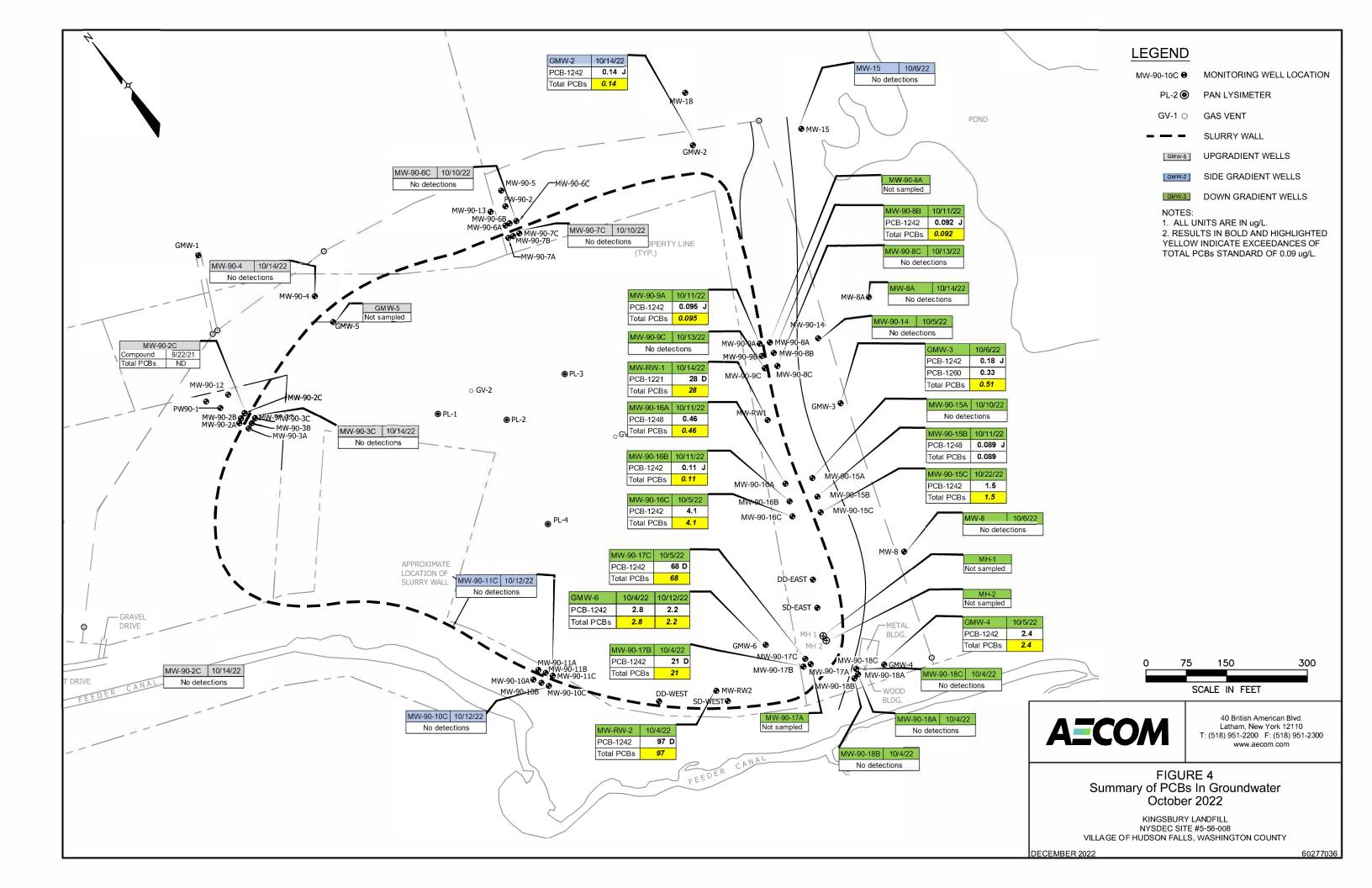


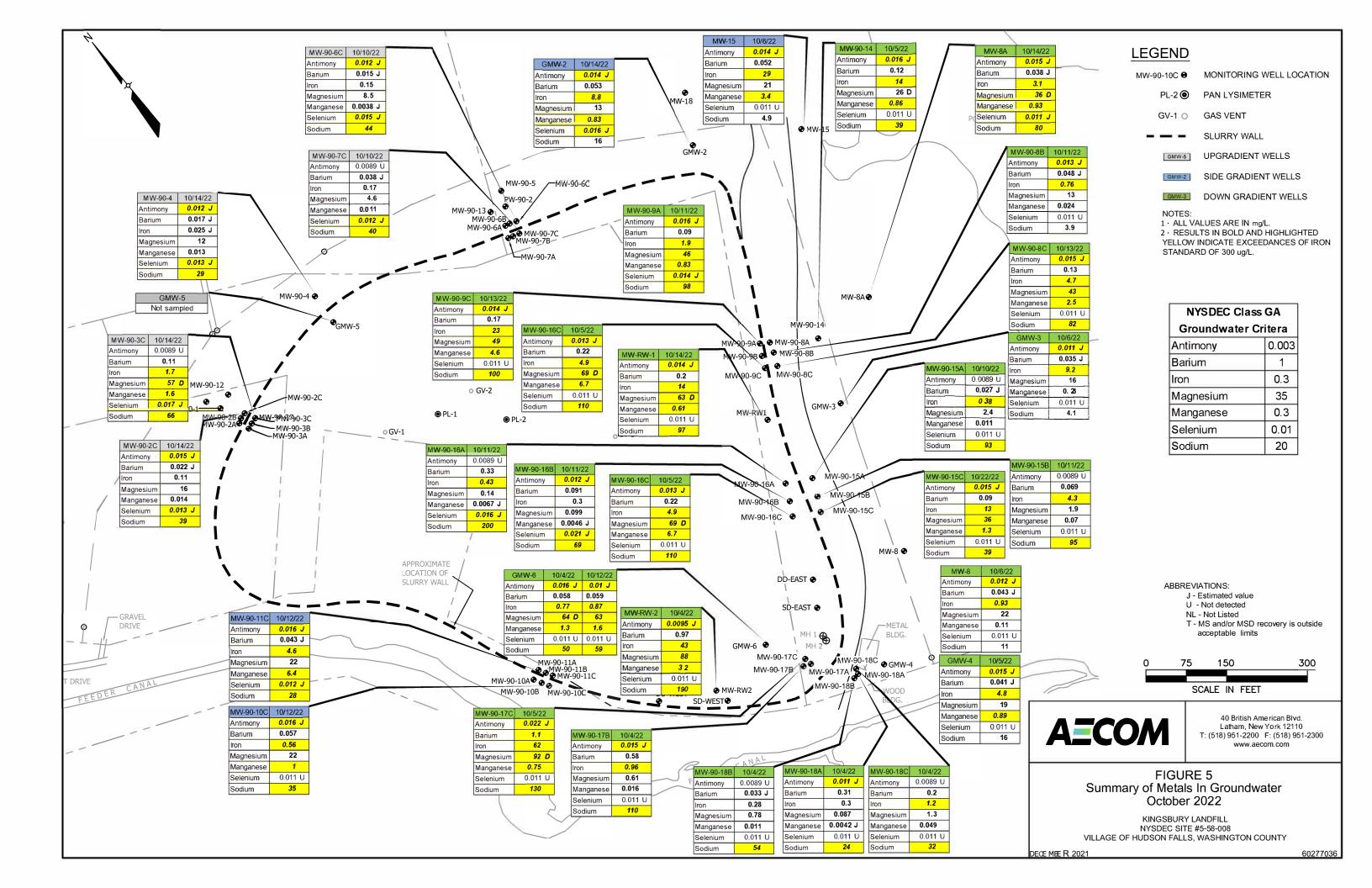
Kingsbury Landfill NYSDEC SIte #5-58-008 Village of Hudson Falls, Washington County

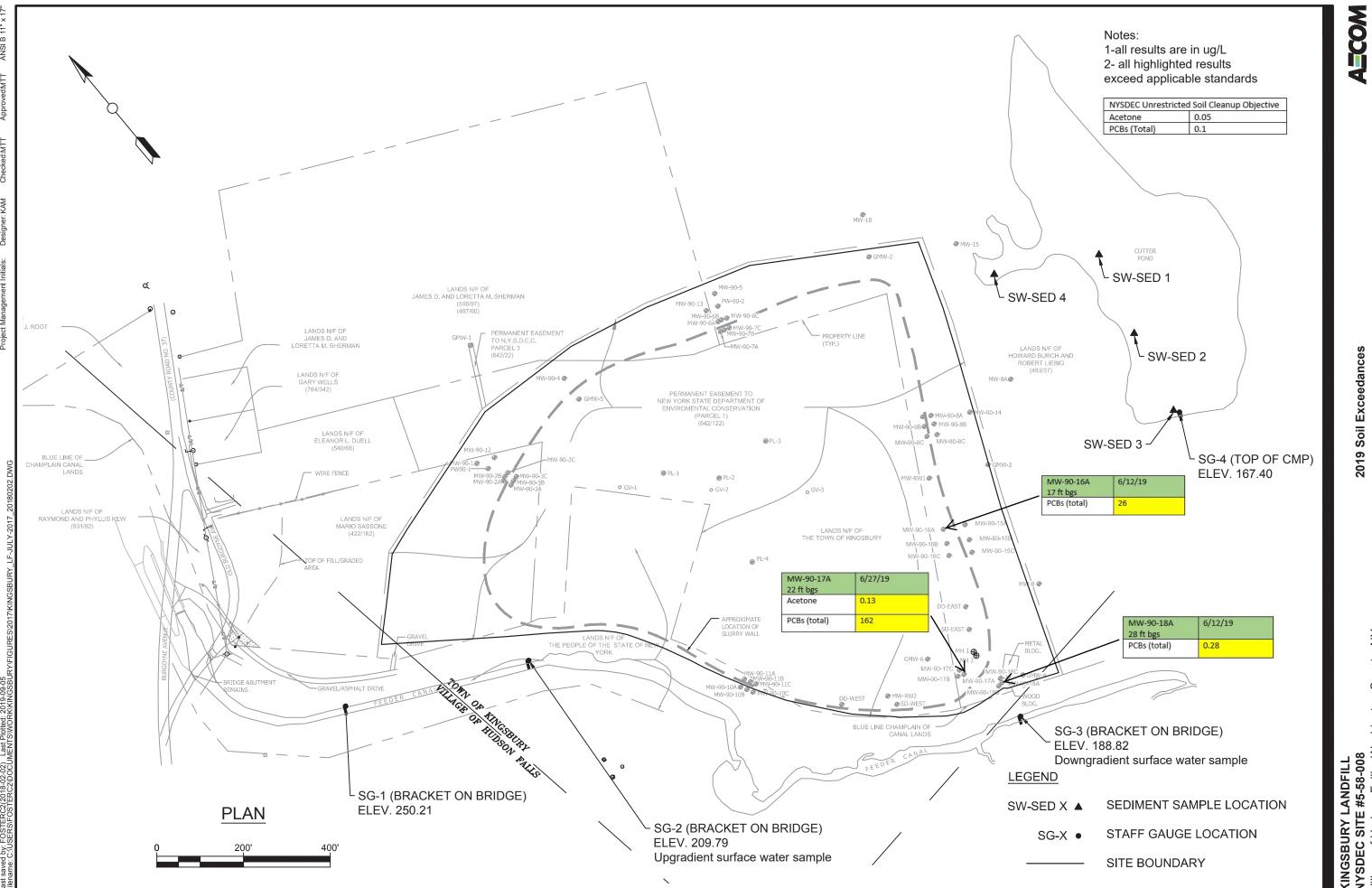
Kingsbury Landfill Site

Figure No. : Scale: Date: 1 inch = 300 feet September 2015









Soil Exceedances

FIGURE 6

KINGSBURY LANDFILL
NYSDEC SITE #5-58-008
Village of Hudson Fallls, Washington County, NY
Project No.: 60277036 Date: 02-02-2018

A=COM FIGURE 7

Surface and Sediment Sample Locations

KINGSBURY LANDFILL
NYSDEC SITE #5-58-008
Village of Hudson Fallls, Washington County, NY
Project No.: 60277036 Date: 02-02-2018

# **APPENDIX A**

**Responsiveness Summary** 

## RESPONSIVENESS SUMMARY

Kingsbury Landfill
Operable Unit No. 01: On-Site Contamination
State Superfund Project
Town of Kingsbury, Washington County, New York
Site No. 558008

The Proposed Remedial Action Plan (PRAP) for the Kingsbury Landfill site was prepared by the New York State Department of Environmental Conservation (the Department) in consultation with the New York State Department of Health (NYSDOH) and was issued to the document repositories on 03/01/2023. The PRAP outlined the remedial measure proposed for the contaminated soil, sediment, surface water, and groundwater at the Kingsbury Landfill site.

The release of the PRAP was announced by sending a notice to the public contact list, informing the public of the opportunity to comment on the proposed remedy.

A public meeting was held on March 13, 2023, which included a presentation of the remedial investigation feasibility study (RI/FS) for the Kingsbury Landfill as well as a discussion of the proposed remedy. The meeting provided an opportunity for citizens to discuss their concerns, ask questions and comment on the proposed remedy. These comments have become part of the Administrative Record for this site. The public comment period for the PRAP ended on March 30, 2023.

This responsiveness summary responds to all questions and comments raised during the public comment period. No comments were received during the public comment period.

# **APPENDIX B**

# **Administrative Record**

# **Administrative Record**

Kingsbury Landfill
Operable Unit No. 01: On-Site Contamination
State Superfund Project
Town of Kingsbury, Washington County, New York
Site No. 558008

- 1. Proposed Remedial Action Plan for the Kingsbury Landfill site, Operable Unit No. 01, dated March 2023 prepared by the Department.
- 2. SSF Referral Memorandum, dated May 2020 for a state-funded Remedial Program
- 3. Seven Sites Agreement Between General Electric and NYSDEC to Clean Up Seven PCB contaminated Sites in New York State, dated September 1980, prepared by the Department.
- 4. Kingsbury Fort Edward Sites, Engineering Report (Revised), dated November 1982, prepared by O'Brien & Gere Engineers, Inc.
- 5. Engineering Report, dated July 1990, prepared by Blasland & Bouck Engineers, P.C.
- 6. Call Out Completion Report, Kingsbury Landfill Site, Brown Pond Interim Remedial Action, dated August 2012 prepared by the Department.
- 7. Record of Decision, Operable Unit Number 02: Off-Site Soils and Sediment, dated March 2014 prepared by the Department.
- 8. Final Remedial Systems Optimization Report, dated November 2014 prepared by AECOM.
- 9. Site Management Plan, dated November 2015 prepared by AECOM.
- 10. Summary of Remedial Investigations and Focused Feasibility Study Report, dated February 2023 prepared by AECOM.
- 11. Construction Completion Report for the Interim Remedial Measure, dated March 2023, prepared by AECOM.
- 12. Letter dated February 27, 2023 from Christine Vooris, NYSDOH