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Cc: [Paul Gallagher](#)
Subject: Former Dennison/Monarch System Site, Site 336090 - OU02 FER
Date: Monday, October 16, 2023 1:34:49 PM
Attachments: [2023.10.12 OU02.FER_58300.00.pdf](#)
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John –

On behalf of Avery Dennison Corporation, please find attached the Operable Unit 2 (OU02) Final Engineering Report, which incorporates NYSDEC’s recent comments, for the Former Dennison/Monarch System Site in New Windsor, NY.

Please let me know if you have any questions.

Best Regards,

George



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FINAL ENGINEERING REPORT
Former Dennison/Monarch Systems Site
Operable Unit 02

Prepared for:

Avery Dennison
8080 Norton Parkway
Mentor, Ohio 44060

Project Number: 58300.00

October 2023

Prepared by:

VHB Engineering, Surveying, Landscape Architecture and Geology, P.C.
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Suite 715
New York, New York 10119



CERTIFICATION STATEMENT

I, George Lester, am currently a registered professional engineer licensed by the State of New York, I had primary direct responsibility for implementation of the remedial program activities, and I certify that the remedy was implemented in substantial conformance with the Department-approved Decision Document.

I certify that the data submitted to the Department with this Final Engineering Report demonstrates that the remediation requirements set forth in the Decision Document and in all applicable statutes and regulations have been or will be achieved in accordance with the time frames, if any, established for the remedy.

I certify that a Site Management Plan has been submitted for the continual and proper operation, maintenance, and monitoring of the Site, including the proper maintenance of all remaining monitoring wells, and that such plan has been approved by the Department.

I certify that all documents generated in support of this report have been submitted in accordance with the DER's electronic submission protocols and have been accepted by the Department.

I certify that all data generated in support of this report have been submitted in accordance with the Department's electronic data deliverable and have been accepted by the Department.

I certify that all information and statements in this certification form are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law. I, George Lester, of VHB Engineering, Surveying, Landscape Architecture and Geology, P.C., am certifying as Owner's Designated Site Representative for the site.



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APPENDICES

- Appendix A Operable Unit 02 Decision Document
Appendix B Operable Unit 02 Site Photographs – October 2023

LIST OF ACRONYMS

AAR	Alternatives Analysis Report
ADC	Avery Dennison Corporation
COCs	Constituents of Concern
DD	Decision Document
DEC	Department of Environmental Conservation
DER	Division of Environmental Remediation
FER	Final Engineering Report
HASP	Health and Safety Plan
ICs	Institutional Controls
JCO	The Johnson Company
MNA	Monitored Natural Attenuation
NYCRR	New York Codes, Rules, and Regulations
NYS	New York State
NYSDEC	New York State Department of Environmental Conservation
OU	Operable Unit
QAPP	Quality Assurance Project Plan
RA	Remedial Action
RAO	Remedial Action Objective
RAWP	Remedial Action Work Plan
SCO	Soil Cleanup Objectives
SMP	Site Management Plan
1,1,1-TCA	1,1,1-trichloroethane
TCE	trichloroethene

1.0 BACKGROUND & SITE DESCRIPTION

This Final Engineering Report (FER) is a required element of the remedial program for Operable Unit 02 (OU02) of the Former Dennison/Monarch Systems Site (NYSDEC Site No. 336090; the Site), located in New Windsor, Orange County, New York. This FER is prepared in accordance with the guidelines set forth in New York State Department of Environmental Conservation's (NYSDEC's) DER-10 *Technical Guidance for Site Investigation and Remediation* dated May 3, 2010 (NYSDEC, 2010), and following discussion with NYSDEC staff. This FER was prepared on behalf of Avery Dennison Corporation (ADC) by its NYSDEC-approved consultant, VHB Engineering, Surveying, Landscape Architecture and Geology, P.C. (VHB).

This FER addresses OU02, only. Operable Unit 01 (OU01) is defined as 15-21 Ruscitti Road in the Town of New Windsor, Orange County, New York and is identified on the Town of New Windsor tax maps as parcel number 9-1-52. OU01 is subject to an independent Alternative Analysis Report and Remedial Action Work Plan – the OU01 AAR/RAWP (JCO, 2013), approved by NYSDEC on April 7, 2014; an independent Decision Document (DD) – the OU01 DD, issued by NYSDEC on April 7, 2014 (NYSDEC, 2014); and FER – the OU01 FER (submitted to NYSDEC for review in February 2023).

The OU02 DD (included as **Appendix A**) was issued based on the findings presented in the NYSDEC-approved July 2019 Alternatives Analysis Report for OU02 (VHB, 2019; OU02 AAR) and prescribes the OU02 Remedial Action (RA) as monitored natural attenuation (MNA). The OU02 DD defines the OU02 constituents of concern (COCs) as trichloroethene (TCE) and 1,1,1-trichloroethane (1,1,1-TCA). The OU02 COCs exceed the applicable Standards, Criteria, and Guidance (SCGs) for groundwater, only. The OU02 Site Management Plan (OU02 SMP) was submitted to NYSDEC in August 2023 and approved on September 22, 2023 – the OU02 SMP outlines the ongoing remedial monitoring requirements for the MNA remedy.

OU02 is located to the northeast of OU01 in New Windsor, New York – see general location in **Figure 1-1**, and is defined as the downgradient and remnant portion of the Facility groundwater plume (Facility Plume) resulting from a source area within OU01 that exceeds the NYSDEC Class GA groundwater standard for COCs; representative photographs are accompanied as **Appendix B**. **Figure 1-2** presents the OU02 boundary as provided to NYSDEC on June 26, 2020, which was established based on November 2019 OU02 monitoring data. The OU02 boundary was initially defined in the March 2014 OU01 DD based on data collected prior to 2013. The NYSDEC-approved OU01 AAR/RAWP identified and confirmed the existence of South Plume #1 and South Plume #2, which are groundwater contaminant plumes that originate off-Site and/or up-gradient/cross-gradient of OU01 and migrate into the Little Falls Ponds property and comeingle with a portion of the Facility Plume in OU02. The respective sources of South Plume #1 and South Plume #2 have not yet been reported to ADC by NYSDEC or the responsible parties and do not appear to have been remediated or isolated. This FER does not address South Plume #1 or South Plume #2.

The ongoing natural plume attenuation and effective source isolation accomplished by the OU01 RA has resulted in a reduction of the OU02 boundary. The OU02 boundary is expected to continue to shrink as the groundwater concentrations of COCs in OU02 continue to decrease; as described in the OU02 SMP, the OU02 boundary definition will be reassessed in each Periodic Review Report (PRR).

Note: ADC is not and has never been the owner of any of the real property that comprises the lands within the past or current boundary of OU02, but ADC does have the right to access that portion of the OU02 site that is owned by the Town of New Windsor, NY and that portion of the OU02 site that is owned by A&R Concrete Products. Access has been secured for the "purposes of inspection, monitoring, and the installation, maintenance, repair, replacement and removal of such facilities as [ADC] and/or DEC may

require to conduct environmental investigations over, at, on or under the [subject] Premises" until such time that ADC "secures from the DEC or any governmental agency with remedial action authority over [OU01] a 'no further action letter' and/or written documentation that ADC has investigated the [subject premises] to the satisfaction of such agency." Copies of the subject agreements are included in the OU02 SMP.

2.0 SUMMARY OF SITE REMEDY

2.1 Remedial Action Objectives

Based on the results of the remedial investigation, the following Remedial Action Objectives (RAOs) were identified for OU02.

2.1.1 Groundwater RAOs

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.

2.1.2 Soil Vapor RAOs

RAOs for Public Health Protection

- Mitigate impacts to public health resulting from existing, or the potential for, soil vapor intrusion into buildings at OU02.

2.2 Description of Selected Remedy

OU02 was remediated in accordance with the remedy selected by the NYSDEC in the OU02 DD (**Appendix A**) dated March 10, 2021 (NYSDEC, 2021). The factors considered during the selection of the RA are those listed in 6NYCRR 375-1.8. The NYSDEC-selected OU02 RA is MNA. OU02 groundwater will be monitored for decreasing concentration trends of the OU02 COCs: TCE and 1,1,1-TCA. The monitoring and reporting requirements for the OU02 RA are specified in the OU02 SMP.

3.0 INTERIM REMEDIAL MEASURES, OPERABLE UNITS, AND REMEDIAL CONTRACTS

The remedy for OU02 was performed as a single project, and no interim remedial measures or separate construction contracts were performed.

3.1 Operable Units

The Site is comprised of two Operable Units, OU01 and OU02. Each is subject to independent Certificates of Completion and therefore independent remedial measures. This FER is for the OU02 RA only.

4.0 DESCRIPTION OF REMEDIAL ACTIONS PERFORMED

The OU02 RA was implemented in accordance with the OU02 DD (**Appendix A**) prepared by NYSDEC in March 2021 (NYSDEC, 2021) for the New Windsor Former Dennison/Monarch Systems Site.

The NYSDEC-selected OU02 RA is MNA. OU02 groundwater will be monitored for decreasing concentration trends of the OU02 COCs: TCE and 1,1,1-TCA. The monitoring and reporting requirements for the OU02 RA are specified in the OU02 SMP.

4.1 Governing Documents

4.1.1 Site Management Plan

The OU02 SMP describes the ongoing monitoring and reporting requirements for the institutional controls required for the OU02 RA, including semi-annual groundwater monitoring and visual inspections of the OU02 property.

4.1.2 Site Specific Health & Safety Plan

The OU02 Site Specific Health & Safety Plan (OU02 HASP) is included in the OU02 SMP and addresses the health and safety requirements for the MNA remedy.

All remedial work performed under this RA was in full compliance with governmental requirements, including site and worker safety requirements mandated by Federal Occupational Safety and Health Administration.

The HASP was complied with for all remedial and invasive work performed at OU02.

4.1.3 Quality Assurance Project Plan

A Quality Assurance Project Plan (QAPP) is included in the OU02 SMP for monitoring associated with the MNA remedy. The QAPP describes the specific policies, objectives, organization, functional activities and quality assurance/ quality control activities designed to achieve the project data quality objectives.

4.2 Contamination Remaining at the Site

As stated in the OU02 DD (**Appendix A**), soil samples collected at OU02 did not exceed the unrestricted use soil cleanup objectives. The OU02 site boundary is defined as the downgradient and remnant portion of the Facility groundwater plume (Facility Plume) resulting from a source area within OU01 that exceeds the NYSDEC Class GA groundwater standard for COCs. Notwithstanding the current absence of groundwater use on OU02, per the NYSDEC's OU02 DD (**Appendix A**), the use of groundwater as a source of potable or process water without necessary water quality treatment as determined by NYS Department of Health (DOH) or Orange County DOH is prohibited. Also, the installation of a groundwater supply well will require approval by the Town of New Windsor and a building permit as stated in the Town of New Windsor Part II of General Legislation, section 107.4D.5e. ADC has no authority to initiate the use of OU02 groundwater for any purpose and will not attempt to do any of the above.

4.3 Institutional Controls

Since contaminated groundwater remains at the site, Institutional Controls (ICs) are required to protect human health and the environment. Long-term management of these and residual contamination will be performed under the OU02 SMP as approved by the NYSDEC. This OU02 SMP presents the monitoring and reporting requirements for the institutional controls required for the OU02 RA, including semi-annual groundwater monitoring and visual inspections of the OU02 property.

5.0 REFERENCES

JCO, 2013. Alternatives Analysis Report and Remedial Action Work Plan, Former Dennison/Monarch Systems Site, New Windsor, NY. The Johnson Company, May 23.

NYSDEC, 2010. DER-10 Technical Guidance for Site Investigation and Remediation. New York State Department of Environmental Conservation, May 3.

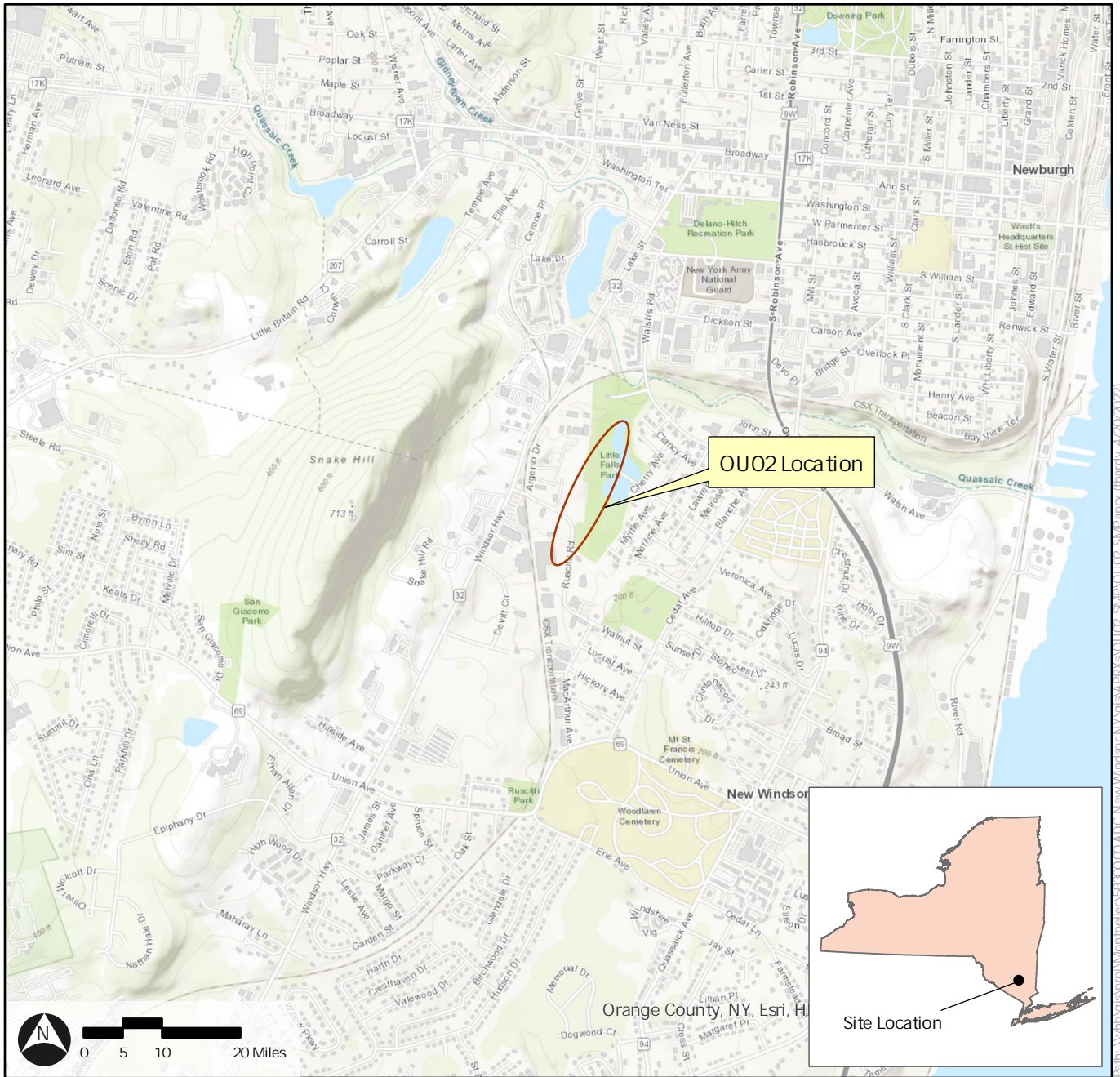
NYSDEC, 2014. Decision Document, Dennison Monarch Systems Facility, Operable Unit Number 01: Remedial Program, On-Site Voluntary Cleanup Program, New Windsor, Orange County, Site No. V00135. New York State Department of Environmental Conservation, March.

NYSDEC, 2021. Decision Document, Dennison Monarch Systems Facility, Operable Unit Number 02: Remedial Program, On-Site Voluntary Cleanup Program, New Windsor, Orange County, Site No. 336090. New York State Department of Environmental Conservation, March.

VHB, 2019. Alternative Analysis Report, Former Dennison/Monarch Systems Site Operable Unit 02, New Windsor, NY. VHB, July 2019.

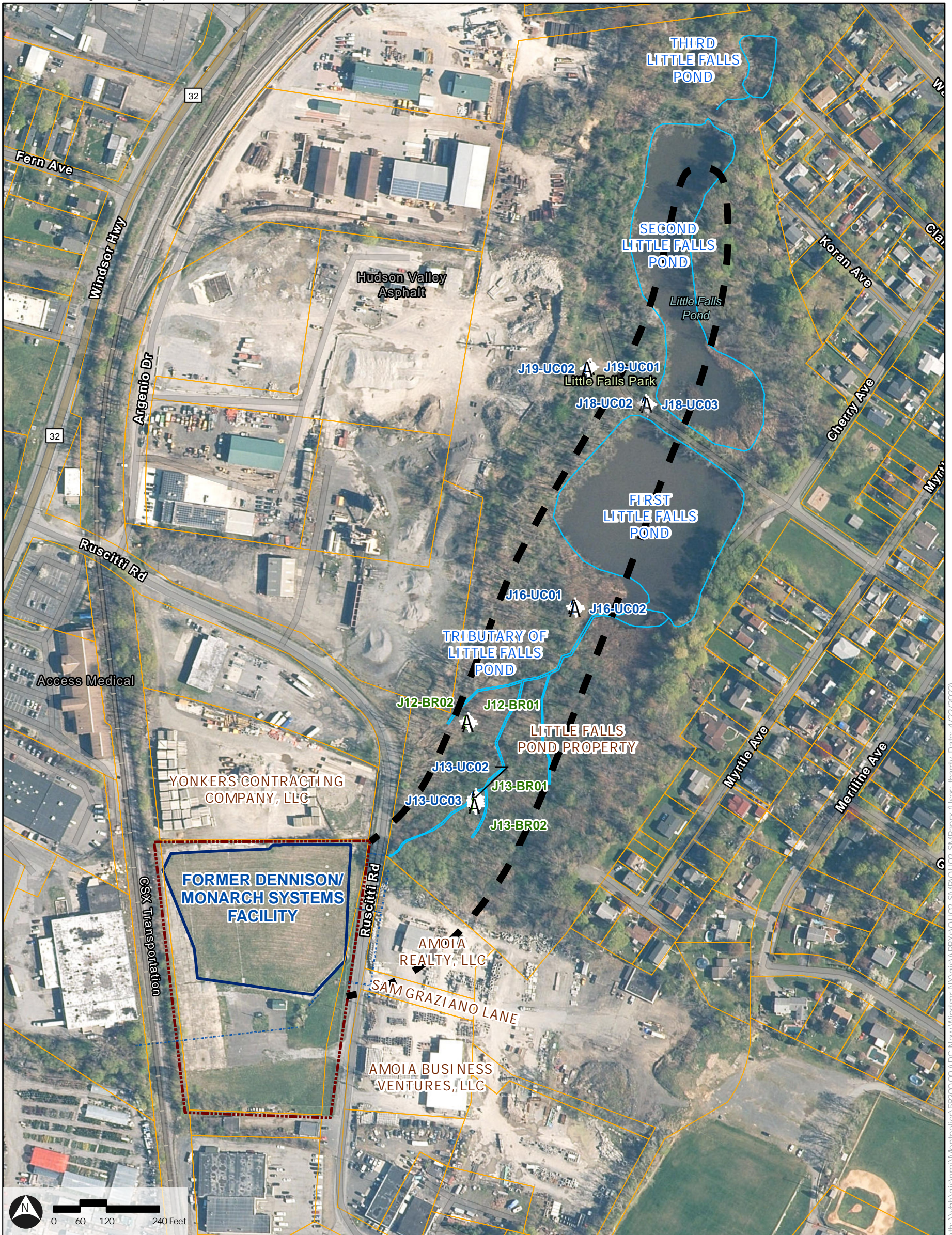
FIGURES

Figure 1-1: Site Location Map
Former Dennison/Monarch Systems Facility | New Windsor, New York
OU02 Final Engineering Report

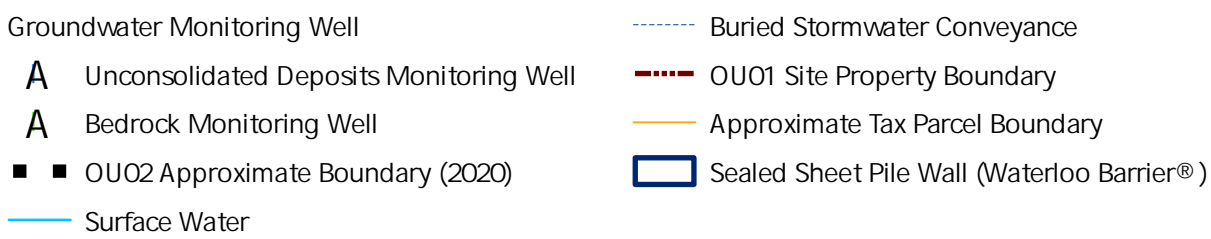


Source: Base map from USGS 7.5 Minute Topographic Quadrangles Cornwall-on-Hudson and Newburgh, 2013

Figure 1-2: OU02 Boundary And Monitoring Locations
 Former Dennison/Monarch Systems Site | New Windsor, New York
 OU02 Final Engineering Report



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APPENDICES



A

Appendix A: Operable Unit 02 Decision Document

DECISION DOCUMENT

Dennison Monarch Systems Facility
Operable Unit Number 02: Remedial Program Off-Site
State Superfund Project
New Windsor, Orange County
Site No. 336090
March 2021



**Department of
Environmental
Conservation**

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

DECLARATION STATEMENT - DECISION DOCUMENT

Dennison Monarch Systems Facility
Operable Unit Number: 02
State Superfund Project
New Windsor, Orange County
Site No. 336090
March 2021

Statement of Purpose and Basis

This document presents the remedy for Operable Unit Number: 02: Remedial Program Off-Site of the Dennison Monarch Systems Facility site, a state superfund 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: 02 of the Dennison Monarch Systems Facility site and the public's input to the proposed remedy presented by the Department.

Description of Selected Remedy

The elements of the selected remedy are as follows:

1. A remedial design program will be implemented to provide the details necessary for the 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. Natural Attenuation with Monitoring

Groundwater will be addressed through natural attenuation with monitoring. Groundwater will be monitored for continuing decreasing trends in levels of site-related contamination. It is anticipated that contamination will decrease by an order of magnitude within 10 years. Reports of the attenuation will be provided every two years. The need for active remediation will be re-assessed by the Department if it appears that natural processes alone will not adequately reduce the contamination. The alternative remedial action selected would depend on the information collected, but it is currently anticipated to be enhanced in-situ bioremediation through biostimulation.

3. Site Management Plan

a. The Site Management Plan for OU1 will be updated to include OU2 site management activities, which include the following:

- As a contingent remedial action, enhanced in-situ bioremediation will be employed should it be necessary based on long-term groundwater monitoring;
- The use of groundwater as a source of potable or process water without necessary water quality treatment as determined by the New York State Department of Health or Orange County Department of Health is prohibited. Also, the installation of a groundwater supply well will require approval by the Town of New Windsor building permit as stated in the Town of Windsor Part II of General Legislation, section 107.4D.5e;
- The steps necessary for the periodic review and certification of the institutional and/or engineering controls; and
- A provision for evaluation of the potential for soil vapor intrusion for any occupied buildings on OU2, including provision for implementing actions recommended to address exposures related to soil vapor intrusion.

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

- monitoring of groundwater to assess the performance and effectiveness of the remedy;
- a schedule of monitoring and frequency of submittals to the Department; and
- monitoring for vapor intrusion for any buildings on OU2 as may be required by the Institutional and Engineering Control Plan discussed above.

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.

3/10/2021

Janet Brown

Date

Janet Brown, Director
Remedial Bureau C

DECISION DOCUMENT

Dennison Monarch Systems Facility
New Windsor, Orange County
Site No. 336090
March 2021

SECTION 1: SUMMARY AND PURPOSE

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

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

SECTION 2: CITIZEN PARTICIPATION

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

DECInfo Locator - Web Application/On-line repository
<https://www.dec.ny.gov/data/DecDocs/336090/> and
<https://www.dec.ny.gov/data/DecDocs/V00135/>

Newburgh Free Library
124 Grand St
Newburgh, NY 12550
Phone: (845) 563-3600

NYSDEC
Attn: John Spellman
625 Broadway
Albany, NY 12233
Phone: (518) 402-9662

Receive Site Citizen Participation Information By Email

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

SECTION 3: SITE DESCRIPTION AND HISTORY

Location: The Dennison Monarch Systems site is located at 15-21 Ruscutti Road in the Town of New Windsor near the City of Newburgh. The 5.8-acre site is situated along a commercial and industrial corridor in a suburban area. The site is about one mile south of the intersection of State Routes 32 and 17K.

Site Features: The site has no occupied structures. As part of the site remediation, the site was graded with a gentle slope downward to the east to provide drainage away from the vegetated cap. The site is fenced to restrict access.

Current Zoning and Land Use: The site is currently vacant and is zoned planned industrial, which is defined as encouraging a full range of non-nuisance environmentally sensitive industrial activities. The surrounding land use currently consists of commercial and industrial uses, which includes a rail line, a precast concrete supplier and a construction contractor storage yard. The nearest residential area is located about 700 feet to the east of the site along the Little Falls Ponds tributary.

Past Uses of the Site: For at least 38 years, metal furniture was manufactured at the site by Birium Corp. or Avery Dennison Corporation and its predecessor. The operation included cutting, shaping, welding, deburring, degreasing, and painting of metal components. Degreasing was performed using chlorinated solvents in two vapor-phase degreaser pits in the central portion of the plant. Avery Dennison terminated operations in 1994. A cardboard box manufacturer occupied the site from about 1997 to 2009.

Operable Units: The investigation and subsequent approach to remediation of the former Dennison Monarch Facility led to the creation of two operable units (OUs). An OU 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 Number 01 (OU1) is the on-site area that is the location of the former facility. The site consists of a 5.8-acre parcel. In 2010, the 97,000 square-foot former manufacturing building positioned in the northwest corner of the parcel was demolished; there are currently no structures on the site. The concrete slab-on-grade foundation was left in place following the demolition. The site slopes gently to the east and southeast.

Operable Unit Number 02 (OU2) is comprised of the off-site downgradient portion of the contaminated groundwater plume. The plume, approximately 300 feet wide and 1,800 feet long, flows under Ruscutti Road and beneath three properties: a portion of property owned by a general contractor that is used for building material storage, a property owned by a concrete product supplier, and a Town of New Windsor property. The Town of New Windsor property is undeveloped, consisting of three ponds and low-lying dense vegetation. Former water supply wells, which have been inactive for over 30 years, are located on the town property, but beyond the limit of the contaminant groundwater plume which exceeds groundwater standards.

Site Geology and Hydrogeology: The geology at the site consists of glacial till and fluvial outwash overlying shale bedrock. The bedrock surface is approximately 40 to 60 feet below ground surface. The till is present on top of the bedrock with an approximate average thickness of 20 feet. A discontinuous sand and gravel outwash unit approximately five feet thick is present on top of the till, although in some areas finer-grained deposits are present directly over the till. Fine-grained deposits are present above the sand and gravel. Additional sands and gravels, both natural and fill, comprise the top of the overburden.

The groundwater is approximately seven feet below ground surface beneath the site but approaches the ground surface in the off-site area east of Ruscutti Road. Groundwater flows in a northeasterly direction towards Little Falls Ponds.

Prior to March 7, 2018, the site was assigned site number V00135.

A Decision Document for OU1 was issued in 2014. The main elements of the selected on-site remedy include a vertical, fully enclosing sealed joint sheet pile containment wall keyed into the low-permeability till, a low permeability cap and a groundwater extraction system which maintains an inward hydraulic gradient within the enclosure. Construction of the containment wall, cap and extraction system was completed in 2016. A plan for monitoring and maintaining these remedial components is currently in-place.

Operable Unit (OU) Number 02 is the subject of this document.

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, alternatives (or an alternative) that restrict(s) the use of the site to commercial use (which allows for industrial use) as described in Part 375-1.8(g) were/was evaluated in addition to an alternative which would allow for unrestricted use of the site.

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

SECTION 5: ENFORCEMENT STATUS

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:

Avery Dennison Corporation

The Department and Avery Dennison Corporation entered into a Consent Order on September 17, 2018. The Order obligates the responsible party, Avery Dennison Corporation, to implement a full remedial program for on-site and off-site contamination.

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
- surface water
- soil
- sediment
- soil vapor

6.1.1: Standards, Criteria, and Guidance (SCGs)

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

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

6.1.2: RI Results

The data have identified contaminants of concern. A "contaminant of concern" is a 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 below. Additionally, the RI Report contains a full discussion of the data. The contaminant(s) of concern identified for this Operable Unit at this site is/are:

trichloroethene (TCE)

1,1,1-trichloroethane

The contaminants of concern exceed the applicable SCGs for:

- groundwater

6.2: Interim Remedial Measures

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

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

6.3: Summary of Environmental Assessment

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

Nature and Extent of Contamination: Volatile organic compounds were analyzed for at OU2 based on the site-related contaminants of concern (COCs) identified for OU1. The primary site COCs are 1,1,1-trichloroethane (TCA) and trichloroethene (TCE).

The anaerobic breakdown products of TCA and TCE: 1,1 dichloroethane, cis 1,2 dichloroethene, trans 1,2 dichloroethene and vinyl chloride were either not detected or were detected below their respective standards.

The groundwater at OU2 was analyzed for 1, 4 dioxane and polyfluoroalkyl substances (PFAS) as part of a statewide evaluation. Perfluorooctanesulfonate (PFOS) was not detected above the screening value of 10 parts per trillion (ppt). Perfluorooctanoic acid was detected at concentrations up to 12 ppt, slightly exceeding the Department screening value of 10 ppt. 1,4 dioxane was detected at concentrations of up to 4.9 parts per billion (ppb), exceeding the screening value of 1 ppb. PFOA and PFOS were detected up/side-gradient of the TCE on-site source area along a property line at 78 and 19 ppt, respectively, which indicates higher concentrations of these compounds coming onto the site. 1,4 dioxane was not detected in those same monitoring wells.

Soil

Soil samples collected at OU2 did not exceed the unrestricted use soil cleanup objectives (SCOs).

Groundwater

At OU2, groundwater exceeding the groundwater standards for TCA and TCE extends northeast in a long narrow band. The presence of TCA and TCE are generally co-located, extending to a maximum depth of 50 feet within the overburden. The plume lies under commercial properties and undeveloped municipally owned land. In 2019, TCA in off-site groundwater was found up to 20 ppb (standard: 5 ppb) down from 1,680 ppb in 2006, while TCE was found up to 140 ppb in 2018 (standard: 5 ppb) down from 1,190 ppb in 2006. In 2019, the concentrations of TCA and TCE exceeded respective groundwater standards downgradient of the first (southern-most) Little Falls Pond, but TCA and TCE were not detected downgradient of the second Little Falls Pond to the north. The reduction of contaminant levels between 2006 and 2019 are attributed to the remedy implemented at OU1 that eliminated the migration of contamination from the site.

Also, at OU2, 1,1-dichloroethane was found in groundwater in concentrations up to 4 ppb, while 1,1-dichloroethene was measured in concentrations up to 2 ppb. In addition, cis-1,2-

dichloroethene was found in concentrations up to 1 ppb. None of these compounds exceeded their groundwater standard of 5 ppb. Vinyl chloride was not detected in groundwater.

The data support the presence of an extensive low permeability till and an upward hydraulic gradient from the bedrock into the overburden which restricts the plume to the overburden. Also, the convergence of groundwater towards the Little Falls Ponds limits lateral movement of the plume.

In 2008, the former water supply wells, located north of/downgradient from the site near the first and second Little Falls Ponds, were sampled by the Town of New Windsor. TCA was detected in two wells, but at concentrations below the New York State Department of Health drinking water standard of 5 ppb.

The former supply wells have not been in use for over 30 years and there are no plans to reactivate the wells. The town receives its water from a source distant from and unaffected by the Dennison Monarch Facility Systems site.

Figures 2A and 2B demonstrate the reductions in the TCE and TCA plumes, respectively, after the installation of the on-site barrier wall in 2016.

Sediment

Fifteen sediment samples from the drainage stream and each of the Little Falls Ponds were collected from a sediment depth of 0 to 6 inches and analyzed for volatile organic compounds. One sample exceeded the Class C sediment guidance value for TCA of 3.5 parts per million (ppm) with a concentration of 4 ppm. No samples exceeded the TCE guidance value.

Seven samples of sediment porewater were collected in the drainage stream before it enters the Little Falls Ponds analyzed for volatile organic compounds. TCA and TCE did not exceed the groundwater standard. Vinyl chloride exceeded the groundwater standard in one sample with a concentration of 15 ppb (GA standard: 2 ppb).

Surface Water

TCA and TCE were detected in the surface water of the first and second Little Falls Ponds as well as in tributary surface water, with maximum concentrations of 4 ppb and 12 ppb respectively. None of the TCE detections exceeded the Class C surface water standard of 40 ppb. A standard or guidance value has not been established for TCA in Class C surface water.

Soil Vapor

One building, the satellite building at the concrete products supplier, lies over the groundwater plume. Soil vapor investigation points were installed along the perimeter of the satellite building to investigate the potential for soil vapor intrusion. Constituents of the underlying groundwater plume were not detected in the soil vapor samples. Soil vapor samples were also collected in the Little Falls Ponds (LFP) Area between the plume and residences on Myrtle Avenue. TCA and TCE were found in certain LFP samples; TCA was found in the soil vapor up to 1.5 micrograms

per cubic meter while TCE was detected at up to 5.8 micrograms per cubic meter. There are no occupied structures in the Little Falls Ponds area. The low concentrations of TCA and TCE in soil vapor and the absence of significant structures in the plume area support that additional investigation is unwarranted at this time.

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 actions are complete for on-site and measures are in place to control the potential for coming in contact with residual contamination remaining at the site. People are not drinking the contaminated groundwater because the area is served by a public water supply that obtains its water from a different source. Volatile organic compounds in the groundwater may move into the soil vapor (air spaces within the soil), which in turn may move into overlying buildings and affect the indoor air quality. This process, which is similar to the movement of radon gas from the subsurface into the indoor air of buildings, is referred to as soil vapor intrusion. The site is vacant so inhalation of site contaminants in indoor air due to soil vapor intrusion is not a current concern. There are no occupied buildings in the area of off-site groundwater contamination, therefore off-site soil vapor intrusion is not a current concern. An evaluation of the potential for soil vapor intrusion to occur off-site is recommended for any existing or new off-site buildings that are redeveloped or constructed in the area of off-site groundwater contamination.

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 OU2 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.

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 Natural Attenuation with Monitoring remedy.

The elements of the selected remedy, as shown in Figure 3 - Monitoring Locations, are as follows:

1. A remedial design program will be implemented to provide the details necessary for the 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. Natural Attenuation with Monitoring

Groundwater will be addressed through natural attenuation with monitoring. Groundwater will be monitored for continuing decreasing trends in levels of site-related contamination. It is anticipated that contamination will decrease by an order of magnitude within 10 years. Reports of the attenuation will be provided every two years. The need for active remediation will be re-assessed by the Department if it appears that natural processes alone will not adequately reduce the contamination. The alternative remedial action selected would depend on the information collected, but it is currently anticipated to be enhanced in-situ bioremediation through biostimulation.

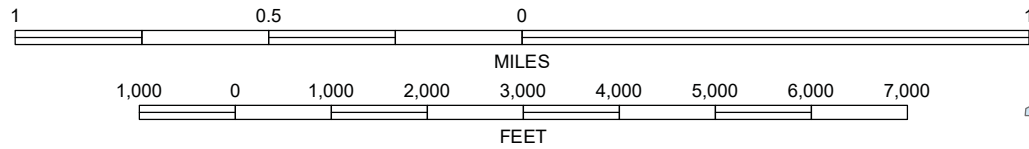
3. Site Management Plan

a. The Site Management Plan for OU1 will be updated to include OU2 site management activities, which include the following:

- As a contingent remedial action, enhanced in-situ bioremediation will be employed should it be necessary based on long-term groundwater monitoring;
- The use of groundwater as a source of potable or process water without necessary water quality treatment as determined by the New York State Department of Health or Orange County Department of Health is prohibited. Also, the installation of a groundwater supply well will require approval by the Town of New Windsor building permit as stated in the Town of Windsor Part II of General Legislation, section 107.4D.5e;
- The steps necessary for the periodic review and certification of the institutional and/or engineering controls; and
- A provision for evaluation of the potential for soil vapor intrusion for any occupied buildings on OU2, including provision for implementing actions recommended to address exposures related to soil vapor intrusion.

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

- monitoring of groundwater to assess the performance and effectiveness of the remedy;
- a schedule of monitoring and frequency of submittals to the Department; and
- monitoring for vapor intrusion for any buildings on OU2 as may be required by the Institutional and Engineering Control Plan discussed above.



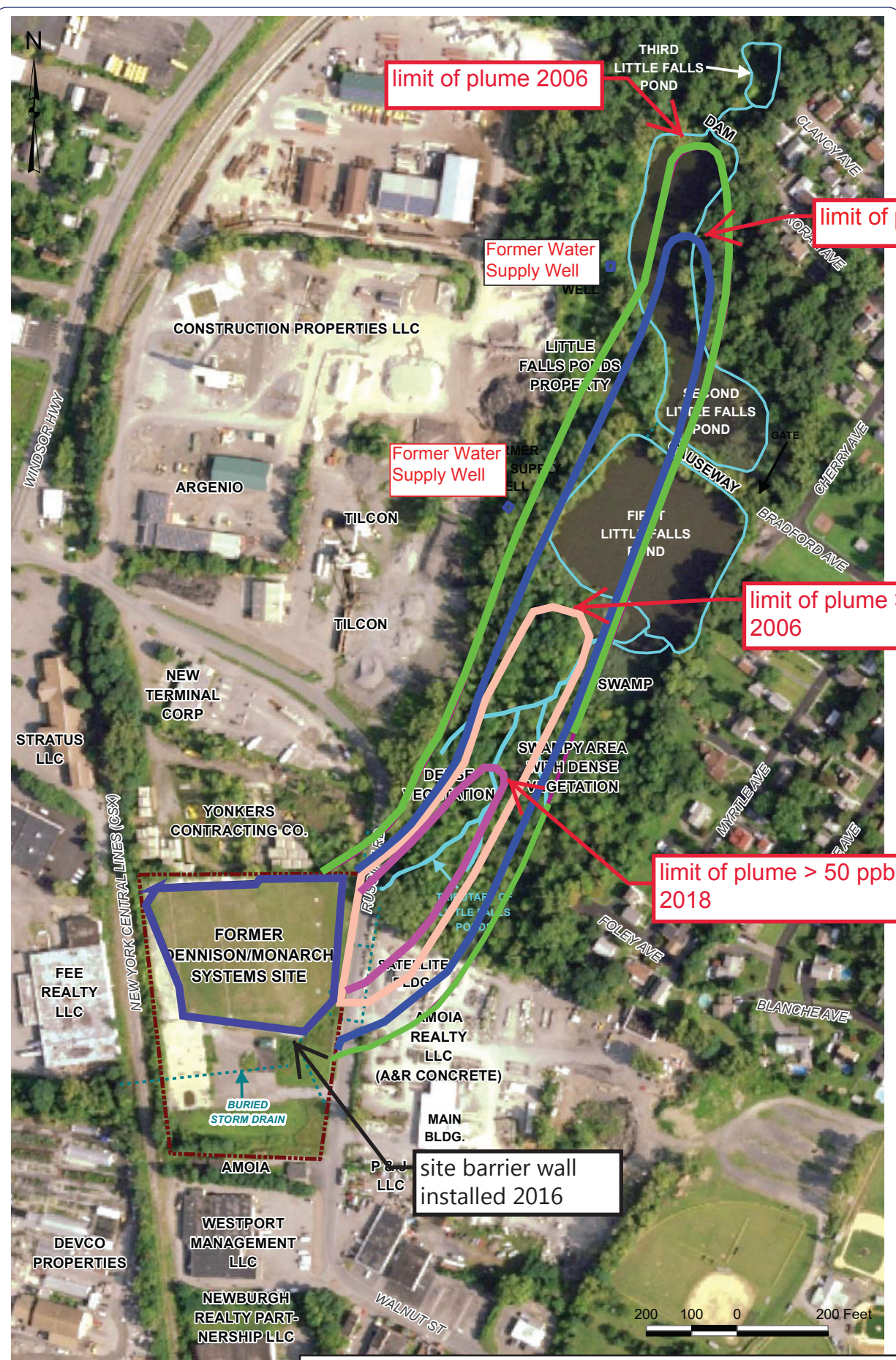
BASE MAP: USGS 7.5 Minute Topographic Quadrangles Cornwall-on-Hudson and Newburgh, 2013

**FIGURE 1-1: SITE LOCATION MAP
FORMER DENNISON/MONARCH SYSTEMS SITE
NEW WINDSOR, NEW YORK**



VHB Engineering, Surveying, Landscape and Geology, P.C.
100 Great Oaks Boulevard, Suite 118
Albany, New York 12203

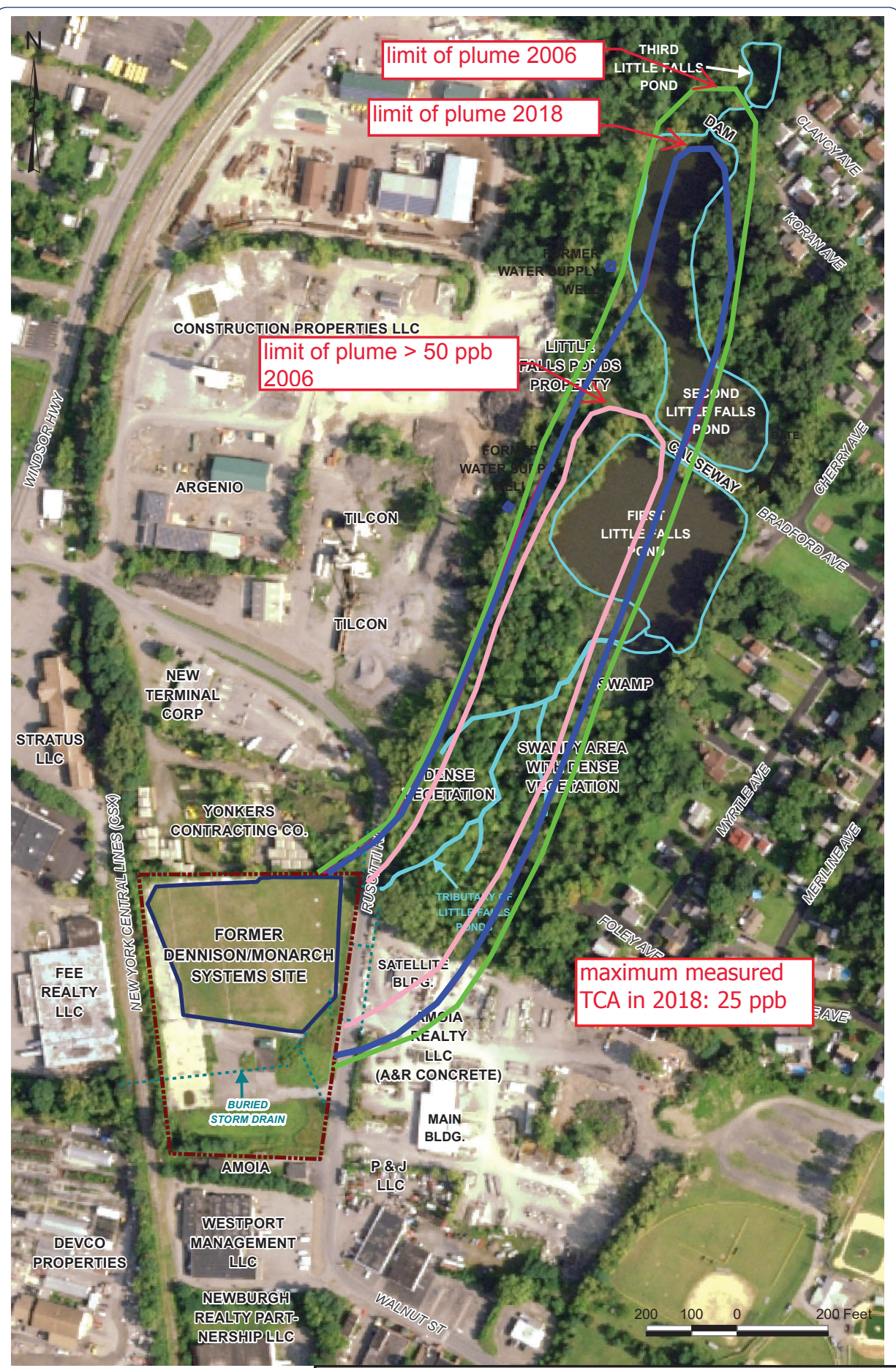
Drawn by: DEB Date: 12/20/18
Reviewed by: GAK Date: 01/11/19
Scale: 1:24,000 Project: 58300.00



LEGEND
 - - - Operable Unit 1 (Site Property Boundary)
 - - - Operable Unit 2 Approximate Boundary
 - - - Sealed Sheet Pile Wall (OU1 RA)

Sources: Parcel Boundaries from Town of New Windsor Tax Map, 2017.
 Aerial photo taken in August 2017 (USDA Farm Service Agency - NAIP).
 \\vh\gis\proj\Montpelier\58300.00 ADC New Windsor NY\gis\MXD\OU2 AAR Figures\Figure 1-3 - Operat

Figure 2A: Extent of Off-Site Trichloroethene in Groundwater in December 2006 and May 2018



LEGEND
 - - - Operable Unit 1 (Site Property Boundary)
 - - - Operable Unit 2 Approximate Boundary
 - - - Sealed Sheet Pile Wall (OU01 RA)

Sources: Parcel Boundaries from Town of New Windsor Tax Map, 2017.
 Aerial photo taken in August 2017 (USDA Farm Service Agency - NAIP).
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Figure 2B: Extent of Off-Site 1,1,1 Trichloroethane (TCA) in Groundwater in December 2006 and May 2018



Sources:
Aerial photo taken in August 2017 (USDA
Farm Service Agency - NAIP).

**FIGURE 3 PROPOSED OU2 MONITORING LOCATIONS
FORMER DENNISON/MONARCH SYSTEMS SITE
NEW WINDSOR, NEW YORK**

vhb Engineering, Surveying, Landscape
and Geology, P.C.
100 Great Oaks Boulevard, Suite 318, Albany, NY 12203

Drawn by: TEH Date: 10/14/20
Reviewed by: GWL Date: 10/14/20
Scale: As Shown Project: 58300.00



B

Appendix B: Operable Unit 02 Site Photographs – October 2023

© VHB

Operable Unit 02 Site Photos

October 2023

PROJECT NUMBER

58300.00

CLIENT

Avery Dennison
8080 Norton parkway
Mentor, Ohio 44060

LOCATION

15-21 Ruscitti Road
New Windsor, New York 12553



NO. 1 / 10.6.2023 11:09 AM

DESCRIPTION

Town of New Windsor access to
Little Falls Pond Property



NO. 2 / 10.6.2023 11:10 AM

DESCRIPTION

Little Falls Pond



NO. 3 / 10.6.2023 11:10 AM

DESCRIPTION

Little Falls Pond



NO. 4 / 10.6.2023 11:12 AM

DESCRIPTION

Monitoring well cluster on Little Falls Pond Property



NO. 5 / 10.6.2023 11:12 AM

DESCRIPTION

Wooded area on Little Falls Pond Property



NO. 6 / 10.6.2023 11:13 AM

DESCRIPTION

Monitoring well cluster on Little Falls Pond Property