EXPLANATION OF SIGNIFICANT DIFFERENCE
AVM-GOWANDA SITE

Town of Persia / Cattaraugus County / Site No. 905025 / March 2018

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

1.0 INTRODUCTION

The purpose of this notice is to describe the progress of the cleanup at the AVM-Gowanda Site and to inform you about a change in the site remedy. The site is located at One Industrial Place, in the Village of Gowanda (Village), Cattaraugus County.

On March 30, 2001, the (Department) signed a Record of Decision (ROD) which selected a remedy to address volatile organic compounds (VOCs) present in soil, groundwater and soil gas at the AVM-Gowanda Site. The contaminants of concern are trichloroethene (TCE); 1,2-dilchloroethene (1,2-DCE); 1,1-dichloroethane (1,l-DCA); 1,1,1-trichloroethane (1,1,1-TCA); and 1,1 dichloroethene (l,l -DCE).

A Remedial Design for the contaminated groundwater extraction and treatment system required by the ROD was completed; however new technologies for the destruction of chlorinated solvents became available, specifically In-Situ Chemical Oxidation Injection (ISCO) using hydrogen peroxide, sodium permanganate or potassium permanganate. The Department compared the benefits of these new technologies to the March 2001 ROD-selected remedy of Groundwater Extraction in combination with Permeable Passive/Reactive Iron Wall, and determined ISCO injections would likely achieve the goals of the March 2001 ROD at a similar cost, but in a shorter timeframe and with less disruption to the community. Therefore, a pilot test was performed to further assess this option

The pilot test proved destruction of the VOCs present at the site by ISCO using sodium permanganate was effective and the Department immediately began the implementation of a full scale ISCO injection remedy at the on-site source area and northward within the footprint of contaminant plume. The full scale ISCO injection remedy was comprised of three injection events which were completed in July 2012, October to November 2013, and December 2014 to January 2015, injecting approximately 12,000, 193,960, and 50,180 gallons of 10% sodium permanganate solution, respectively.

This Explanation of Significant Difference (ESD) will become part of the Administrative Record for this Site. The information here is a summary of what can be found in greater detail in documents that have been placed in the following repositories:

Gowanda Free Library
56 W Main St
Gowanda, NY 14070
716-532-3451

Office Hours:
Monday - Friday 1:30 PM – 6:30 PM
Saturday -10:00 AM – 2:00 PM
Sunday - Closed

Although this is not a request for comments, interested persons are invited to contact the Department's Project Manager for this site to obtain more information or have questions answered. The Project Managers contact information is:

Mr. Jeffrey Trad, P.E., Project Manager
NYS Department of Environmental Conservation
Division of Environmental Remediation
625 Broadway, 12th Floor
Albany, NY 12233-7017

Telephone: 518-402-9804
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2.0 SITE DESCRIPTION AND ORIGINAL REMEDY

2.1 Site History, Contamination, and Selected Remedy

The AVM - Gowanda site is approximately 1.75 acres and is in an industrial/commercial portion of the Village which is adjacent to residential properties to the North. The site is currently owned by the Village and is occupied by the Village's Department of Public Works (DPW). The Village uses the site for vehicle, equipment and material storage and other operations in support of its highway, sewer, water and parks departments.

The main site property features include two large buildings (the former manufacturing and R&D buildings) and two small storage sheds surrounded by parking areas. A small portion of the site property area is wooded while the remaining area is open field. The site area is bound by Thatcher Creek, a tributary of Cattaraugus Creek, to the east, and Cattaraugus Creek to the west.

From the early 1930s until 1979, the site was used for metal machining and stamping by the AVM Gowanda Corporation (AVM). These uses appear to have led to site contamination which include metal machining and stamping wastes which were disposed to the west of the building. Gowanda Electronics Corporation (GEC) purchased the facility in 1979 from AVM and used the facility for the manufacture of electronic components, and later for equipment storage until October 2008 when the Village acquired the property.

A Preliminary Site Investigation, Immediate Investigation Work Assignment and Remedial Investigation characterized the nature and extent of soil contamination and indicated that there is a plume of groundwater contamination that extends approximately 1,100 feet from the site property northward. Exceedance of standards for TCE in groundwater and TCE indoor air guidance values were discovered during these investigations. The site was deemed to present a significant environmental threat due to the contaminants in groundwater.

A 1994 soil removal was performed on-site to a depth of approximately seven feet, excavating 568 tons of soil for off-site disposal. This was followed by the 1996 installation of an on-site groundwater air stripper by Gowanda Electronics. The Department installed Sub-slab Depressurization Systems (SSDs) in nearby homes in 2004 to mitigate indoor air impacts exceeding New York State Department of Health (NYSDOH) guidelines. The Department also installed an SSD in 2010 in the former manufacturing building which is now used by the Village as office space.

A Supplemental Pre-Design Investigation Report was completed in July 2011 to evaluate the feasibility, effectiveness, and cost of using ISCO or other injectable treatments which could be used at the source area and along the contaminant plume. The result of this investigation was that ISCO injections of hydrogen peroxide at the source area and sodium or potassium permanganate along the plume would not only be an effective remedial action, it would breakdown the contaminants in three to five years, making it more protective of residents overall when compared to the groundwater extraction and treatment system which would take 25 to 30 years.

The major components of the March 2001Original Remedy are as follows:

1. A remedial design program to verify the components of the conceptual design and provide the details necessary for the construction, operation and maintenance, and monitoring of the remedial program.

2. Continued operation of the extraction well and air stripper currently in place on the Gowanda Electronics property.

3. Installation of a groundwater extraction system consisting of pumping wells beneath Torrance Place and a collection trench midway between Torrance Place and Chestnut Street.

4. Construction of a treatment system housed in a separate sound dampened building constructed on the Gowanda Electronics property.

5. Installation of a reactive iron wall north of Chestnut Street, extending approximately 250 feet in length to intercept the leading edge of the contaminant plume.

6. Implementation of a monitoring system to ensure the effectiveness of the remedy, including groundwater flow conditions, groundwater chemistry, and indoor air quality.

Elements of the Original Remedy which were performed are as follows:

1. A remedial design program (which included a Pre-Design Investigation completed in March 2004) and the Remedial Design which was completed March 2011.

2. The on-site extraction well RW-1 and air stripper operated from June 1996 until the ISCO Pilot Study commenced in February 2012.

3. Indoor air and groundwater sample results required by the monitoring program were performed.

New Information

Indoor air and groundwater sampling performed under the monitoring program indicated the need for SSDs in several homes and one municipal building where exposure pathways were found to exist.

As discussed above, the advent of in-situ treatment methods subsequent to the issuance of the ROD, lead to a Pilot Study which proved ISCO was effective at reducing the amount of chlorinated solvents present in the plume source area and the Department immediately expanded the ISCO injection remedy at the on-

site source area and northward within the footprint of the contaminant plume. The full scale ISCO injection remedy was comprised of three injection events which were completed in July 2012, October to November 2013, and December 2014 to January 2015, injecting approximately 12,000, 193,960, and 50,180 gallons of 10% sodium permanganate solution respectively.

3.0 CURRENT STATUS

The February 2012 pilot test proved destruction of the VOCs present at the site by ISCO was effective, therefore, the Department immediately began the implementation of a full scale ISCO injection remedy at the on-site source area, and northward along within the footprint of contaminant plume. The full scale ISCO injection remedy was comprised of three injection events noted above. Full scale ISCO injection was successful in destroying a significant amount of site related contaminants of concern (COCs) including the primary COC, TCE.

The Department has begun long-term monitoring to ensure groundwater contaminant levels continue to decline.

4.0 DESCRIPTION OF SIGNIFICANT DIFFERENCE

4.1 New Information

As presented above, new technologies for the destruction of chlorinated solvents became available after the issuance of the March 2001 ROD and the design of the groundwater extraction and treatment system. The Department compared the benefits of ISCO using hydrogen peroxide, sodium permanganate or potassium permanganate to the March 2001 ROD-selected remedy of Groundwater Extraction in combination with Permeable Passive/Reactive Iron Wall, and determined ISCO injections would achieve the goals of the ROD at a similar cost, but in a shorter timeframe and with less disruption to the community.

Indoor air and groundwater sampling required by the monitoring program were performed and indicated the need for SSDs to be installed in homes and one municipal building where exposure pathways were found to exist.

4.2 Comparison of Changes with Original Remedy

A summary of the changes to the original ROD as proposed in this document are shown in the Table on the following page:

SUMMARY OF PROPOSED REMEDY CHANGES
AVM Gowanda Site (No. 905025) ESD

Media:	2001 ROD	ESD
Groundwater	(1) Groundwater extraction and treatment via downgradient collection trench and extraction wells; (2) Long-term monitoring; and (3) A reactive iron wall north of Chestnut Street providing in-situ treatment of contaminated groundwater beyond the extent of the extraction system.	(1) In-situ chemical oxidation (ISCO) in source areas via injection of sodium permanganate; (2) In-situ chemical oxidation (ISCO) along the plume from the source area to south of Chestnut Street via injection of sodium permanganate; (3) Monitoring of groundwater parameters and quality to assess effectiveness of the ISCO remedy; (4) Long-term monitoring; and (5) Deed Restriction on-site to restrict groundwater use.
Soil	(1) None	(1) Deed restriction to limit use of on-site property to industrial/commercial use to restrict exposure unless otherwise approved by the Department; and (2) Use of a Site Management Plan (SMP) to maintain Institutional Controls/Engineering Controls (IC/ECs) at the site.
Soil Vapor/Indoor Air	(1) Monitoring of indoor air as part of the site monitoring program.	(1) Installation of Sub-slab Depressurization Systems (SSDs) in homes and one municipal building where exposure pathways were found to exist.

5.0 SCHEDULE AND MORE INFORMATION

The Department has implemented the ISCO remedy and intends to continue long-term monitoring to ensure groundwater contaminant levels continue to decline. Periodic Fact Sheets will be issued to keep the public informed of the ongoing remedial program.

If you have questions or need additional information you may contact any of the following:

Project Related Questions

Jeffrey E. Trad, P.E., Project Manager
NYS Department of Environmental Conservation
Division of Environmental Remediation
625 Broadway
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Site-Related Health Questions

Steven G. Berninger
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Bureau of Environmental Exposure Investigation
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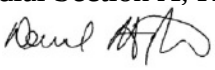
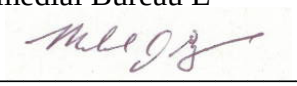
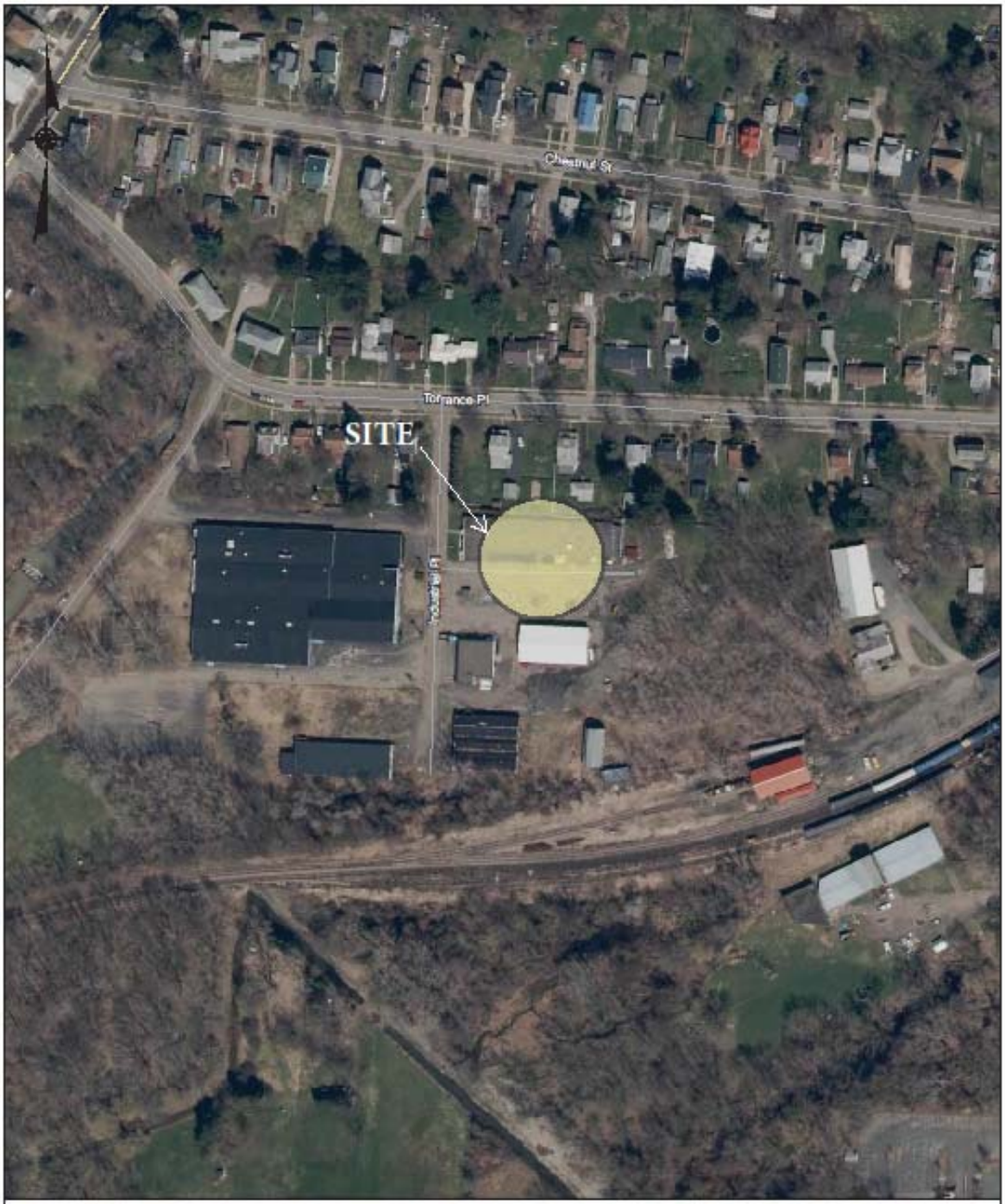
Albany, NY 12237
518-402-7860
BEEI@health.ny.gov

03/01/2018	
Date	Jeffrey E. Trad, P.E., Project Manager Remedial Section A, Remedial Bureau E
03/02/2018	
Date	David Harrington, P.E., Section Chief Remedial Section A, Remedial Bureau E
3/5/2018	
Date	Michael Cruden, P.E., Director Remedial Bureau E
3/6/2018	
Date	Michael Ryan, P.E., Assistant Director Division of Environmental Remediation

DECLARATION

The selected remedy is protective of public 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.



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D&B ENGINEERS AND ARCHITECTS, P.C.

AVM GOWANDA SITE
GOWANDA, NEW YORK

SITE LOCATION MAP

NOT TO SCALE

FIGURE 1