

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 5

DATE: **SEP 14 2000**

SUBJECT: Request for Concurrence on the Record of Decision for the  
City of Delavan Municipal Well No. 4 Superfund Site  
Delavan, Wisconsin

FROM:   
Mike Smith, Chief  
Multimedia Branch I

TO: William E. Muno, Director  
Waste Management Division

This memorandum recommends that you sign the attached concurrence letter for the Record of Decision for the City of Delavan Municipal Well No. 4 Superfund Site, which is located in Delavan, Wisconsin.

The Wisconsin Department of Natural Resources prepared the ROD in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. § 9601 et seq., as amended by the Superfund Amendments and Reauthorization Act of 1986, Public Law 94-499; to the extent practicable, the National Contingency Plan, 40 C.F.R. part 300; and Agency policy. We have reviewed the attached documents and have concluded that the ROD is both legally and technically sufficient. As such, we believe that implementation of this remedial measure is a proper exercise of your delegated authority.

Please feel free to contact me should you have any questions.

Attachment

## **DECLARATION FOR THE RECORD OF DECISION**

### **SITE NAME AND LOCATION**

City of Delavan Municipal Well No. 4  
Delavan, Wisconsin

### **STATEMENT OF BASIS AND PURPOSE**

This decision document represents the selected remedial action for the City of Delavan Municipal Well No. 4 Superfund Site developed in accordance with the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA) and, to the extent practicable, the National Oil and Hazardous Substances Pollution Contingency Plan.

This decision is based upon the contents of the administrative record for the City of Delavan Municipal Well No. 4 Superfund site.

The United States Environmental Protection Agency (USEPA), Region 5, supports the selected remedy for the City of Delavan Municipal Well No. 4 Superfund site. USEPA and the Wisconsin Department of Natural Resources (WDNR) have determined that their response at this site is complete, except for the continued operation and maintenance of existing soil vapor and groundwater extraction and treatment systems and groundwater monitoring. Therefore, the site now qualifies for inclusion on the Construction Completion List.

### **ASSESSMENT OF THE SITE**

Actual or threatened releases of hazardous substances from this site are addressed by the response actions that have been put in place and are being operated, and do not present an imminent and substantial endangerment to the public health, welfare, or the environment.

### **DESCRIPTION OF THE SELECTED REMEDY**

No further remedial action is necessary for the site other than continued operation and maintenance of existing soil vapor and groundwater extraction and treatment systems and groundwater monitoring.

Because this remedy will result in hazardous substances remaining on-site above levels that will allow for unlimited use and unrestricted exposure, U.S. EPA must conduct a statutory five-year review. The five-year review will be completed no less often than every 5 years after signature of this ROD.

STATUTORY DETERMINATIONS

It has been determined that no further remedial action is necessary for the purpose of mitigating environmental threats at this site. It is the opinion of the Wisconsin Department of Natural Resources, in consultation with USEPA Region V, that the interim remedial actions that are being taken at the site are protective of human health and the environment, attain Federal and State requirements that are applicable or relevant and appropriate for this remedial action and are cost-effective and that no further remedial action is necessary.

9/25/2000

Date

George E. Meyer  
George Meyer, Secretary  
Wisconsin Department of Natural Resources

9/28/2000

Date

William E. Muno  
William E. Muno, Director  
Superfund Division



## DECISION SUMMARY

### SITE NAME, LOCATION, AND DESCRIPTION

The Delavan Municipal Well No. 4 Superfund Site is located within the corporate limits of the City of Delavan, Wisconsin, and is defined as the contaminated groundwater used by the City of Delavan Municipal Well No. 4. A portion of the groundwater that was contaminated is generally located on property occupied by Sta-Rite Industries Inc. The area encompasses approximately 70 acres and is located in the SE1/4 of Section 17 in Delavan Township (T2N, R16E), and is bordered on the south by a commercial strip shopping center, on the west by Wright Street and on the north by the Wisconsin Calumet Railroad. The west side of Wright Street, adjacent to the site, is occupied by industrial and commercial properties, and Municipal Well No. 4. Sta-Rite has operated manufacturing facilities located at 293 Wright Street since 1958. Two major plants on the site produce high quality water pumps and related products. Plant No. 1 is located approximately 1000 feet northeast of Municipal Well No. 4 and Plant No. 2 is located approximately 400 feet east of Municipal Well No. 4. The City installed Municipal Well No. 4 in 1968.

The National Superfund electronic database identification number for this site is WID980820062. The Wisconsin Department of Natural Resources (WDNR) is the lead agency for this site and the United States Environmental Protection Agency (USEPA) is the support agency for the site.

Sta-Rite Industries Inc., the only responsible party for this site, financed an Interim Action and is expected to finance the continuing operation and maintenance of that action at the site. The area adjacent to the site is zoned for mixed residential and commercial land use. The majority of the contaminated area is on the Sta-Rite Industries Inc.'s property, and is zoned for light industrial use.

### SITE HISTORY AND ENFORCEMENT ACTIVITIES

#### ***Background***

In March 1982, during a random public well sampling program by the WDNR, trichloroethylene (TCE) was detected in the City of Delavan Municipal Well No.4. The TCE exceeded the suggested levels for water quality standards as set by the Wisconsin Department of Health and Social Services. Subsequent samplings also identified 1,1,1-trichloroethane (TCA) and tetrachloroethylene (PCE) in City of Delavan Municipal Well No. 4. The WDNR subsequently recommended that City of Delavan Municipal Well No. 4 be removed from the municipal water supply system. The City of Delavan complied in July 1982.

During 1982, the WDNR initiated efforts to identify users of the compounds detected at the City of Delavan Municipal Well No. 4. Questionnaires were sent to facilities in the vicinity of the well regarding historical solvent use and disposal practices. Sta-Rite was identified as a potential source of the compounds occurring in the well based on previous solvent use as well as the proximity of Sta-Rite facilities to City of Delavan Municipal Well No. 4.

The USEPA subsequently performed a hazard assessment and as a result, the City of Delavan Municipal Well No. 4 was nominated to the National Priority List (NPL) on September 8, 1983, and listed in 1984. Subsequent to the nomination of the City of Delavan Municipal Well No. 4 to the NPL in 1983, both the City of Delavan and Sta-Rite performed hydrogeological investigations of the source(s) of impacts to City of Delavan Municipal Well No. 4. The studies



identified an area near Sta-Rite Plant #2 which contained concentrations of TCE in the soil and ground water apparently due to a former solvent disposal sump. TCE and TCA were also found in the soil and ground water around Plant #1. Since 1983, additional investigations were conducted at the site by Sta-Rite to further define the extent of the impacts and to identify and implement appropriate remedial technologies.

Sta-Rite and WDNR executed a contract (number SF-90-02) on September 21, 1990, to conduct a Remedial Investigation/Feasibility Study (RI/FS) and Remedial Design/Remedial Action (RD/RA) on the Delavan City Municipal Well No. 4 NPL site. The purpose of the RI/FS was to determine the nature and extent of contamination, assess the potential for risks to human health and the environment, determine the need for further investigation, and, if necessary, provide data for design and implementation of selected remedies to remediate the impacts.

### ***Results of Remedial Investigation***

Investigative activities performed as part of an RI/FS for this facility were conducted between August 1991 and July 1992. These activities included soils, soil gas, groundwater, surface-water, and sediment investigations as well as an ecological assessment of the facility and the surface-water corridor downstream of the stormwater discharge which contains runoff and extracted ground water from the Sta-Rite facility. The following reports were prepared for this site:

1. Site Evaluation Report (1990) summarized existing data and conditions at the Sta-Rite facility.
2. Project Work Plans (1991) provided details of the scope of the proposed Remedial Investigation.
3. Monitoring Well Evaluation (1991) summarized existing monitoring data and conditions at the Sta-Rite facility.
4. Interim Draft Technical Memorandum #1, Source Characterization (1992), describes the source areas confirmed as part of Remedial Investigation activities, and identifies additional data needs to fully characterize suspected source areas.
5. Technical Memorandum #2, Migration Pathway Assessment (1992), describes the migration pathways for impacts detected on site, and the potential for off-site migration of these impacts in concentrations potentially harmful to human health and the environment.
6. Technical Memorandum #3, Baseline Risk Assessment Data Summary (1993), provides the results of investigations which were requested by WDNR to perform a Baseline Risk Assessment for the site.
7. Technical Memorandum #4, Contaminant Extent Characterization (1993), presents the results of Remedial Investigation (RI) activities which were performed at and near the Sta-Rite Industries, Inc., manufacturing facility.
8. Remedial Investigation (1993)
9. Focused Feasibility Study for Interim Remedial Action (1993)

Various solvents were used in manufacturing processes at the Sta-Rite facilities. TCE was used



throughout both plants in various manufacturing and cleaning processes up until 1977. Other solvents used at the facilities included TCA and PCE. The compounds detected in the greatest concentrations and which are the most prevalent at the site are TCE, TCA, and PCE. These three compounds have been preliminarily identified as the compounds of greatest potential concern based on their potential toxicity and concentrations observed at the site. The other organic compounds which are less prevalent at the site and which have occurred at relatively low concentrations in groundwater samples probably represent miscellaneous, small volume releases of organic solvents, and/or degradation products.

A series of floor, drains and sumps in Plant #1 were used from 1958 to 1976 to collect spills and other discharges and to separate sludge and solids from the spills prior to their discharge to the storm sewer system. Because the sumps were constructed of concrete block, leakage to the surrounding soils was possible. From 1982 through 1984, most of the sumps and floor drains were permanently sealed. These areas comprise the previously known release areas.

Spent solvents and other waste liquids were also thought to have been released to open pits and the ground surface south of Plant #1, below or just south of an area currently covered by a plant expansion constructed in 1974. The area beneath the existing addition was investigated and no areas of residual impacts were noted. However, one location immediately south of the existing plant expansion appears to have residual impacts. Spent solvents were reportedly released onto cast iron chips in the area southeast of Plant #1. However, the exact release locations were uncertain. The area of these releases have been evaluated using soil gas, soil, and ground water sampling.

Previous investigative work at the site documented that from 1968 to 1977 solvents were discharged to a sump adjacent to the north wall of Plant #2. The former unlined sump functioned as a release area for waste to soils via a floor drain in an adjacent solvent storage area inside Plant #2.

Pervasive low levels of volatile organic compounds (VOCs) appear to exist below Plant #1, and several of the former disposal sumps have residual VOC impacts to soils. However, the areas investigated beneath the Plant #1 structures appear to be relatively minor sources of VOCs as the monitor wells installed upgradient of these known release areas and trends in VOC concentration gradients indicate that a source of greater impact probably exists southeast of Plant #1. One source area was detected southeast of Plant #1 at the former chip storage area. This area is immediately upgradient of the site monitor wells that have the highest concentrations of VOCs impacts and is, therefore, thought to be the major area of concern. The size of this area is approximately 100 feet by 200 feet.

In addition, a drainage swale off the edge of the pavement southeast of Plant #2 was a suspected source area, based on interviews with Sta-Rite personnel, and review of historical aerial photographs. Liquid waste was known to have been released in this area. The general area encompassed by this source is approximately 180 feet by 50 feet, based on soil gas and soil analytical data.

Remedial investigation activities verified that the former chip storage and drainage swale areas had residual soil impacts that have impacted groundwater quality.

### ***Interim Remedial Actions***

Following the initial investigations, several corrective measures were implemented by Sta-Rite since 1983 to remove and/or contain VOC impacts on Sta-Rite property:



1. The sump area at Plant #2 was excavated and removed in 1983. Visibly impacted soils were excavated from the sump area. A portion of the soils were removed for disposal and the remainder were aerated and used as backfill.
2. A groundwater extraction system (GWES), consisting of five groundwater extraction wells at Plant #1 and two extraction wells at Plant #2, was installed in 1984 to remove impacted ground water. The groundwater extraction system is also used hydraulically to control off-site migration of impacted water. These systems are still in place and operating. All extracted water is discharged to the storm sewer after nozzle aeration treatment.
3. A spray irrigation flushing system was installed in 1984 to spray a portion of the groundwater extracted by Extraction Well EX-1 onto the ground surface at the Plant #2 sump area so that infiltrating water would enhance the removal of solvent from impacted soils. A gravel trench was installed in the vicinity of the former trench to assist in infiltration. The spray irrigation of groundwater ceased in the late 1980's and all extracted groundwater was then discharged to the storm sewer.
4. A soil vapor extraction system (SVES) was installed at the former sump location at Plant #2 in May, 1988 and has been in operation continuously since its installation. To enhance the VOC removal rate from this area, which had significant soil impacts remaining, heating wells were added and Heated Soil Vapor Extraction (HSVE) began operation in 1998.
5. Combination (or dual) soil vapor and groundwater extraction wells were installed in the in former chip storage and drainage swale source areas in 1994. These are called the chip storage extraction system (CSES) and the southeast extraction system (SES), respectively.
6. Groundwater monitoring wells have been installed to monitor all source areas. Site groundwater monitoring continues on a quarterly basis.

### COMMUNITY PARTICIPATION

The Proposed Plan for the City of Delavan Municipal Well No. 4 Site in Delavan, Wisconsin was made available to the public in August 2000. The Proposed Plan can be found in the information repository maintained at the WDNR Annex Office and the Aram Public Library in Delavan, Wisconsin. The notice of the availability of this document was published in the Delavan Enterprise on August 17, 2000. A public comment period was held from August 17 to September 18, 2000. In addition a public meeting was held on August 23, 2000, to present the Proposed Plan to a broader community audience than those that had already been involved at the site. At this meeting, representatives of the WDNR and Sta-Rite Industries Inc., made themselves available to answer questions about the site and the remedial action.

### SCOPE AND ROLE OF RESPONSE ACTION

The proposed response action for this site is No Further Action. The interim remedial actions that were previously put in place and will be continued are the final actions for this site. The interim remedial actions will continue until the response action objectives, described below, are met.

Site monitoring, including groundwater monitoring, will continue as part of the actions. Such monitoring will also continue after active remedial actions are reduced or stopped, to determine if groundwater contaminant levels increase due to such reductions or stoppages. Should monitoring, at any time, show an increase in contaminant levels, additional remedial actions will



be required to meet the response action objectives.

### SITE CHARACTERISTICS

The combined system of soil vapor extraction and groundwater extraction of the former Plant #2 sump has proven to be highly effective. Since operation of the soil vapor extraction system in May, 1988, VOC concentrations in extraction well EX-7 have decreased as follows:

Compound	June, 1988 Concentration	Dec., 1991 Concentration
PCE	330 ppb	44 ppb
TCE	2,400 ppb	241 ppb
TCA	7.9 ppb	5.1 ppb

Groundwater extraction at Plant #1 has also been effective at reduction of groundwater impacts over the eight years of its operation. Extraction well EX-2, historically the most impacted pumping well, has shown significant concentration decreases as follows:

Compound	Nov., 1984 Concentration	Dec., 1991 Concentration
TCE	1,000	268
TCA	2,900	1,260
DCE	280	92
DCA	<10	9.1

The above indicates the soil vapor extraction in source areas of solvent contamination in soil has resulted in about an order of magnitude decline in concentrations of major contaminants at the Plant #2 sump in 4 years. Relatively less contaminant reduction of about 2 to 3 times has occurred over twice the time interval at Plant #1 where solvent source areas were previously unidentified and remained untreated.

Significant reductions in VOC impacts at site monitoring wells have been observed since the remediation began, and VOC removal from the groundwater at the source areas continues to provide control and reduction of the contaminated plume.

The GWES removes impacted groundwater from two areas; the groundwater in the CSES is remediated by seven dual SVE/GWE wells. In addition, the groundwater in the former sump area continues to be remediated by downgradient extraction wells installed prior to and operated separately from the SVE/GWES. The source area has seen decreasing contaminant concentrations due to the remedial efforts, and so has the groundwater removal rate. Each year the subtotal of VOCs removed has decreased in proportion to the source area reduction.

Significant impacts remain at the former sump area. However, the HSVE enhancement has been successful at increasing the VOC removal rate from this area. When the HSVE began in August 1998, an immediate improvement in the VOC removal rate was noted. Approximate contaminant removal rates were calculated based on concentrations in the soil vapor and rate of soil vapor extraction. VOC removal rates ranged from 31 pounds per year to 280 pounds per year.



## CURRENT AND POTENTIAL FUTURE SITE AND RESOURCE USES

There are no contemplated changes to the use of the site by either the City of Delavan or Sta-Rite Industries Inc. The City of Delavan plans to continue using Municipal Well No.4 as a source of municipal water. Sta-Rite Industries plans to continue operating their manufacturing facilities on the site.

## SITE RISKS

Since the soil vapor and groundwater extraction and treatment systems were installed in June 1994, the groundwater contamination has been contained within the property limits of Sta-Rite Industries Inc. In addition, ongoing groundwater monitoring shows stabilized or continued declining VOC concentrations in the groundwater at Plant No.1 and Plant No.2. The Wisconsin Division of Health reports that contaminated groundwater is not an apparent public health hazard for private well users in the Delavan area. No Delavan-area homes were identified that obtain contaminated drinking water from private wells. Sediments in Swan Creek, where treated water from Sta-Rite is discharged, contained VOCs at levels that are not a health concern.

In 1993, a new air stripping facility began processing water from Well No.4 and one other municipal well, removing all measurable contamination before discharge to the supply system. No community health concerns relating to Delavan Well No. 4 have been reported. Even though the raw water from Well No. 4 is treated before discharge to the municipal system, City monitoring records indicate that raw water from Well No. 4 has not exceeded Wisconsin Ch. NR 140, Wis. Adm. Code, groundwater Enforcement Standards for trichloroethylene, 1,1,1-trichloroethane (TCA) and tetrachloroethylene (PCE) and vinyl chloride since 1993 and currently does not exceed Wisconsin Groundwater Preventive Action Limits.

## REMEDIAL ACTION OBJECTIVES

The remedial action objective for contaminated groundwater at the site is to meet ch. NR 140, Wis. Adm. Code, groundwater PALs for all contaminants of concern. If groundwater monitoring indicates that it is not technically or economically feasible to achieve PALs, s. NR 140.28 provides standards for the granting of a site-specific exemption from the requirement to achieve PALs. However, an exemption can not be granted for levels higher than Enforcement Standards.

Contaminated unsaturated zone soil at the site must be remediated in accordance with ch. NR 720, Wis. Adm. Code. Contaminated soil must be addressed so contaminants migrating from the soil to groundwater do not cause exceedances of Wisconsin groundwater standards. The interim remedial actions, as described above, are considered a soil performance standard in accordance with s. NR 720.19(2), Wis. Adm. Code, provided that they continue to be operated and maintained until the groundwater remedial action objective is met.

Significant soil contaminant removal has occurred since the start of remediation. As a result, it appears that the impacts at the CSES soil source area are significantly reduced, and impacts in the SES soil source area have been successfully remediated. However, the groundwater concentrations adjacent to the SES have not been consistently below PALs, although SVE operations in the CSES continues to remove impacts. Therefore, the SVE operations will continue at these locations on a rotating basis along with the HSVE at the former sump area to address the remaining impacts and to optimize the performance of the SVE system. The SVE will be maintained on a rotating monthly basis in these areas because the system blower works at optimum performance with two legs operating.

#### DOCUMENTATION OF SIGNIFICANT CHANGES

There were no comments received on the Proposed Plan for this No Action ROD, therefore, no changes were made that were based upon public comment.



# **RESPONSIVENESS SUMMARY**

**City of Delavan Municipal Well No. 4  
Delavan, Wisconsin**

## **Responsiveness Summary Overview**

In accordance with CERCLA Section 117, 42 U.S.C. Section 9617, the Wisconsin Department of Natural Resources (WDNR) held a public comment period from August 17, 2000, through September 18, 2000, to allow interested parties to comment on the Proposed Plan/Fact Sheet, September 2000, for this site. The Proposed Plan provides for no further remediation beyond that accomplished already during the Interim Remedial Actions carried out by the PRPs under an agreement with WDNR since 1990.

The purpose of this Responsiveness Summary is to document the WDNR's efforts to

- 1) Inform the public of the pending decision on this Proposed Plan;
- 2) Provide the public with a summary of the technical details of the Interim Remedial Actions and the current environmental conditions at the site;
- 3) Inform the public of the ready availability of much more detailed information about the site, in the form of locally available Site Information Repositories and an Administrative Record for the site;
- 4) Inform the public of the opportunity for interested parties to comment on the Proposed Plan either in person at a locally held Public Hearing or by mail during the public comment period; and
- 5) Provide that opportunity to comment by holding both the Public Hearing and the 30-day comment period.

This section does not contain a detailed response to questions, concerns, and comments raised during the comment period or the Public Hearing because no comments were received regarding the Proposed Plan and no one attended the Public Hearing.

### **Public Notification, Public Hearing, and Public Comment Period**

Prior to making a decision on the final remedy for this site, the WDNR was required to hold a minimum 30-day public comment period to allow the public an opportunity to comment on the Proposed Plan of No Further Action at this site.

WDNR arranged for a large display advertisement, announcing the forthcoming public comment period and Public Hearing, to be published in the Delavan Enterprise newspaper, the most widely read local daily newspaper for the site area. The ad was published on August 17, 2000, to comply with WDNR regulations regarding public notice for formal hearings, and to assure that interested parties would be aware of the Proposed Plan and the opportunity for public involvement. The Site Information Repositories and Administrative Record for the site were updated, and copies of the

Fact Sheet/Proposed Plan were added to both Repositories to make them more widely available to interested parties who might not be on the site Contact List.

The Public Hearing was held at 7 p.m. on August 23, 2000, at the Aram Public Library in Delavan, Wisconsin. A representative of the Sta-Rite Industries Inc., attended the public meeting. No one from the general public attended the public meeting.

No comments were received by mail, fax, or e-mail during the comment period. WDNR staff draw the conclusion that the interested public is satisfied with plans to require no further remediation at this site.

#### **For Further Information**

Questions about the Proposed Plan or the Remedial Action should be directed to Tom Wentland, Project Manager, WDNR, P.O. Box 12436, Milwaukee, Wisconsin 53212 or phone at 414-229-0853.

All documents used by WDNR in formulating the Proposed plan for this site are contained in the Administrative Record for this site, located at the Aram Public Library, Delavan, Wisconsin, 262-728-3111.



## **ADMINISTRATIVE RECORD INDEX**

These documents were used to prepare the Proposed Plan and the Record of Decision for the site. They are contained in the Administrative Record for the site and may be examined at the Aram Public Library, 404 East Walworth Avenue, Delavan, Wisconsin 53115-1208, Phone: 262-728-3111 or Wisconsin Department of Natural Resources, Waukesha Service Center, 4041 North Richards Street, Milwaukee WI 53212, Phone: 414-229-0800

1. Remedial Investigation / Feasibility Study, Task No. 1 Site Evaluation Report, HSI Geotrans, 1990
2. Remedial Investigation / Feasibility Study, Task No. 2 Project Work Plans, HSI Geotrans, 1991
3. Remedial Investigation / Feasibility Study, Monitoring Well Evaluation, HSI Geotrans, 1991
4. Technical Memorandum No. 1 Source Characterization, HSI Geotrans, 1992
5. Technical Memorandum No. 2 Migration Pathway Assessment, HSI Geotrans, 1992
6. Technical Memorandum No. 3 Baseline Risk Assessment, HSI Geotrans, 1993
7. Technical Memorandum No. 4 Contaminant Extent Characterization, HSI Geotrans, 1993
8. Remedial Investigation, HSI Geotrans, 1993
9. Focused Feasibility Study for Interim Remedial Measures, HSI Geotrans, 1993
10. Public Health Assessment for Delavan Municipal Well No. 4, Wic. Dept. Health and Family Services, 1996
11. Annual Progress Reports for Interim Remedial Action, HSI Geotrans, 1996 to 1999