



## **Superfund Record of Decision:**

**Reilly Tar & Chemical (St.  
Louis Park), MN**

U.S. Environmental Protection Agency  
Region 5, Library (PL-12J)  
77 West Jackson Boulevard, 12th Floor  
Chicago, IL 60604-3590



## **NOTICE**

The appendices listed in the index that are not found in this document have been removed at the request of the issuing agency. They contain material which supplement, but adds no further applicable information to the content of the document. All supplemental material is, however, contained in the administrative record for this site.

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<p>Abstract (Limit: 200 words)</p> <p>The 80-acre Reilly Tar and Chemical (St. Louis Park) site is a former coal tar distillation and wood preserving plant in St. Louis Park, Minnesota. Surrounding land use is predominantly residential. The site overlies a complex system of six aquifers, including the St. Peter Aquifer, that provide drinking water to area residences. The St. Peter Aquifer contains one municipal well, which is used during periods of peak demand; however, the majority of the drinking water in St. Louis Park is obtained from the deeper bedrock aquifers. From 1917 to 1972, coal tar distillation process wastewater was discharged to onsite surface water; as a result, small wastewater spills occurred into onsite soil. In 1972, the site was purchased by the City in response to complaints about wastewater contamination and the plant was dismantled. State investigations from 1978 to 1981 identified site-related ground water contamination. Four previous RODs in 1984, 1986, 1990, and 1992 addressed remediation of specific aquifers, the filling of a small onsite wetland, and offsite soil contamination. This ROD addresses a final remedy for the contaminated Northern Area of the Drift Aquifer, a surficial aquifer that is not used as a drinking water source. This aquifer does provide recharge water for the bedrock aquifers and is hydraulically and</p> <p>(See Attached Page)</p>				
<p>17. Document Analysis a. Descriptors</p> <p>Record of Decision - Reilly Tar &amp; Chemical (St. Louis Park), MN Fourth Remedial Action - Subsequent to follow Contaminated Medium: gw Key Contaminants: organics (PAHs)</p> <p>b. Identifiers/Open-Ended Terms</p> <p>c. COSATI Field/Group</p>				
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Abstract (Continued)

geologically connected to the Platteville and St. Peter Aquifers. Future RODs will address the remaining contamination problems presented by the site. The primary contaminants of concern affecting the ground water are organics, such as PAHs.

The selected remedial action for this site includes intercepting and containing contaminated ground water using gradient control wells; discharging the water offsite for treatment at the local POTW; and continued monitoring of the discharged water to determine if within 3 to 5 years, the water could be discharged directly to a storm sewer and then to surface water. At that time, if necessary, an onsite or offsite treatment facility will be built to treat the water using activated carbon, prior to discharge, with regeneration and reuse of any spent carbon. The estimated capital cost for this remedial action is \$370,000, per extraction well, and if the offsite treatment facility is deemed necessary, additional capital costs are estimated at \$300,000, with an estimated annual O&M cost of \$45,000 per extraction well for 30 years.

PERFORMANCE STANDARDS AND GOALS: Chemical-specific ground water clean-up goals are based on site-specific Drinking Water Criteria. These levels, which were developed by state and EPA experts, include benzo(a)pyrene and dibenzo(a,h)anthracene 5.6 ng/l, carcinogenic PAHs 28 ng/l, and other PAHs 15 ng/l.

## Declaration for the Record of Decision

### Site Name and Location

REILLY TAR AND CHEMICAL CORPORATION SITE

NORTHERN AREA OF THE DRIFT AQUIFER

ST. LOUIS PARK, MINNESOTA

### Statement of Basis and Purpose

This decision document represents the selected remedial actions for the Northern Area of the Drift Aquifer, Reilly Tar and Chemical Corporation Site (Site), developed in accordance with the Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended by the Superfund Amendments and Reauthorization Act of 1986, and to the extent practicable, the National Oil and Hazardous Substances Pollution Control Plan.

This decision is based upon the contents of the administrative record for the Site. The U.S. Environmental Protection Agency and the state of Minnesota agree on the selected remedy.

### Assessment of the Site

Actual or threatened releases of hazardous substances from the Drift Aquifer, Northern Area, at this Site, if not addressed by implementing the response action selected in this Record of Decision, may present an imminent and substantial endangerment to public health, welfare, or the environment.

### Description of Remedy

The objectives of the response actions approved for the Site are to protect public health, welfare and the environment and to comply with applicable federal and state laws.

The Northern Area of the Drift Aquifer represents one operable unit within the overall Site strategy. This remedy addresses only the Northern Area of the Drift Aquifer, and will prevent the further spread of ground water contaminated with Polynuclear Aromatic Hydrocarbons in this aquifer.

The major components of the selected remedy include:

- The interception and containment of contaminants by use of gradient control wells which will prevent the further spread of contaminated ground water in the Northern Area of the Drift Aquifer.
- The discharge from the new wells will initially be routed to the sanitary sewer for treatment at the Metropolitan Waste Control Commission wastewater treatment plant to remove contaminants from the collected ground water.
- Continued water level and water quality monitoring of the ground water contaminant plume during remediation activities.
- Within three to five years, it is anticipated that the water quality of ground water pumped from the gradient control wells will be improved sufficiently to meet National Pollutant Discharge Elimination System (NPDES) limits. This would allow the city to route the ground water

pumped from the gradient control wells to a storm sewer for eventual discharge to Minnehaha Creek. If necessary, an off-site treatment facility will be built to treat ground water discharge from the gradient control wells and an NPDES permit will be obtained for the discharge from such facility.

Declaration of Statutory Determinations

The selected remedy is protective of human health and the environment, complies with federal and state requirements that are legally applicable or relevant and appropriate to the remedial action, and is cost-effective. This remedy utilizes permanent solutions and alternative treatment (or resource recovery) technologies to the maximum extent practicable and satisfies the statutory preference for remedies that employ treatment that reduces toxicity, mobility, or volume as a principle element. As this remedy will initially result in hazardous substances remaining on-site above health-based levels, a review will be conducted within five years after commencement of remedial action to ensure that the remedy continues to provide adequate protection of human health and the environment.

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Valdas V. Adamkus  
Regional Administrator, Region V  
U.S. Environmental Protection Agency

*Charles Williams*  
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Charles Williams  
Commissioner

*9/30/92*  
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Date

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## DECISION SUMMARY



## Decision Summary for the Record of Decision

### 1. Site Description

The Reilly Tar and Chemical site (Site) is defined in Part C.1 of the Consent Decree and in Section 1.21 of the Remedial Action Plan (RAP) as the 80 acre property where Reilly Industries (Reilly) operated a coal tar refinery and wood preserving plant. The Site is located in the western part of the Twin Cities metropolitan area, in St. Louis Park (City), Minnesota (Figure 1). The approximate location of this Site is west of Gorham, Republic and Louisiana Avenues, south of 32nd Street, east of Pennsylvania Avenue and north of Walker Street.

This Record of Decision (ROD) addresses the contamination in the Northern Area of the Drift Aquifer underlying the Site. The Northern Area is located adjacent to the Site and is bounded by the West 32nd Street to the north, Alabama Avenue to the east, Highway 7 to the south, and Louisiana Avenue to the west. The Drift Aquifer is the surficial aquifer which is composed primarily of glacially deposited sand and gravel and extends from near the ground surface to approximately 90 to 100 feet below the surface. There are no wells that use the Northern Area of the Drift Aquifer for drinking water.

### 2. Site History and Enforcement Activities

The Site history information summarized in this section is excerpted from the Proposed Plan for the Northern Area of the Drift Aquifer Report dated August 1992.

Between 1917 and 1972, Reilly operated a coal tar distillation and wood treatment plant, known as the Republic Creosote Company, on 80 acres of land in the City (Figure 1). Wastewater containing creosote and coal tar from plant operations was discharged to a ditch that drained to a swamp south of the Site. Additional releases of creosote and coal tar resulted from drippings and spills onto the soil at the Site. These releases led to extensive soil, surface water and ground water contamination, not only at the Site, but also in areas downstream and downgradient (i.e., south and east) from the Site (Figures 1 and 2).

The major constituents of coal tar are phenolic compounds and Polynuclear Aromatic Hydrocarbons (PAHs). Some PAH compounds are carcinogenic and are a concern when they occur as contaminants in a source or potential source of drinking water. As used here, "contaminated" or "contamination" means that PAH or phenolics are present in the soil, surface water or ground water due to the wood treatment activities of Reilly at the Site.

Due to extensive residential development in the area around the Site in the 1940s and into the 1950s, complaints about shallow well contamination and odor (i.e., air quality) problems became common. As a result of the continuing problems with air emissions, soil and surface water contamination, the City and the Minnesota Pollution Control Agency (MPCA) filed suit against Reilly in 1970. In 1972, the City purchased the Site from Reilly, and the plant was dismantled and removed. The City dropped its lawsuit against Reilly as a condition of the sale. The MPCA's suit was eventually dismissed as a part of a comprehensive settlement in 1986.

In 1978, after results of the Minnesota Department of Health (MDH) program indicated that extensive ground water contamination had occurred, the MPCA amended its complaint in the lawsuit with Reilly to include claims for ground water contamination. In 1980, the U.S. Environmental Protection Agency (EPA) and the MPCA (Agencies) brought legal actions in federal court against Reilly under the imminent hazard provision of the Resource Conservation and Recovery Act (RCRA). After the enactment of Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and the Minnesota Environmental Response and Liability Act (MERLA), the complaints were amended to include claims under those laws. Both Agencies also took administrative actions against Reilly in the early 1980s pursuant to the applicable federal and state Superfund acts. Both the lawsuits and the administrative actions by the Agencies sought to compel Reilly to undertake necessary remedial actions. All the Agencies' claims were resolved in a comprehensive settlement with Reilly approved by the federal court in September 1986. St. Louis Park, Hopkins, and landowners of the former Reilly property were also parties to the settlement. The work to be performed under the settlement is covered in the Consent Decree/Remedial Action Plan (CD/RAP).

In the mid 1970s, Louisiana Avenue was constructed through the Site and some multi-family housing units were constructed on the northern half of the Site. In 1978, the MDH began a program to analyze water from municipal wells in the City and nearby communities for trace concentrations of PAH. The City uses ground water from the St. Peter, Prairie du Chien-Jordan, and Mt. Simon-Hinckley Aquifers as sources of drinking water. Nearby communities, such as Hopkins and Edina, rely primarily on the Prairie du Chien-Jordan Aquifer for their drinking

water. During the period from 1978 to 1981, the analytical program revealed unexpectedly high concentrations of PAH in six city wells and one well in the city of Hopkins. As the PAH contamination in these municipal wells was discovered, the wells were closed.

In 1978, after results of the MDH program indicated that extensive ground water contamination had occurred, the MPCA amended its complaint in the lawsuit with Reilly to include claims for ground water contamination. Subsequent legal actions were taken by the Agencies against Reilly under RCRA, CERCLA, and MERLA. Both Agencies instituted administrative actions against Reilly pursuant to the applicable federal and state Superfund acts. In these actions the Agencies sought to compel Reilly to undertake necessary remedial actions. Following the administrative actions, negotiations resumed between the EPA, MPCA, the City, and Reilly. A general agreement for the remediation of the Site was reached in the summer of 1985. However, because of the complex nature of the agreement and the number of parties involved, final agreement was delayed until September 1986. The agreement is embodied in the CD/RAP entered by the U.S. District Court for the District of Minnesota in U.S. vs. Reilly Tar (Case No. 4-80-469).

The remedial action discussed in this ROD is the latest in a series of remedial actions at the Site. The remedy as described in this ROD is specifically intended to prevent the further spread of contaminated ground water in the Northern Area of the Drift Aquifer, and as such, is only one part of the overall remediation of the Site. Further investigation and remediation of the Platteville Aquifer, as required by the CD/RAP, will be addressed separately. The following is a list of completed and ongoing remedial actions that are required by the CD/RAP.

- Ground Water Sampling

An annual sampling plan, which specifies municipal and monitoring wells to be sampled during the following year, is submitted by Reilly each October for the Agencies' approval. In March of each year, an annual report presenting the analytical results of the previous year's sampling is submitted for the Agencies' approval.

- Prairie du Chien-Jordan Aquifer

Drinking water from the City wells #10 and #15 currently being treated with Granular Activated Carbon (GAC) as outlined in a ROD issued on June 6, 1984. Source control well W23 has been pumping at a rate of 50 gallons per minute (gpm) since November 1987 to control the spread of contaminated ground water. Water from the well will undergo GAC treatment before being discharged to Minnehaha Creek.

- Mt. Simon-Hinckley Aquifer

Annual sampling of the Mt. Simon-Hinckley wells is ongoing. Municipal drinking water from this Aquifer will be treated with GAC if the monitoring data show that drinking water criteria (defined in Section IX below) have been exceeded.

- Ironton-Galesville Aquifer

Source control well W105 began operating in November 1987. Having met the cessation criteria outlined in the CD/RAP, the Agencies granted the City's request to cease pumping, and the pump was turned off in December 1991. Monitoring of well W105 will continue for the duration of the CD/RAP.

- St. Peter Aquifer

Gradient control well W410 began pumping at a rate of 70 gpm in May 1991. Discharge from the well is currently being routed to the sanitary sewer for treatment. This remedial action was detailed in a September 28, 1990, ROD.

- Drift Aquifer

Drift source control well W420 has been operating since October 1987 at the CD/RAP required pumping rates of 40 gpm. Discharge water from this well undergoes GAC treatment and is subsequently released into Minnehaha Creek. Drift gradient control well W422 has been pumping since October 1987 at the CD/RAP required rate of 50 gpm with its discharge being routed to the sanitary sewer for treatment.

- Platteville Aquifer

Platteville source control well W421 has been operating since October 1987 at the CD/RAP required pumping rates of 25 gpm. Discharge water from this well will undergo GAC treatment and is subsequently released into Minnehaha Creek.

- Near Surface Contamination

A contaminated wetland to the south of the Site was filled in 1986. A soil investigation conducted in September 1988 found no further soil contamination in the area of investigation defined in the CD/RAP.

### 3. Highlights of Community Participation

Various community relations activities were conducted to solicit public comment on the proposed plan for the Northern Area of the Drift Aquifer. A fact sheet of the proposed plan was mailed out in August 1992 (Attachment 1). MPCA issued a new release indicating the availability of the proposed plan and announcement of the public comment period on August 26, 1992, (Attachment 2). The MPCA published in the Star Tribune newspaper on August 29, 1992, an announcement of the public meeting and public comment period (Attachment 3). The public comment period, specified in the news release and the Star Tribune, included the time period from August 29, 1992, through September 28, 1992.

The Agencies also held a public meeting on September 9, 1992, at the City council chambers to present the Remedial Investigation, Feasibility Study (RI/FS) and the Proposed Plan for containing the spread of contaminated ground water. All of these documents are available at the St. Louis Park Public Library which is the repository for the Site. Comments received during the public comment period were to be considered in the Agencies' final decision in selecting a remedial alternative. No comments were received on the Proposed Plan during the comment period or public meeting.

#### 4. Scope and Role of Operable Unit or Response Action Within Site Strategy

This ROD summarizes the alternatives considered for the Northern Area of the Drift Aquifer and, in particular, formally evaluates the preferred alternative specified in the CD/RAP against the nine criteria identified in Section VII of the ROD. The preferred remedy consists of using multiple gradient control wells to prevent the further spread of contaminated ground water in the Northern Area of the Drift Aquifer.

In accordance with the remedial objective stated in the CD/RAP, of maintaining drinking water quality in the Northern Area of the Drift Aquifer, this alternative addresses water quality in the Northern Area of the Drift Aquifer. Section 9.3 of the CD/RAP dealt with the Northern Area of the Drift Aquifer. Section 9.5.1, Northern Area Remedial Actions, specified that: "The Regional Administrator and The Director may, for the purpose of preventing the further spread of ground water exceeding any of the Drinking Water Criteria defined in Section 2.2, require Reilly to install and operate a gradient control well system consisting of one or more gradient control wells." The Northern



Area of the Drift Aquifer gradient control well will operate independently of other remedial actions required by the CD/RAP for the purpose of preventing the further spread of contamination. Remedial Actions taken at other areas of the Site may, however, influence the duration of this alternative.

The activities described in this ROD are intended to remediate the contamination in the Northern Area of the Drift Aquifer, which is one of the six aquifers underlying the Site. The full range of Site related activities that address other remaining contamination issues is specified in the CD/RAP. One or more future RODs will address the remaining problems presented by the Site. The Remedial Action for the Northern Area of the Drift Aquifer described in this document addresses the principal threats to health and the environment posed by contamination in the aquifer at the Site.

##### 5. Summary of Site Characteristics

Contamination in the Northern Area of the Drift Aquifer exists in the form of dissolved concentrations of PAHs in the ground water. PAHs may have arrived in the Northern Area of the Drift Aquifer by dissolved PAHs following ground water flow patterns from the Drift-Platteville Aquifer. Migration of PAHs through this pathway has created the current plume of dissolved contaminants in the Northern Area of the Drift Aquifer. Based on these conditions, the primary potential effects of contamination are on drinking water supplies and on the natural resource value of uncontaminated portions of the aquifer.

## 6. Summary of Site Risks

The ground water, soil and surface waters on and near the Site have been impacted by site-related contaminants. This document represents the objectives of response actions for one operable unit, the Northern Area of the Drift Aquifer, within the overall site strategy. The purpose of this section is to discuss the risks posed by the contaminated ground water at the Site to human health and the environment.

The exposure pathway of greatest concern for human health is the ingestion of contaminated ground water through drinking or cooking. Presently, there are no drinking water wells in the Northern Area of the Drift Aquifer. The main supply of drinking water for the City is obtained from the deeper bedrock aquifers. It is important to note that the Northern Area of the Drift Aquifer is, in places, hydraulically and geologically connected to the Platteville and St. Peter Aquifers. In addition, the Northern Area of the Drift Aquifer provides recharge water for the bedrock aquifers. Because of these factors, and because of the potential for future use of the Northern Area of the Drift Aquifer as a source of drinking water, exposure through ingestion of water from the Northern Area of the Drift Aquifer is a primary concern.

The remedy will contain the spread of contaminated ground water through interception and containment effects created by the pumping of multiple gradient control wells, including using existing well W422. By containing the spread of contamination in the Northern Area of the Drift Aquifer, the remedy will preserve and protect the quality of ground water in the rest of the Drift Aquifer and will also reduce the potential for additional contamination of deeper aquifers currently used for drinking water supplies.

## 7. Description of Alternatives

The objective of the remedial action is to prevent, reduce, and control the spread of contamination in the Northern Area of the Drift Aquifer.

### Alternative 1 -- No Action with Monitoring

The National Contingency Plan (NCP) requires that the "No Action Alternative" be evaluated at every site to provide a base line for comparison. If the No Action Alternative is selected, the first two evaluation criteria (overall protection of human health and the environment and compliance with Applicable or Relevant and Appropriate Requirements [ARARs]) will not be met. Water quality data from the Northern Area of the Northern Area of the Drift Aquifer presented in the Remedial Investigation (RI) and Supplemental Remedial Investigation (SRI) Reports indicate that total PAH concentrations exceed drinking water criteria by as much as 1000 times. Therefore, the No Action Alternative does not address the first two evaluation criteria, and is not given further consideration in this document.

### Alternative 2 -- Use of Gradient Control Well(s)

This alternative includes the use of multiple gradient control wells including well W422 for gradient control. Well W422, pumped at an average rate of 55-70 gpm, has been shown to provide some gradient control but is not adequate to prevent the spread of ground water contamination in the Northern Area of the Drift Aquifer within the Northern Area. The need for an additional

gradient control well or wells was determined from the ground water monitoring data as stated in the Technical Memorandum of May 20, 1992.

The discharge from the new gradient control wells will be contaminated with PAHs and will initially be routed to the sanitary sewer for treatment at the Metropolitan Waste Control Commission (MWCC) water treatment plant. In three to five years, it is anticipated that the discharge will eventually be routed to the storm sewer or to surface water provided that all effluent limitations set by the CD/RAP and by National Pollutant Discharge Elimination System (NPDES) permits are met. To meet discharge limitations, the discharge may require treatment with activated carbon at an off-site treatment facility, if necessary. If this treatment facility is constructed, an NPDES permit must be obtained from the MPCA. One of the requirements for implementing this remedy is continued water level and water quality monitoring, not only to document the effectiveness of the remedy, but also to determine the need for off-site treatment prior to discharge to the storm sewer or to surface water.

#### 8. Summary of Comparative Analysis of Alternatives

The remedial alternatives the City developed in the RI/FS were evaluated by the Agencies using EPA's nine criteria. Since the no action alternative is not protective of human health nor does it meet ARARs, only the selected alternative (Alternative 2) will be evaluated against the nine criteria which are as follows:

### Overall Protection of Human Health and the Environment

Addressing whether an alternative provides adequate protection and describes how risks are eliminated, reduced or controlled through treatment and engineering controls.

### Compliance with ARARs

Addressing whether an alternative will meet all of the applicable or relevant and appropriate requirements or provide grounds for invoking a waiver.

### Long-term Effectiveness and Permanence

Referring to the ability of an alternative to maintain reliable protection of human health and the environment, over time, once cleanup objectives have been met.

### Reduction of Toxicity, Mobility, or Volume

Referring to the anticipated performance of the treatment technologies an alternative may employ.

### Short-term Effectiveness

Involving the period of time needed to achieve protection and any adverse impacts on human health and the environment that may be posed during the construction and implementation period until cleanup objective are achieved.

Implementability

Addresses the technical and administrative feasibility of an alternative, including the availability of goods and services needed to implement the remedy.

Cost

Including capital costs, as well as operation and maintenance costs.

Agency Acceptance

Indicating whether, based on their review of the RI/FS and Proposed Plan, the Agencies agree on the preferred alternative.

Community Acceptance

Indicating the public acceptability of a given alternative. This criteria is discussed in the Responsiveness Summary.

The following is a detailed analysis of each of the evaluation criteria for the selected alternative:

### Overall Protection of Human Health and the Environment

The selected alternative provides overall protection of human health and the environment by preventing the further spread of contamination within the aquifer. At this time there are no drinking water wells in the Northern Area of the Drift Aquifer and thus human exposure to the contamination is limited.

The primary function of gradient control wells is to provide overall protection to uncontaminated portions of the Northern Area of the Drift Aquifer, a potential source of drinking water. The preferred alternative will also reduce the potential for contamination of deeper aquifers currently used for drinking water. By preventing the further spread of contamination, overall protection of the environment will be achieved.

### Compliance with ARARs

Applicable or relevant and appropriate requirements for this alternative are defined in the CD/RAP, Sections 2.2 and 2.5. These two sections of the CD/RAP define Drinking Water Criteria and Advisory Levels, and Surface Water Discharge Criteria, respectively.

The Safe Drinking Water Act specifies Maximum Contaminant Levels (MCLs) for drinking water from public water supplies. Since MCLs for PAH compounds were not developed through the Safe Drinking Water Act regulations, it was necessary to derive site-specific Drinking Water Criteria. This was accomplished through consultations with experts from MDH, MPCA and EPA.

These Drinking Water Criteria are not ARARs since they are not promulgated requirements. However, the Drinking Water Criteria are defined as a TBC (To Be Considered). TBCs are advisories, criteria, or guidance that were developed by EPA, other federal agencies or states that may be useful in developing CERCLA remedies. The drinking water criteria developed for the site are as shown below.

#### DRINKING WATER CRITERIA

	Advisory Level	Drinking Water Criterion
The sum of benzo(a)pyrene and dibenz(a,h)anthracene	3.0 ng/l*	5.6 ng/l*
Carcinogenic PAH	15 ng/l**	28 ng/l
Other PAH	175 ng/l	280 ng/l

\* Or the lowest concentration that can be quantified, whichever is greater.

\*\* ng/l = 1 part per trillion

The Clean Water Act (CWA) and the regulations under it are applicable to the proposed remedial activities concerning the discharge of extracted ground water, or contaminated surface water from the site, to either the surface water or the sanitary sewer. The CWA and its regulations set forth permitting requirements for point source discharges that implement minimum treatment technology standards and protect the quality of the receiving water. The conditions in the CD/RAP are intended to require full compliance with the CWA regarding NPDES permitting and pretreatment requirements.



Initially, pumped ground water will be discharged to the sanitary sewer and then be treated at the MWCC wastewater treatment plant. The MWCC had issued a permit to the City for this planned discharge. Publicly owned treatment works such as the MWCC treatment plant are required by the CWA pretreatment regulations to limit the introduction of toxic or hazardous substances which may interfere with the treatment process or pass through untreated to surface waters. The MWCC permit contains pretreatment limits for various contaminants including PAHs. The discharge from the Site will meet the MWCC permit pretreatment limits. The MWCC wastewater treatment plant also has an NPDES permit.

The gradient control wells will initially discharge to the MWCC wastewater treatment plant for treatment of the contaminated ground water. Within three to five years, it is anticipated that the water quality of ground water pumped from the gradient control wells will improve sufficiently to meet NPDES limits. This would allow the City to route the ground water pumped from the gradient control wells to a storm sewer for eventual discharge to Minnehaha Creek. If necessary, an off-site treatment facility will be built to ensure that the ground water meets NPDES limits shown on the table below.

#### SURFACE WATER DISCHARGE CRITERIA

	Daily Maximum Parameter Concentration	30-Day Average Concentration
Carcinogenic PAH	--	65 ng/l*
Other PAH	34 ug/l**	17 ug/l
Phenanthrene	2 ug/l	1 ug/l
Phenols	--	10 ug/l

\* ng/l = 1 part per trillion

\*\* ug/l = 1 part per billion

RCRA may be an ARAR for the Site. If on-site treatment is required for the discharge from W422, the process will generate "spent carbon." This term refers to GAC contaminated with PAHs. Spent carbon will be returned to the manufacturer for regeneration and reuse. If the testing of spent carbon indicates that the carbon is a hazardous waste as defined by RCRA, and if regulated quantities of spent carbon are generated, then the requirements of RCRA would be ARARs for the Site. The Land Ban requirements of RCRA will not apply to the disposal of spent carbon since the carbon will be regenerated and reused and no land disposal is contemplated.

The operation of the gradient control wells in the Northern Area of the Drift Aquifer will be governed by these ARARs, TBCs or other limits established by the Agencies. The Drinking Water Criteria will be used to assess the need for ground water control measures throughout the aquifer, while discharge options for extracted ground water will be evaluated against the Surface Water Discharge Criteria.

#### Long Term Effectiveness and Permanence

Once the response objective is met, and the further spread of contamination has been prevented, residual levels of PAH will remain in the aquifer. On the basis of their relatively large volume and low mobility, residual PAHs are expected to remain in the aquifer for at least the 30-year life of the CD/RAP. Pumping will continue as long as it is necessary to prevent the further spread of contamination. The potential risks posed by residual contamination in the aquifer after plume management activities are

concluded are very small because of the lack of a human exposure pathway, and because the relatively low mobility of the PAH compounds will reduce their tendency to migrate.

Treatment residuals would be generated from an on-site GAC treatment facility if the discharge is shifted from the sanitary sewer to the storm sewer. These materials would consist of spent activated carbon and would be disposed of in conjunction with spent carbon generated at the Drift-Platteville Aquifer source control wells treatment facility, and the St. Louis Park 10/15 drinking water treatment plant. Spent carbon from the St. Louis Park 10/15 drinking water treatment plant has been evaluated for acute toxicity by the City, under guidance provided by the MPCA Hazardous Waste Division, and was found to be non-toxic. The carbon generated from other plants treating gradient control water is expected to be similar. Therefore, no significant additional risk from spent carbon is anticipated.

The pumping technology for the selected alternative is standard, reliable, and a proven technology for meeting project objectives. System components may require replacement during the life of this remedial action, but replacement should be a straightforward procedure. The City has been operating and maintaining ground water pumping systems for over 40 years, thus no problems with the adequacy or reliability of controls are anticipated.

The need for additional response actions in portions of the Northern Area of the Drift Aquifer that are outside the influence of the pumping wells will be addressed based on future ground water monitoring results.

Monitoring of available wells completed in the Northern Area of the Drift Aquifer is ongoing.

### Reduction of Toxicity, Mobility, or Volume Through Treatment

The most important feature of the selected alternative is the control exerted by the pumping well(s) on the volume and mobility of contaminants within the aquifer. During pumping, the more mobile PAH will be removed first, leaving less mobile PAH in the aquifer.

Although treatment of the pumped water will only destroy a relatively small portion of the total volume of contamination in the aquifer, the preferred alternative complies with EPA's statutory mandate of treatment to the maximum extent practicable. Thus, the preferred alternative will reduce the mobility and volume of the contaminants.

### Short-Term Effectiveness

The construction and implementation phase of this alternative will not lead to community exposure, and will not cause adverse environmental impacts. Pumping well W422 is already in place and operating. During the construction of additional pumping, well measures will be taken to minimize workers' exposure. This alternative presents no other short-term risks to the community at large.

### Implementability

There are no outstanding issues relative to the technical feasibility of implementing the selected alternative. The technology for pumping ground

water is reliable, and easy to maintain. There should be little potential for schedule delays, or conflicts with other remedial actions taken at the Site. Repair work on system components will be similarly straightforward.

There are no administration problems that would prevent implementation of the preferred alternative. The same remedial actions are currently being practiced elsewhere at the Site. Other agencies such as the MWCC, the Minnesota Department of Natural Resources, and/or the Minnehaha Creek Watershed District have a precedent to follow in dealing with this activity. Services and materials for this work are all available at competitive bid prices, and will not limit the implementability of this alternative.

#### Costs

Project costs are minimal at this point due to the amount of work that has already been done to construct and test the wells. Well W422 is currently in place and, operating and no further installation costs will be incurred for this well.

Monitoring results indicate that additional gradient control wells are needed. It is anticipated that the cost of the installation of each additional well would be approximately \$370,000. These costs would cover equipment, installation, engineering, permits, startup, and contingencies and includes a \$170,000 availability charge. The availability charge is prorated over a five year period from the MWCC and is a fee for the utilization of MWCC for ground water pump-out systems. These anticipated

costs would be required for each additional gradient control well needed to achieve the remedial goals of the project.

If a treatment facility is required for a surface water disposal option, the capital cost of the facility is estimated at \$300,000. Annual Operation and Maintenance (O&M) costs are reduced for this alternative because many other operating wells are currently maintained by the City. O&M, materials, energy, disposal of residues, purchased services, administrative costs, and other post-construction costs that may be required to ensure the effectiveness of this remedial action are estimated at no more than \$45,000 per year. Major components of the annual O&M costs include:

sewer charge per well	\$ 17,000
electricity per well	\$ 3,000
labor per well	\$ 20,000

If major equipment problems occur, and replacement is required at some time during the first 30 years of operation, then two to four weeks should be sufficient to correct the problem.

No cost sensitivity analysis was performed due to the certainty of overall project costs.

### Agency Acceptance

The Agencies agree upon the remedy because it is protective of public health and the environment and satisfies the nine required evaluation criteria. The remedy is also consistent with the remedial action specified in the CD/RAP.

In summary, the alternative provides the best balance of tradeoffs among available alternatives with respect to the criteria used to evaluate remedies. Based on information available at this time, the Agencies believe the selected alternative will protect human health and the environment, will comply with ARARs, will be cost-effective, and will utilize permanent solutions and alternative treatment technologies or resources recovery technologies to the maximum extent practicable. This alternative will satisfy the preference for treatment as a principle element to the maximum extent practicable.

### Community Acceptance

There were no comments received during the public comment period on the proposed plan.

## 9. Selected Remedy

The selected remedy of using multiple gradient control wells, including well W422, will be required to provide the appropriate gradient control and will satisfy the nine evaluation criteria. The wells will be pumped at a rate

depending on the extent of contamination in the aquifer as determined by ground water monitoring to control the further spread of contamination in the Drift Aquifer. The remedial action alternative involves building new well houses and installing appropriate pumping equipment in the wells.

For the first five years following the effective date of this ROD, ground water samples will be collected on a semiannual basis from the following wells: W2, W6, W10, W11, W12, W15, W116, W117, W128, W135, W136, W422, W423, W425, W427, P109, P112, P307, P308, P309, P310, P311, P312, P313, and from the new gradient control wells constructed under this remedy. These samples will be analyzed for the carcinogenic PAH and other PAH listed in Appendix A of the CD/RAP. The wells to be sampled and the frequency of sampling will be re-evaluated after the five year period. Water level measurements will be taken at all the above wells on a quarterly basis for the first year, and semiannually thereafter. If the proposed range of pumping rates is not sufficient to control the spread of contamination, additional wells may be required for gradient control.

Well W422 and the additional wells will initially discharge to the MWCC wastewater treatment plant for treatment of the contaminated ground water. The discharge will be monitored, as stated above, to determine if treatment is necessary to route the discharge to a storm water sewer within approximately three to five years. If necessary, an off-site treatment facility will be built to ensure that the ground water meets NPDES limits. An important aspect of this alternative is continued monitoring of water level and water quality to assess the effectiveness of the gradient control wells.



The selected remedy is consistent with the CD/RAP, Section 9.5 which specifies the installation and operation of one or more gradient control wells to prevent the further spread of ground water exceeding any of the drinking water criteria defined in CD/RAP Section 2.2. Because the CD/RAP requires that the Potentially Responsible Parties (PRP) control the gradient in the Northern Area of the Drift Aquifer and specifies this particular remedial action, the analysis of this alternative builds on various earlier studies, referenced in the CD/RAP, that developed and screened alternatives.

#### 10. Statutory Determinations

The selected remedy must satisfy the requirements of Section 121 of CERCLA, which are:

- Protect human health and the environment;
- Comply with ARARs or justify a waiver;
- Be cost effective;
- Utilize permanent solutions and alternative technologies or resource recovery technologies to the maximum extent practical; and
- Satisfy the preference for treatment as a principal element or explain why preference was not satisfied.

#### Protection of Human Health and the Environment

The selected remedy provides overall protection of human health and the environment by limiting the spread of contamination within the aquifer. The most important effect of this remedy is to provide protection to

uncontaminated portions of the Northern Area of the Drift Aquifer, thus achieving overall protection of the environment.

#### Compliance with ARARs

The selected alternative will meet all ARARs of federal law or more stringent state laws. The following discussion provides details of the ARARs that will be met by this remedial action.

- Safe Drinking Water Act (SDWA)

As previously discussed in Section VII B of this ROD, the Drinking Water Criteria developed for this Site are a TBC. The remedial action is required by the CD/RAP to prevent the spread of contaminated ground water in the aquifer that exceeds these Drinking Water Criteria.

- Clean Water Act (CWA)

Surface water discharge criteria for the Site are set forth in Section VII B of this ROD. Treatment of the discharge from well W422 will initially occur at the MWCC wastewater treatment plant. The discharge from the Site will comply with the pretreatment requirements of the CWA (40 CFR Part 403). In three to five years, the ground water from the gradient control wells may be discharged to a storm sewer. The discharge to the storm sewer will require a NPDES permit which will incorporate the surface water discharge criteria identified above. An off-site treatment facility may be necessary so that the discharge from the wells will meet NPDES permit limits.

- Resource, Conservation and Recovery Act (RCRA)

RCRA may be an ARAR for the Site. If treatment is required for the discharge from the wells, the process will generate "spent carbon." This term refers to GAC contaminated with PAHs. "Spent carbon" will be tested before being returned to the manufacturer for regeneration and reuse. If the testing of the spent carbon determines it to be a hazardous waste as defined by RCRA, and if regulated quantities are generated, then the requirements of RCRA would be ARARs for the Site. The Land Ban requirements of RCRA do not apply to the disposal of spent carbon since the carbon is to be regenerated and reused and no land disposal is contemplated.

- Cost Effectiveness

Well W422 is currently in place and no further costs will be incurred for this well. Remedial costs each additional well will amount to approximately \$370,000 in capital costs. Since the only other alternative that was considered was the No Action alternative, a rigorous cost effective comparison cannot be made. It is unlikely, however, that any other proposed alternative could be more cost effective. Annual operation and maintenance costs will be no more than \$45,000, which is lower than at other sites because of the many other wells currently maintained by the City.

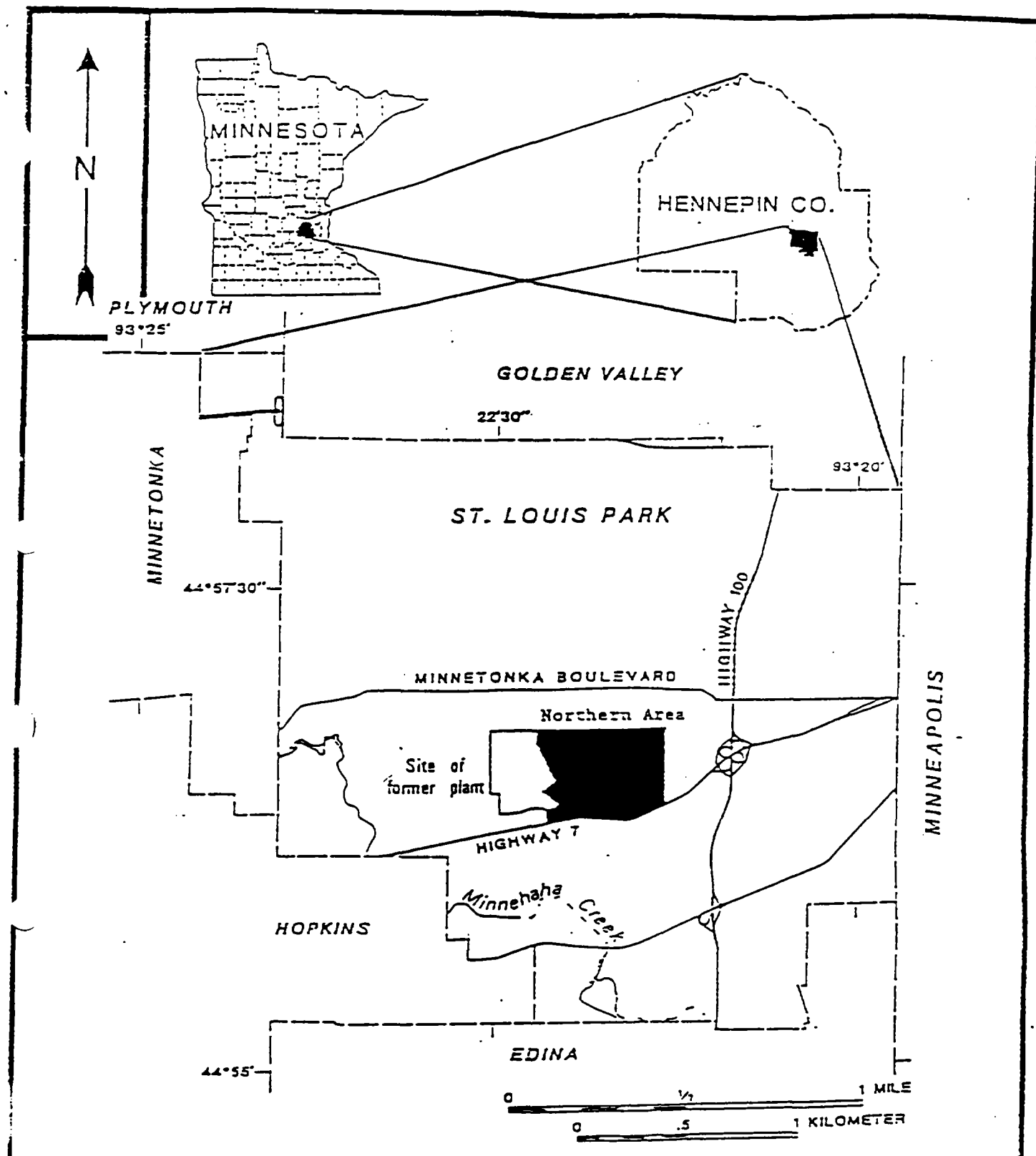
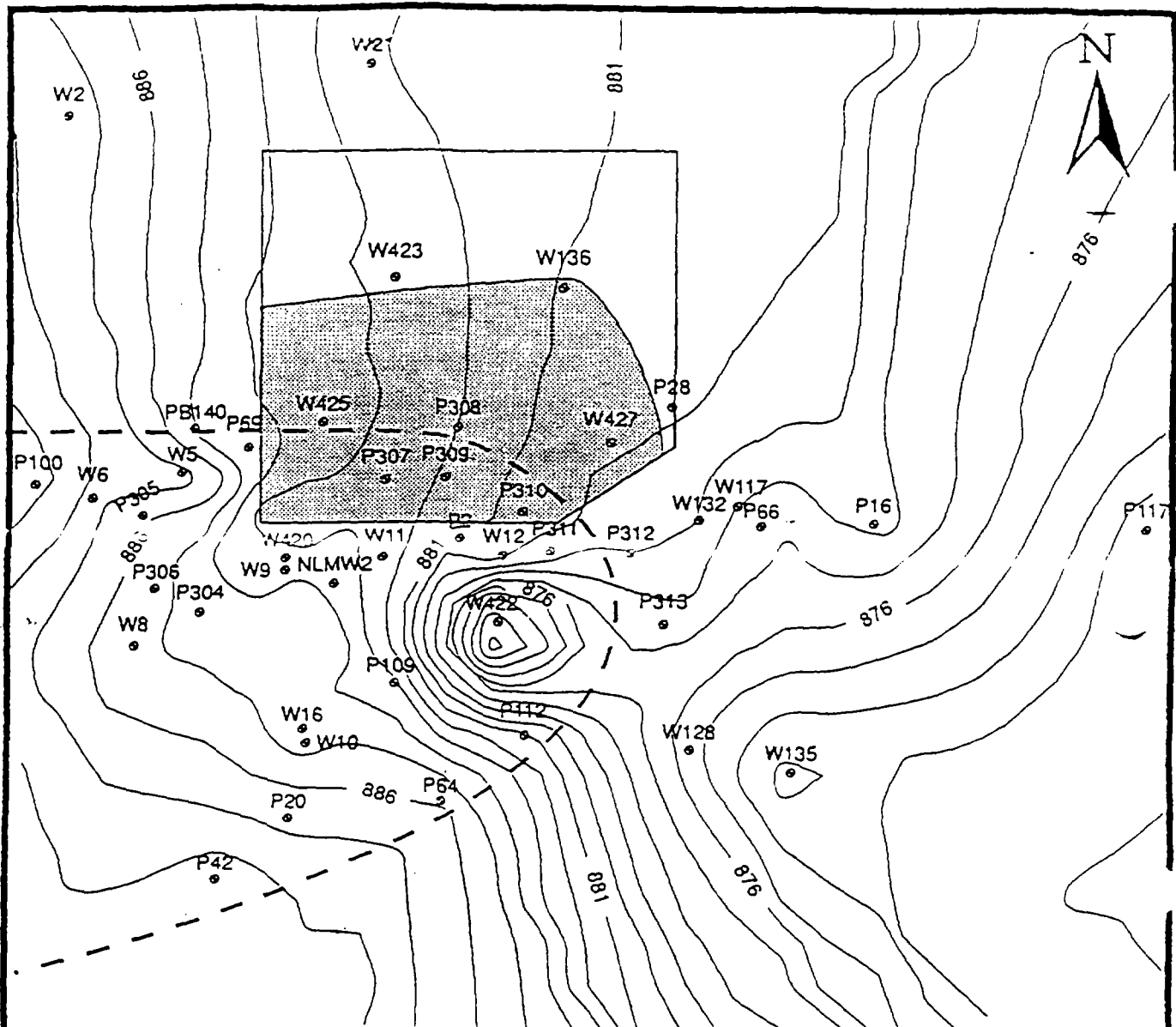


FIGURE 1

Reilly Tar Site and Northern Area  
Location

St. Louis Park, Minnesota

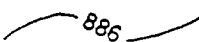
Source: USGS, 1967. Hopkins  
and Minneapolis South, MN  
Quadrangle Maps.  
Photorevised 1972.



#### EXPLANATION



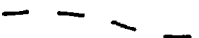
Inferred Area of Contamination  
in the Northern Area, Drift Aquifer



Drift Aquifer Water Level Elevation  
Contours, March 19, 1992



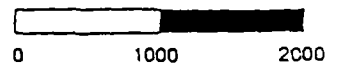
Northern Area Boundary



Well W422 Capture Area

Contours drawn using the  
SURFER contouring program

Scale in feet



**ENSR**<sup>TM</sup>

Consulting and Engineering

Figure 2  
Well 422 Capture Zone, March 19, 1992  
St. Louis Park, Minnesota

DRAWN: EBS

DATE 4/7/92

PROJ. NO.: 1620-007

**ATTACHMENTS**



*Superfund Proposed Plan Fact Sheet for*

# Reilly Tar site

Drift Aquifer, Northern Area

## August 1992

This fact sheet summarizes the U.S. Environmental Protection Agency's (EPA) and Minnesota Pollution Control Agency's (MPCA) joint proposed cleanup plan for the Drift Aquifer portion of the Reilly Tar and Chemical site. This recommendation follows a complete investigation of ground water contamination in the Drift Aquifer and a study of feasible cleanup options.

### What is the history of the site?

Between 1918 and 1972, Republic Creosote, a subsidiary of Reilly Tar and Chemical Corp., operated a coal-tar distillation and wood-preserving plant on an 80-acre site in St. Louis Park. The former site is north of Highway 7 and west of Louisiana Avenue. Oak Park Village condominiums are located on the northern portion of the site.

During those years, wastewater from the distillation process was disposed of in a series of ditches

emptying into what had been a swampy area south of the site. Spills and leaks also contaminated the surface soils, and tar-like materials were found deep in a water well on-site.

These activities contaminated the ground water in the area of the Reilly site with creosote and polynuclear aromatic hydrocarbons (PAHs). Contamination was detected in public water supplies as early as 1974. The site has been the object of a state and federal Superfund investigation and cleanup since the

early 1980s. Although the immediate drinking-water problems have been resolved, ground water in the area is still contaminated.

In 1986, the former owners of the Reilly site, along with the City of St. Louis Park, signed a Consent Decree with the EPA and MPCA. Under this agreement, the parties responsible for the site are to continue investigating the extent of the problem and conduct necessary cleanup actions. The cleanup plan for a

## THE MPCA WANTS YOUR OPINION

The MPCA is asking for public comments on this proposed plan between August 29 and September 28, 1992. The MPCA will present the plan at a public meeting on September 9th, at 7:00 p.m. Comments are welcome at the meeting, or by phone or mail during the above period. The meeting will be held at:

St. Louis Park City Hall  
5005 Minnetonka Boulevard  
New Brighton, Minnesota

For more information or to comment on the proposed plan, contact Ralph Pribble in the MPCA's Public Information Office, 296-7792.

part of the site, the Northern Area of the Drift Aquifer, is now ready for public comment.

**What is meant by the "Drift Aquifer" and the "Northern Area?"**

The Reilly site is underlain by five separate aquifers (layers of earth and porous rock containing ground water). These aquifers are stacked atop one another, separated by various confining layers, going down hundreds of feet below the surface. Most of them are contaminated to varying degrees in the area of the site. Because the ground water in each aquifer "behaves" differently, they are being addressed separately. Each aquifer has or will have its own cleanup plan, and the plan for the Northern Area of the Drift aquifer is now ready for public comment.

The Drift aquifer lies between 90 and 100 feet below the surface. There are no wells in the area that use the Drift for drinking water. But the contamination in this aquifer needs to be addressed because it has the potential to spread to other drinking water supplies and/or aquifers. The proposed plan detailed below is specifically intended to limit the further spread of contamination in an area called the Northern Area of the Drift Aquifer. The Northern Area is bordered by West 32nd

Street on the north, Alabama Avenue on the east, Highway 7 on the south, and Louisiana Avenue on the west.

**What is the proposed plan for the Drift aquifer?**

A pumpout well (designated as well W422) has been operating in the Drift aquifer since 1987 at the rate of 40 gallons per minute. This well acts to control the source of the contamination in the aquifer; that is, it limits the further spread of contaminated ground water. Water from this well is discharged directly to the sanitary sewer system. (The low levels of PAHs it contains are biodegradable in the Metropolitan Waste Control Commission's treatment plant, and the discharge is permitted by the MWCC). This well was specified in the Consent Decree. The decree also specified further study of the Northern Area. That study has been completed and a proposed cleanup plan now has been selected.

The study of the Northern Area concluded that W422 cannot be pumped at a rate sufficient to control ground water flow over the Northern Area. Therefore, the proposed plan for the Northern Area of the Drift is to continue using W422 for its intended purpose but to augment it with one or more additional pumping wells. One additional well will be installed at first;

after its performance is observed, the need for further wells will be evaluated.

**Why was this plan chosen?**

Remedies in Superfund cleanups are evaluated against a number of criteria. The proposed plan was carefully considered in light of the following criteria:

1. This remedy provides overall protection of human health and the environment by limiting the further spread of contamination within the aquifer.
2. Applicable local requirements are complied with in that the water will meet state surface-water criteria when discharged from the MWCC's treatment plant.
3. The toxicity, volume, and mobility of the contaminants in the aquifer will be effectively reduced over time by the pump-out.
4. The remedy will provide for long-term effectiveness and permanence by ensuring that the pump-out will continue as long as necessary to prevent the further spread of contamination in the aquifer.
5. The construction and implementation of this remedy presents no worker or community exposure, nor any adverse environmental impacts.



6. The technology for this remedy is proven, cost-effective, reliable, and easy to maintain.

7. The final criteria are state and community acceptance. The MPCA prefers this remedy, and now the community has an opportunity to review and comment on the proposed remedy before it becomes final.

**What's the next step?**

The MPCA is holding a 30-day public comment period on this proposed plan, from August 29th through September 28th, 1992. The comment period includes a public meeting (see box on first page) at which the MPCA will discuss the proposed plan. Following the public comment period, the MPCA will finalize the cleanup alternatives for the site after considering the comments received. The MPCA's response to comments will be available for review at the St. Louis Park Public Library, along with the Record of Decision for the site, which documents the reasons for this cleanup plan.

**For more information**

The complete reports of the investigation and study of response alternatives for the Northern Area are available for review at the MPCA's St. Paul headquarters. In addition, the EPA maintains an Information Repository containing these documents at the St. Louis Public Library. The library is located at 3240 Library Lane in St. Louis Park, Minnesota.

Requests for information or comments on the proposed cleanup plan should be addressed to:

Ralph Pribble  
MPCA Public Information  
Office  
520 Lafayette Road  
St. Paul, MN 55155  
(612) 296-7792

Comments should be phoned in or postmarked no later than September 28, 1992.

# News Release

Minnesota Pollution Control Agency  
520 Lafayette Road, St. Paul, Minnesota 55155



Printed on Recycled Paper

August 26, 1992  
For immediate release

Contact: Ralph Pribble, (612) 296-7792

## MPCA PROPOSES CLEANUP FOR PART OF REILLY TAR SITE

The Minnesota Pollution Control Agency (MPCA) is seeking public comment on a proposal to deal with part of the ground-water contamination related to the Reilly Tar Superfund site in St. Louis Park. The agency has scheduled a public meeting for interested parties to discuss the plan.

The proposal aims to limit the further spread of contaminated ground water in an area called the Northern Area of the Drift Aquifer. The Drift, one of five aquifers beneath the Reilly site, lies between 90 and 100 feet below ground. The Northern Area of the Drift aquifer is bordered by West 32nd Street on the north, Alabama Avenue on the east, Highway 7 on the south, and Louisiana Avenue on the west.

The MPCA proposes to install one or more ground-water extraction wells in the Northern Area. Water pumped from the wells would be discharged directly to the sanitary sewer system for treatment at the Metropolitan Waste Control Commission's main treatment plant in St. Paul. The additional well(s) would augment a single well that has been pumping the Northern Area of the Drift since 1987; the MPCA has determined that well is unable to control the contamination alone.

The Reilly Tar site has been the object of a state and federal Superfund cleanup since the early 1980s. Ground water in the area is contaminated from operations of a former creosote plant on the site (northwest of Highway 7 and Louisiana Avenue) owned by the Reilly Tar and Chemical Corporation. Other contaminated aquifers at the site are being cleaned up under separate plans.

The MPCA will present the proposal for public comment at 7:00 p.m. on September 9th, in the Community Room of the St. Louis Park City Offices, 5005 Minnetonka Boulevard. The plan is open for comment through September 28, 1992. For more information about the cleanup plan or the Reilly site, contact Ralph Pribble at the MPCA, 296-7792.

###

MN Pollution Control Agency  
520 Lafayette Road  
St Paul, MN 55155  
ATTN: Ralph Pribble

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86 LINES

**203** Legal Notices

**PUBLIC MEETING/  
COMMENT SOUGHT**

The Minnesota Pollution  
Control Agency (MPCA)  
and U.S. Environmental  
Protection Agency (EPA)  
seek public comment on a  
proposed remedy for the  
Reilly Tar Superfund site  
St. Louis Park, Minnesota

The MPCA and EPA are seeking public comment on a proposed remedy (cleanup plan) for ground-water contamination related to the Reilly Tar site in the Northern Area of the Drift Aquifer. The Northern Area is bordered by West 32nd Street on the north, Alabama Avenue on the east, Highway 7 on the south, and Louisiana Avenue on the west.

The MPCA and EPA propose to install one or more ground-water extraction wells in the Northern Area in order to limit the further spread of contaminants in this area. The discharge would be routed directly to the sanitary sewer for treatment at the Metropolitan Waste Control Commission's main treatment facility. A copy of this proposed remedy, along with other documents relating to the site, is available for public review at the St. Louis Park Community Library, 3240 Library Lane, St. Louis Park.

This proposal has been evaluated for its ability to protect human health; comply with environmental regulations; prevent the spread of the contamination; and reduce the toxicity, mobility, and volume of the contaminants. The MPCA has also considered the plan's long-term effectiveness, cost effectiveness, and technical feasibility. After the public comment period, the agencies will also consider the plan's acceptability to the public.

Interested parties are invited to comment on this proposal at either a public meeting on September 9th, 7:00 p.m. in the first floor community room of the St. Louis Park City Offices, 5005 Minnetonka Blvd., St. Louis Park, or in writing to:

Ralph Pribble  
MPCA Public  
Information Office  
520 Lafayette Road  
St. Paul, MN 55155  
(612) 296-7792

The proposed remedy is open for public comment from August 29 through September 28, 1992.

**STAR TRIBUNE**  
a division of Cowles Media Company

**STATE OF MINNESOTA } ss.  
COUNTY OF HENNEPIN }**

**AFFIDAVIT OF PUBLICATION**

Karen Williams being duly sworn, on oath says he/she is and during all times herein stated has been an employee of the Star Tribune, publisher and printer of the newspaper, published 7 days a week, known as Star Tribune and has full knowledge of the facts herein stated as follows:

(1) Said Newspaper is printed in the English language in newspaper format and in column and sheet form equivalent in printed space to at least 1200 square inches. (2) Said newspaper is printed daily and is distributed at least five days each week. (3) Said newspaper has 25 per cent of its news columns devoted to news of local interest to the community which it purports to serve and does not wholly duplicate any other publication. (4) Said newspaper is circulated in and near the municipality which it purports to serve, has at least 500 copies regularly delivered to paying subscribers and has entry as second-class matter in its local post office. (5) Said Newspaper purports to serve the city of Minneapolis and vicinity in the County of Hennepin and has its know office of issue in the City of Minneapolis, in said county. (6) Said newspaper files a copy of each issue immediately with the State Historical Society. (7) Said newspaper is made available at single or subscription prices to any person, partnership or other unincorporated association requesting the newspaper and making the applicable payment. (8) Said newspaper has complied with all foregoing conditions for at least one year.

He/She further states on oath that the printed copy of the matter hereto attached as a part hereof was cut from the columns of the Star Tribune and the Sunday Morning Tribune, and was printed and published therein in the English language, once each week, for one day successive weeks; that it was first so published on Saturday the 29th day of August, 1992 and was thereafter printed and published on every \_\_\_\_\_ to and including \_\_\_\_\_ the \_\_\_\_\_ day of \_\_\_\_\_, and that the following is a printed copy of the lower case alphabet from A to Z, both inclusive, and is hereby acknowledged as being the size and kind of type used in the composition and publication of said notice, to wit:

abcdefghijklmnopqrstuvwxyz

Karen Williams  
Karen Williams

subscribed and sworn to before me this 1 day of September, 1992

Kristen L. Schwab

