



United States
Environmental Protection
Agency

Office of Public Affairs
Region 5
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

Illinois, Indiana
Michigan, Minnesota
Ohio, Wisconsin

EPA Answers Questions Most Often Asked by Residents West KL Avenue Landfill Superfund Site

Oshtemo Township, Michigan

December 1999

Background

The West KL Avenue Landfill was operated as a private dump from approximately 1955 to 1960. In 1960, Oshtemo Township leased the property from the owner for use as a sanitary landfill. In 1968, the County of Kalamazoo bought the site to use as a countywide sanitary landfill. In 1979, the Michigan Department of Environmental Quality (MDEQ) closed the landfill due to ground-water contamination. A county-led investigation revealed ground-water contamination in several monitoring and domestic water wells west and southwest of the landfill. The KL Avenue Group (a group of parties potentially responsible for contamination at the site) provided a safe water supply to homes affected by the contamination to protect residents from contact with contaminated ground water. The county also began monitoring private wells in the path of ground-water flow from the landfill.

In October 1998, county monitoring personnel detected ground-water contamination in the Springwood Hills Subdivision. In response, the KL Avenue Group agreed to pay to extend city water lines to a service zone of homes with ground-water contamination. The United States Environmental Protection Agency (EPA) is currently working with MDEQ and the KL Avenue Group to develop a long-term plan for monitoring ground water and cleanup of the landfill.

Who chose the service zone?

In 1998, MDEQ followed state law and designated a service zone for the affected area. Designating the service zone allowed MDEQ to use state money to provide an alternate water supply.

Why did they choose that zone?

Only homes with contaminated wells are required to be included in the service zone. Originally, the service zone included only the wells where site-related chemicals were detected and wells that were most likely to become contaminated. After discussions with the KL Avenue Group, additional wells were added in the area that had no contaminants detected in the ground water. This resulted in the current service zone on page 2. The KL Avenue Group has gone beyond what EPA or MDEQ legally requires.

Will a health survey be conducted?

The Agency for Toxic Substances and Disease Registries (ATSDR) is working with EPA to determine whether a health survey is warranted. ATSDR performs health assessments and health surveys at Superfund sites. Once the information has been reviewed, EPA and ATSDR will discuss whether a health survey is warranted. Results of the discussions will be made available to the public.

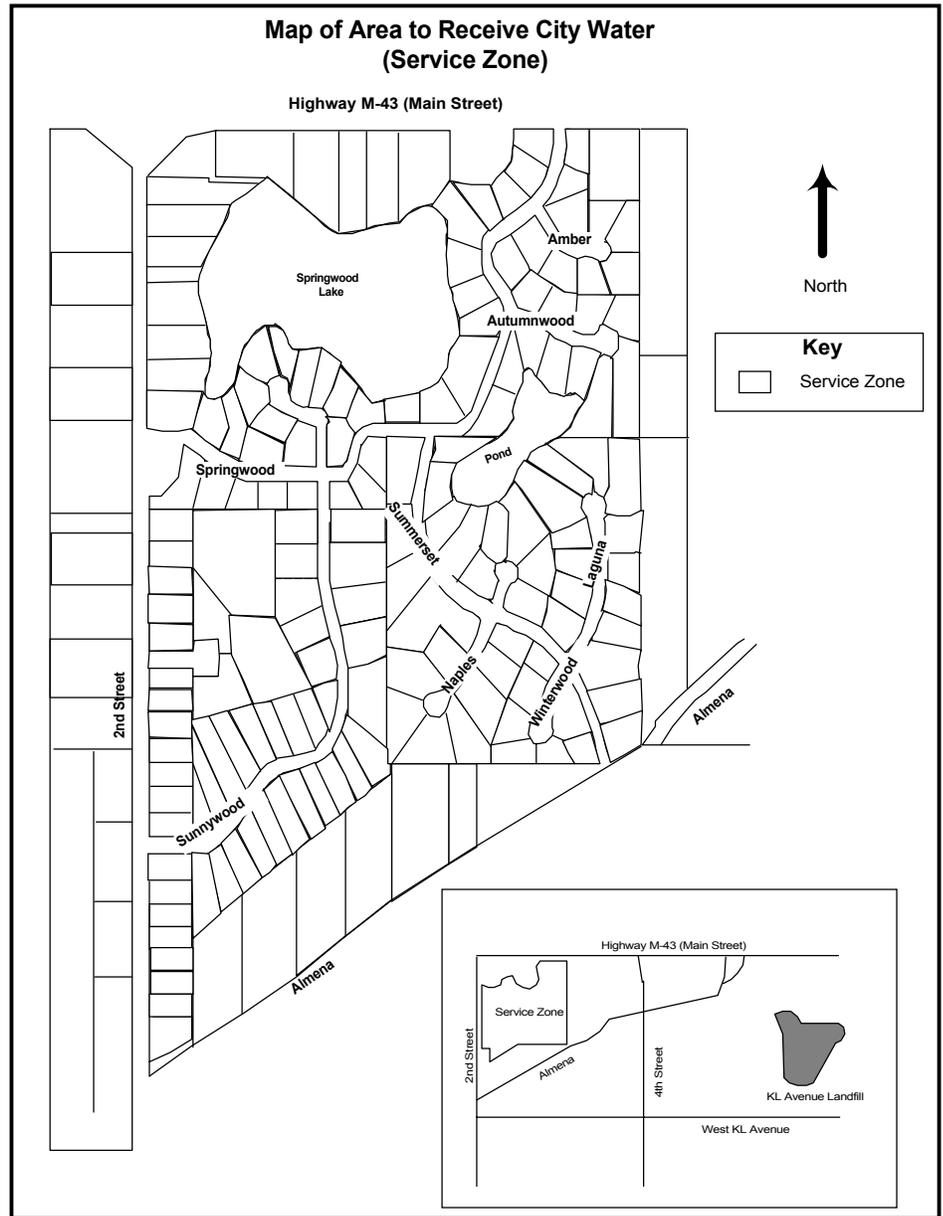
I live just outside the service zone. Why am I not getting city water?

Water in all of the homes outside the service zone is considered safe to use. EPA does not have legal right to force the KL Avenue Group to connect houses where contamination has not been detected or where there is not an immediate threat of contamination.

What is being done to protect residents in the future? Will residential wells outside the service zone be tested? If so, where and how often?

EPA, MDEQ, and the KL Avenue Group are designing a long-term monitoring program to locate and track the contaminated ground water. The program will include sampling wells in and near the service zone. These wells will be carefully picked to locate the plume of contaminated ground water and track its movement. A plume is contaminated ground water flowing from a specific source. Plumes can move vertically and horizontally. The KL Avenue Group will survey the ground-water elevation at selected residential wells. The survey results will be used to determine which wells should be included in the monitoring program. EPA wants to finalize the monitoring program within the next two months.

As part of the monitoring program, selected wells will be tested four times a year. The number of tests



and number of wells sampled may change. Right now, the wells associated with the KL Avenue Landfill Site are sampled two times a year.

What if contamination moves outside the service zone?

If the contamination moves outside the service zone, EPA will make sure that residents do not come into contact with unsafe levels contaminated ground water. If additional houses need another water supply due to contamination from the landfill, it will be provided at no cost to the property owner. The KL Avenue Group will pay for the alternate water supply. This is required by the legal agreement they signed with EPA.

People have heard that all the KL Avenue Group is going to do is extend the water lines to the current service zone. After this, there will be no money to do anything else.

The KL Avenue Group agreed to perform the entire cleanup of the West KL Avenue Landfill Site. This includes dealing with the entire plume of ground-water contamination. Providing city water service to the houses in the Springwood Hills Subdivision is only part of the work to be done at the site. The KL Avenue Group will pay for the entire cleanup.

How much does a monitoring well cost?

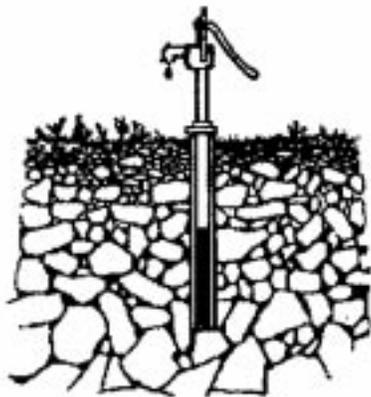
Prices for well construction varies depending on the materials used, the depth of the well, type of equipment used for drilling, etc. EPA and MDEQ estimated the cost of constructing and outfitting a 200-foot deep well at \$15,000 to \$20,000.

Would it be cheaper to connect everyone to city water?

Connecting more homes to city water would not save the cost of installing and sampling monitoring wells. Regardless of how far the water lines are extended, monitoring wells would have to be installed and sampled.

What is ground water?

Ground water is water under the ground's surface that fills spaces in soil or between rocks. It may be used as a source of drinking water if there is enough and it is clean. An aquifer is a layer of rock, sand, or gravel below the ground surface where all open spaces between rock or soil grains are filled with water.



What are the depths of the residential and monitoring wells being tested in the Springwood Hills area?

Generally, residential wells in the Springwood Hills area are between 70 and 140 feet deep. The monitoring wells in the Springwood Hills area range from 43 to 220 feet deep.

How deep is the contamination plume?

The depth of the plume may vary from location to location due to the geology of the area. For example, the plume in the Springwood Hills area has been found between 70 and 140 feet deep. It appears that two layers of clay sandwich and restrict the ground-water contamination below the subdivision from moving up or down. Near Dustin Lake, the plume has been found 200 feet deep. EPA will know more about the depth of the plume once the long-term monitoring program gets started.

If I want to have my well tested and pay for it myself, what type of test should I request?

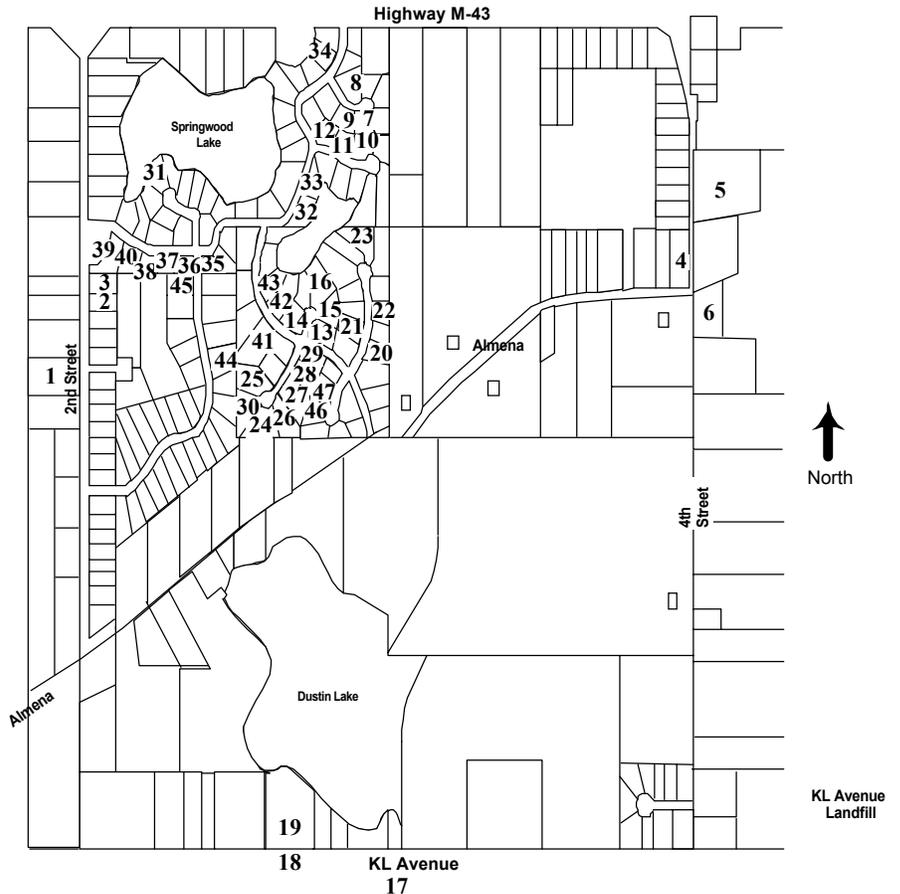
In the phone book, look under Environmental and Ecological Services for a certified water laboratory. Request a volatile organic compound analysis according to EPA test method 524.2. Also request that they test for tert-butanol and tetrahydrofuran (THF).

How fast is the ground water moving? How fast are the contaminants moving?

There are two aquifers below the site. The shallow aquifer is primarily the one affected by the landfill contamination. Ground water in the shallow aquifer is flowing at about a foot a day. At one time, it looked like the ground-water contamination plume had stopped moving and was shrinking. Several things were probably affecting the contaminants movement, including the natural breakdown of the contaminants, the contaminants adhering to materials in the aquifer (i.e. rocks, etc.), and/or dilution. EPA will use the long-term monitoring program to define and track the plume of contaminated ground water. Once the plume is defined, EPA will have more information on how fast it is moving and in what direction.

Map of Residential Wells with Measurable Levels of Contamination (as of November 18, 1999)

Well No.	Highest Level of Contaminant in parts per billion (ppb)			
	1,2 DCA	Vinyl Cl	THF	1,1 DCA
1	3.2	ND	5	4.8
2	0.7	ND	7	0.9
3	1.7	ND	6	3.7
4	ND	ND	8	ND
5	ND	ND	50	ND
6	ND	ND	ND	0.9
7	ND	ND	ND	3.4
8	ND	ND	5	1.1
9	ND	ND	ND	4.3
10	ND	ND	ND	3.8
11	3.3	ND	ND	ND
12	0.7	ND	ND	19.7
13	4.3	ND	23	11
14	2.6	ND	32	5.2
15	TR	ND	10	3.3
16	2.9	ND	65	19.9
17	ND	ND	ND	0.7
18	ND	ND	ND	1.9
19	ND	ND	ND	1
20	1.1	TR	12	1.1
21	4.7	TR	ND	3.9
22	ND	ND	6	ND
23	ND	ND	21	5.8
24	1.8	ND	7	2.2
25	5	0.5	8	13.1
26	ND	ND	ND	0.5
27	16.7	4.5	55	34.1
28	43	4.1	120	85
29	47	4.8	150	97
30	3	ND	ND	4.1
31	ND	ND	7	ND
32	0.5	ND	7	11.5
33	ND	ND	ND	5.6
34	ND	ND	ND	0.9
35	ND	ND	6	1.1
36	TR	ND	7	1.9
37	0.7	ND	8	2.5
38	1.6	ND	8	4.3
39	ND	ND	ND	0.8
40	1.4	ND	5	5.6
41	1	ND	9	4
42	TR	ND	25	7.8
43	TR	ND	ND	1.9
44	3.1	0.5	15	6.5
45	14	1.7	59	20
46	TR	ND	ND	0.5
47	1.7	ND	ND	4.7



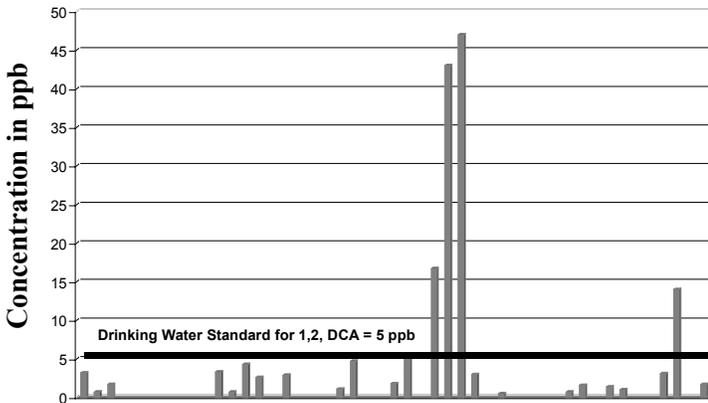
Key	
1,2 DCA	= 1,2 Dichloroethane
Vinyl Cl	= Vinyl Chloride
THF	= Tetrahydrofuran
1,1 DCA	= 1,1 Dichloroethane
TR	= Trace amount
ND	= Non detectable

Note: The numbering system used here is different from the one used on the Kalamazoo County web site. However, the numbers follow in the same order. For example, Well No. 1 here corresponds with the first well on the County's list to have one of these four contaminants detected, and so on.

Summary of Residential Well Sampling Results

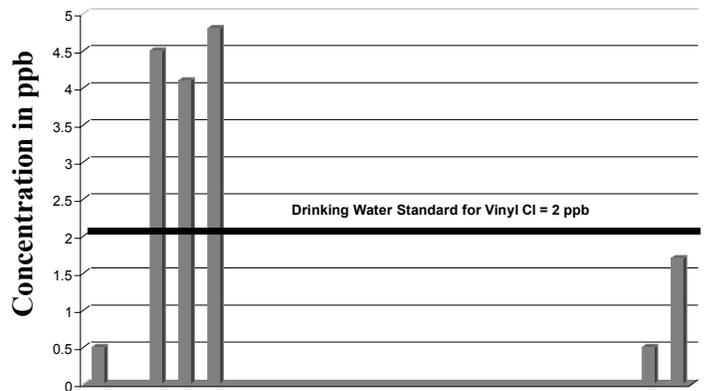
From February 1997 to October 1999, Kalamazoo County collected 285 water samples from residential wells. The samples were analyzed for the presence of contaminants including 1,2 DCA (1,2 Dichloroethane), Vinyl Cl (Vinyl Chloride), THF (Tetrahydrofuran), and 1,1 Dichloroethane. Of the 178 wells sampled, 47 contained contaminants in measurable amounts. The graphs below contain summary statistics for those 47 wells.

Concentration of 1,2 DCA in Residential Wells



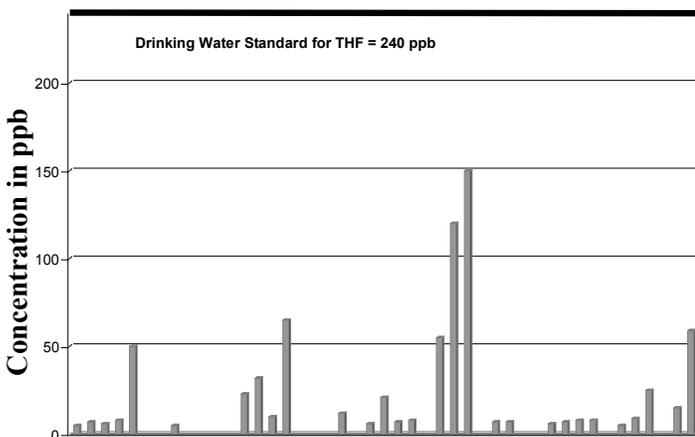
Of the 24 wells, 5 contain levels at or above drinking water standards.

Concentration of Vinyl Chloride in Residential Wells



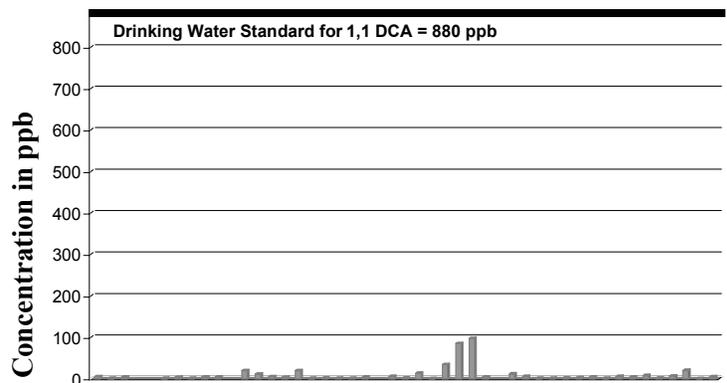
Of the 6 wells, 3 contain levels at or above drinking water standards.

Concentration of THF in Residential Wells



Of the 29 wells, 0 contain levels at or above drinking water standards.

Concentration of 1,1 DCA in Residential Wells



Of the 42 wells, 0 contain levels at or above drinking water standards.

Most wells had no contaminants detected.

EPA will present similar information on monitoring well results in future fact sheets.

Why, after 20 years, is the landfill not cleaned up?

EPA tries to clean up Superfund sites quickly. However, with the technical and legal issues involved in a Superfund site, it takes time to determine the total extent of the contamination problem and to determine the appropriate remedy for the site. If the contamination poses an immediate threat to human health, or the environment, an immediate action is taken to remove the threat. When it was determined that private wells were impacted by the ground-water contamination, clean water was supplied to those homes.

Since the West KL Avenue Landfill was placed on the National Priorities List (the list of hazardous waste sites eligible for investigation and cleanup under the Superfund program), numerous activities have taken place. Between 1982 and 1990, EPA did a study, called a Remedial Investigation/Feasibility Study, to find out what contaminants were present, where they were, and to evaluate cleanup options. A cleanup plan was selected for the site in 1990. This plan included covering the landfill with clay and pumping out and treating the ground water. Between 1990 and 1992, EPA negotiated with the numerous parties thought to be responsible for the contamination to get them to do the cleanup. In 1992, the KL Avenue Group and EPA entered into a Consent Order. This order requires the KL Avenue

Group to do the cleanup. The Consent Order also required the KL Avenue Group to further study the extent of the ground-water contamination. Those studies took place between 1990 and 1994. In 1994, the KL Avenue Group approached EPA with a plan to see if the contamination is naturally breaking down. Information from the studies showed that the contaminants might be breaking down naturally in the landfill and ground water. If the contaminants were breaking down naturally in the landfill, then putting the clay on top of the landfill might stop this natural process. If contaminants were breaking down naturally in the ground water, then pumping and treating of the ground water might not be necessary. The cleanup remedy was put on hold while EPA and the KL Avenue Group studied the natural breakdown theory. Since that time, the KL Avenue Group has been conducting studies on the ground water and waste in the landfill to see if the plume had stopped moving and/or was shrinking. The studies were also to determine if the contaminants in the landfill were breaking down. Those studies are on-going. Within the next year or so, EPA hopes to conclude the studies. EPA will then decide if putting the clay on top of the landfill and pumping and treating the ground water are appropriate cleanup remedies for the site or if newer technologies might work better.

How long have people been drinking the contaminated water in Springwood Hills?

Unfortunately, EPA does not have enough information to answer this question. Once the ground-water flow patterns are determined, it might be possible to determine when the contamination reached the Springwood Hills Subdivision. It may never be possible to provide a good answer to that question.

The table on page 4 and the graphs on page 5 show information on the maximum levels of contamination found in the Springwood Hills area. It is important to note that the majority of the wells tested had no contamination detected in them.

Is Springwood Lake contaminated?

The surface water of Springwood Lake was sampled on August 27, 1999. No contaminants were detected.

Is Dustin Lake contaminated?

Studies show no impact on Dustin Lake from ground-water contamination due to the landfill.

Are there any municipal wells in Oshtemo Township? If so, are they affected?

There are no municipal wells in Oshtemo Township. More importantly, there are no municipal wells in the path of the flow of the ground water from the West KL Avenue Landfill. The closest municipal wells are to the east and in a different watershed.

How are vacant lots being addressed?

Free hook up to city water will only be provided to owners that applied for well permits prior to MDEQ establishing the service zone.

Availability Sessions

EPA will hold an availability session in February to explain the on-going water line installation as well as the investigation and cleanup of the landfill and ground water. Availability sessions are informal, open-house style meetings during which members of the community can meet one-on-one with EPA representatives.

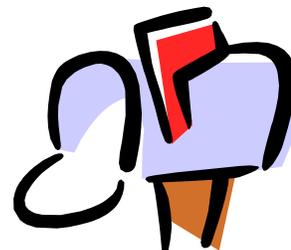
Date: Wednesday, February 9, 2000

Location: Oshtemo Township Building
7275 W. Main Street
Kalamazoo, MI

Time: 5:30 p.m. - 8:00 p.m.

Mailing List

If you did not receive this fact sheet in the mail, you are not on our mailing list. If you would like to receive fact sheets, progress reports, and community meeting information for the West KL Avenue Landfill Superfund Site, please complete this form and mail to:



Jennifer Ostermeier
Community Involvement Coordinator
Office of Public Affairs (P-19J)
EPA Region 5
77 West Jackson Boulevard
Chicago, IL 60604-3590

Name _____
Address _____
City _____
State _____ Zip _____
Phone _____
Affiliation _____
Email _____

E-Mail List

If you would like to be placed on our email distribution list for the West KL Avenue Landfill Site, please add you email address above. This will allow us to send you information on the site as it becomes available.



Questions?

If you have a question that was not answered in this fact sheet, send, email, or phone your question to Jennifer Ostermeier, and we will try and answer it in future fact sheets.

Contact Information

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Information Repository

EPA has established a file called an information repository for the West KL Avenue Landfill Superfund Site. The information repository contains documents related to the project and the Superfund Program. The repository is located at:

Oshtemo Branch
Kalamazoo Public Library
7265 West Main Street
Kalamazoo, MI

Web Sites

This and additional updates can also be found on the following web sites:

www.kalcounty.com

Click on Department Services, Human Services Department, and then What's New to reach information listed under Springwood Lake.

www.epa.gov/region5/sites/

Scroll through the list to find West KL Avenue Landfill Superfund Site.



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