HEALTH CONSULTATION

Response to Public Comments

WEST KL AVENUE LANDFILL – RESPONSE TO RECORD OF DECISION AMENDMENT

KALAMAZOO, KALAMAZOO COUNTY, MICHIGAN

CERCLIS NO. MID980506463

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Prepared by

Michigan Department of Community Health
Under a Cooperative Agreement with the
Agency for Toxic Substances and Disease Registry

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Summary

The West KL Avenue Landfill Superfund Site in Kalamazoo, Michigan has been a National Priorities List site since 1982. The U.S. Environmental Protection Agency (EPA) has amended the site clean-up plan, known as the Record of Decision (ROD). EPA will require that the Potentially Responsible Parties supply municipal water service to homes in the area ahead of a contaminated groundwater plume in the area (primarily due to leaching from the landfill) so that a buffer zone is created should the plume move further west. The Michigan Department of Community Health (MDCH) prepared this consultation under a cooperative agreement with the Agency for Toxic Substances and Disease Registry (ATSDR). This consultation was written at the request of EPA to respond to community health concerns voiced at an October 2002 public meeting regarding the amendment.

The amendment to the ROD is proactive, designed to prevent possible future exposures to contaminated groundwater in the described area, and poses no public health hazard. MDCH and ATSDR support this protective action.

The groundwater contamination is likely not responsible for the health issues presented at the October 2002 public meeting. MDCH and ATSDR recommended a follow-up meeting with the community during the public comment period for this health consultation to ensure that all concerns have been voiced and addressed. This meeting occurred June 4, 2003.

This health consultation also discusses the issue regarding the permeable cap currently in place on the landfill and its replacement with the impermeable cap stipulated in the ROD and mandated by state environmental law. While health agencies do not have the regulatory authority to mandate a specific remedial action at Superfund sites, MDCH and ATSDR concur that remedial action should be carried out at this site to prevent potential future exposures to contamination in the groundwater.

Purpose and Health Issues

The purpose of this public health consultation is to comment on EPA's amendment to the Record of Decision (ROD) for West KL Avenue Landfill in Kalamazoo, Kalamazoo County, Michigan (Figure 1), and to respond to community health concerns regarding the landfill. The consultation also discusses the controversy regarding the landfill's cap permeability. Appendices A and B list the comments, questions, and responses.

Community questions addressed in the Community Health Concerns section of this consultation include:

1. Is groundwater south of KL Avenue, specifically along 4th Avenue, safe to drink now? Could the plume from the landfill impact it in the future?
2. Could the groundwater contamination cause reproductive problems such as spontaneous abortions or stillbirths?

3. Is the incidence of cancer or other diseases elevated in the area? If so, could this be a result of the groundwater contamination?

The Michigan Department of Community Health (MDCH) conducted this evaluation for the Agency for Toxic Substances and Disease Registry (ATSDR). MDCH works cooperatively with ATSDR in assessing public health implications at sites of environmental contamination.

Background

West KL Avenue Landfill, also known as KL or K & L Avenue Landfill, is a former sanitary landfill located at 8606 West KL Avenue in Oshtemo Township, Kalamazoo County, Michigan, about 7 miles west of the city of Kalamazoo, Michigan. It operated from the 1960s until 1979 and received local garbage, solid and liquid industrial waste, and hospital waste. The amount and identity of the wide array of wastes placed in the landfill were often not recorded. Kalamazoo County closed the landfill in 1979 by order of the Michigan Department of Natural Resources after volatile organic compounds (VOCs) were detected in residential wells located in the area. A soil/bentonite (permeable) cap was placed over part of the landfill in 1980 to reduce infiltration of rainwater into the wastes, thus retarding contaminant migration (ATSDR 1992).

EPA placed the site on the National Priorities List (NPL) in 1982. Following a Remedial Investigation and Feasibility Study, the Agency signed a ROD that selected a final clean-up for the site, addressing both the landfill's contents and the contaminated groundwater leaching from the landfill. The ROD stipulated that there be a fence erected around the site, that deed restrictions be placed on the landfill property, and that a multi-layer impermeable cap be placed over the landfill. The first two requirements have been met, but the permeable cap that was placed over the landfill in 1980 has remained in place while the Potentially Responsible Parties (PRPs) have investigated the effectiveness of natural attenuation. The ROD also stipulated that groundwater be monitored, that deed restrictions be placed on use of the groundwater and closed residential wells be abandoned properly, and that the groundwater be extracted and treated to meet state clean-up standards. Monitoring efforts are continuing. Deed restrictions are in place, and as municipal water is extended to the area, private wells have been abandoned. Extraction and treatment of the groundwater have not yet begun because of the PRPs' investigations into natural attenuation of the groundwater contamination (EPA 2002a, b).

In 2002, EPA amended the ROD so that municipal water is supplied to homes ahead of the path of the contaminated groundwater. Figure 2 shows the proposed municipal water supply area. Previously, homeowners were allowed to keep using their private wells until testing results indicated that the wells had been impacted by the plume. While Oshemo Township was taking responsibility for installing water mains out to the area, this work did not include the connection of individual homes. EPA believed it appropriate to proactively address the protection of residents ahead of the contamination while the studies on natural attenuation continue (EPA 2002a, b). As part of the regulatory process, EPA held a public meeting for the township residents on October 2,

2002. Following that meeting, EPA asked ATSDR to provide comment on the amendment to the ROD and to address community health concerns.

Upon discussion of the site with the Michigan Department of Environmental Quality (MDEQ) Superfund Section, MDCH learned that the PRPs feel that the permeable cap now in place should be allowed to remain. The PRPs contend that natural attenuation (the degradation that occurs without human intervention) has been changing the groundwater contaminants into less harmful chemicals, and an impermeable cap will only diminish this effect. MDEQ maintains that the state's Part 111 Rules regarding hazardous waste management mandate that the cap be impermeable (2002, M. Henry, MDEQ Remediation and Redevelopment Division [RRD] Superfund Section, personal communication).

Discussion

Amendment to ROD

Among the recommendations made by ATSDR and MDCH (then the Michigan Department of Public Health) in the 1992 Interim Health Assessment for West KL Avenue Landfill was continued monitoring of in-use residential wells near the landfill to ensure that the chemicals in the groundwater were not entering the residents' drinking water supply (ATSDR 1992). Subsequent results from private well and monitoring well testing showed that, over time, the plume was moving westward. Figure 3 shows the extent of the contaminated groundwater in the area around the West KL Avenue Landfill. The area with concentrations of chemicals detected above the EPA Maximum Contaminant Level (MCL), if applicable, or the MDEQ Residential Drinking Water Criteria (DWC) is believed to be stable. It is not known whether the area with concentrations of detected chemicals below the MCL is expanding, stable, or receding.

The MCL is a drinking water level of a chemical that is protective of public health and is an enforceable standard for public water systems. MCLs are deemed protective during a lifetime (70 years) of drinking 2 liters of water per day. Similar to the federal MCL, the state DWC is a drinking water level of a chemical that is considered safe for long-term, daily consumption. DWCs assume that a person drinks 2 liters of water per day but that the exposure duration is only 30 years.

Under certain conditions, VOCs can volatilize from groundwater and soil and enter indoor air through the basement foundation of a house. However, the groundwater aquifer under the West KL Avenue Landfill area is very deep, greater than 70 feet, and volatilization to indoor air is not likely to occur. Therefore, the only exposure pathway of concern is that of drinking water.

The proposed municipal water supply would serve homes where the wells are not yet above the MCL. Based on the historic groundwater data, it is likely that, if hydrogeological conditions remain the same, these homes' wells could exceed the MCL in the future, posing a future health hazard. Therefore, MDCH and ATSDR find this proactive measure to be protective of public health.

Community Health Concerns

Is groundwater south of KL Avenue, specifically along 4th Avenue, safe to drink now? Could the plume from the landfill impact it in the future?

The groundwater monitoring data do not indicate that the contamination has extended south of KL Avenue beyond the lots on that street. MDEQ does not expect the contamination to extend southward. Regional groundwater flow is to the northwest. Therefore the contamination should not affect groundwater south of KL Avenue.

Could the groundwater contamination cause reproductive problems such as spontaneous abortions or stillbirths?

EPA and MDEQ derive the MCL and DWC, respectively, to be very protective over the long-term. It is likely that the concentrations of chemicals in the groundwater would have to be many times greater than those found in private wells around West KL Avenue Landfill to cause the health effects mentioned.

Is the incidence of cancer or other diseases elevated in the area? If so, could this be due to the groundwater contamination?

An extensive cancer incidence data review has not been conducted, however in 1996, MDCH completed a review of breast cancer incidence data that was requested by Kalamazoo County Human Services Department. MDCH looked at diagnoses of individuals living in the 49009 zip code area. This area includes West KL Avenue Landfill. There was no indication of a statistically significant trend of increasing breast cancer (MDCH 1996).

As mentioned in the answer to the previous question, the MCL and DWC are calculated to be very protective over the long-term. The concentrations of chemicals in the groundwater likely would have to be many times greater than those found in private wells around the area to increase the risk of cancer. If residents believe that there is an unusual number of cases of a specific disease in the area, MDCH can review state records to determine if the trend is real (i.e., statistically significant) or only perceived. If the trend is real, however, environmental contamination may not necessarily have caused it. Numerous causes and risk factors can lead to the development of a disease.

Cap Permeability Issue

The PRPs are proposing that the permeable cap now covering the landfill remain in place. The PRPs have conducted several studies evaluating the natural attenuation of the West KL Avenue Landfill contents (EPA 2002b). Some chemicals, such as benzene, detected during earlier (1980s) sampling events are still present in the plume and are still being released from the landfill above state criteria. However, other chemicals, such as acetone, detected in earlier analyses of the groundwater are no longer present. Along with the evidence of the natural attenuation, the PRPs have also argued that the activities of clearing the current cap, hauling in fill to achieve an appropriate contour, and recapping the site would cause unacceptable physical hazards. These hazards include the danger inherent in large-scale excavation and construction operations as well as increased traffic in the area, especially by heavy trucks. Not only would site workers be at risk, but

area residents would also experience at least the traffic hazards. Also, cap replacement activity would likely generate dusts, at best a nuisance to nearby residents and at worst a trigger to those with asthma or other breathing difficulties. If the contents of the landfill are exposed, VOCs may be released into the air, exposing workers and downwind residents to chemicals, possibly at levels of concern.

MDEQ maintains that the Part 111 Rules regarding hazardous waste management mandate that landfills such as West KL Avenue be covered with an impermeable cap. Without water entering the landfill, the chemical contents of the landfill should not leach into the groundwater. Therefore, the plume would recede, eventually "collapsing" in on itself. Although drinking water supplies are being protected by the piping of municipal water to the area, surface waters could be impacted despite the depth of the aquifer. Specifically, pore-water (groundwater) sampling below Dustin Lake revealed the presence of several VOCs and tetrahydrofuran (2002, M. Henry, MDEQ-RRD, unpublished data; MDEQ 2002). The maximum depth of Dustin Lake is about 10 feet. Because these samples were taken just below the groundwater-surface water interface, MDEQ cannot determine as yet whether the chemicals are expected to enter the lake water. Consequently, MDEQ is investigating Dustin Lake further. Dependent on the outcome of MDEQ's investigation, it is possible that groundwater contaminants could eventually enter and negatively impact Dustin Lake and other surface waters over the plume, leading to direct contact or ecological concerns.

Allowing the permeable cap to remain in place on West KL Avenue Landfill will allow rainwater to continue to infiltrate the landfill and leach chemicals into the groundwater. The uncertainties of allowing the landfill to continue to leach to the groundwater (not knowing what other chemicals might emerge, when the leaching will stop, or if the ecosystem is or will be affected) are counterbalanced by the certainty that capping the landfill properly will contain, or at least significantly reduce the flux of, these chemicals. While the physical hazards caused by cap replacement activities are undesirable, allowing further environmental degradation, which could potentially expose people to these chemicals via dermal contact or ingestion, is more so. Ideally, no exposure would occur. Therefore, ATSDR and MDCH feel that remedial action is necessary to prevent possible future exposure.

ATSDR Child Health Considerations

Children may be at greater risk than adults from exposure to hazardous substances at sites of environmental contamination. Children engage in activities such as playing outdoors and hand-to-mouth behaviors that could increase their intake of hazardous substances. They are shorter than most adults, and therefore breathe dust, soil, and vapors closer to the ground. Their lower body weight and higher intake rate results in a greater dose of hazardous substance per unit of body weight. The developing body systems of children can sustain permanent damage if toxic exposures are high enough during critical growth stages. Even before birth, children are forming the body organs they need to last a lifetime. Injury during key periods of fetal growth and development could lead to malformation of organs (teratogenesis), disruption of function, and premature death. Exposure of the mother could lead to exposure of the fetus, via the placenta, or affect the

fetus because of injury or illness sustained by the mother (ATSDR 1998). The obvious implication for environmental public health is that children can experience substantially greater exposures than adults to toxicants that are present in soil, water, or air.

Extending the municipal water supply as proposed in the amendment will be protective of children living near West KL Avenue Landfill.

Children may have been exposed to contaminants in the groundwater in the past, before their homes were supplied with municipal water, however any exposure likely was short-term and has stopped. The groundwater and private well monitoring program in the area around the West KL Avenue Landfill has been and continues to be a useful tool to ensure that exposure by ingestion does not occur or is stopped. If surface waters, such as Dustin Lake, become impacted, children swimming or wading in those waters may be exposed. However, landfill-related chemicals have not been detected in surface waters, only in sediment porewater as discussed earlier.

If the cap is replaced, children playing in or near KL Avenue may be at risk of injury as a result of the increased traffic; however, their parents or caretakers should be aware of the activity at the landfill and will likely take additional steps to ensure their children's safety. Dust generated during any landfill activity may exacerbate breathing difficulties of asthmatic children; however, they and their parents would be capable of taking steps to alleviate any respiratory problems (e.g., remaining indoors or leaving the area on dusty days, using a bronchodilator when needed). In addition, the state and the USEPA will be requiring dust suppression measures and an air monitoring program be implemented during the construction. Replacing the cap would prevent future exposures and be protective in the long term, whereas dust suppression and traffic concerns are more short-term issues. Upon completion of an impermeable cap, the physical hazards would be removed as well as the potential for exposure to contaminated groundwater or surface water.

Conclusions

The amendment to the ROD is proactive and protective. The action poses no public health hazard. MDCH and ATSDR support this amendment.

The groundwater contamination is likely not responsible for the health issues presented at the October 2002 public meeting. MDCH and ATSDR recommend a follow-up meeting with the community during the public comment period for this health consultation to ensure that all concerns have been voiced and addressed.

This health consultation also discusses the issue regarding the permeable cap currently in place on the landfill and its replacement with the impermeable cap recommended in the ROD and mandated by state environmental law. MDCH and ATSDR do not have regulatory authority to mandate specific remedial actions at Superfund sites but can recommend remediation to prevent potential future exposure. Remedial action is

necessary at the West KL Avenue Landfill site to prevent possible future exposure to contaminated groundwater.

Recommendations

ATSDR and MDCH recommend the following:

1. Proceed with implementation of the ROD amendment. (The amendment was signed in late February 2003.)

2. Address any additional health concerns regarding the landfill and the groundwater.

3. Proceed with the remainder of remediation.

Public Health Action Plan

►EPA, MDEQ, Kalamazoo County, and Oshtemo Township will coordinate efforts to provide municipal water to the area outlined in the ROD amendment.

►MDCH will host a community meeting during the public comment period of this health consultation to receive comments and respond to community health concerns. (This meeting occurred June 4, 2003.)

►The regulatory agencies will decide upon a remediation plan and see that the PRPs implement the plan.

New environmental data, amendments to the ROD, or information concerning the future use of this property may require future health consultations.

Any citizen having additional information or health concerns regarding this health consultation should contact the Michigan Department of Community Health, Environmental and Occupational Epidemiology Division, at 1-800-648-6942.

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References

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Michigan Department of Environmental Quality. Letter from Mark Henry, MDEQ Remediation and Redevelopment Division (formerly Environmental Response Division) Superfund Section, to Tim Prendiville, EPA Superfund Division, commenting on the final focused feasibility study for West KL Avenue Landfill, Kalamazoo, Michigan. 2002 Jan 18.

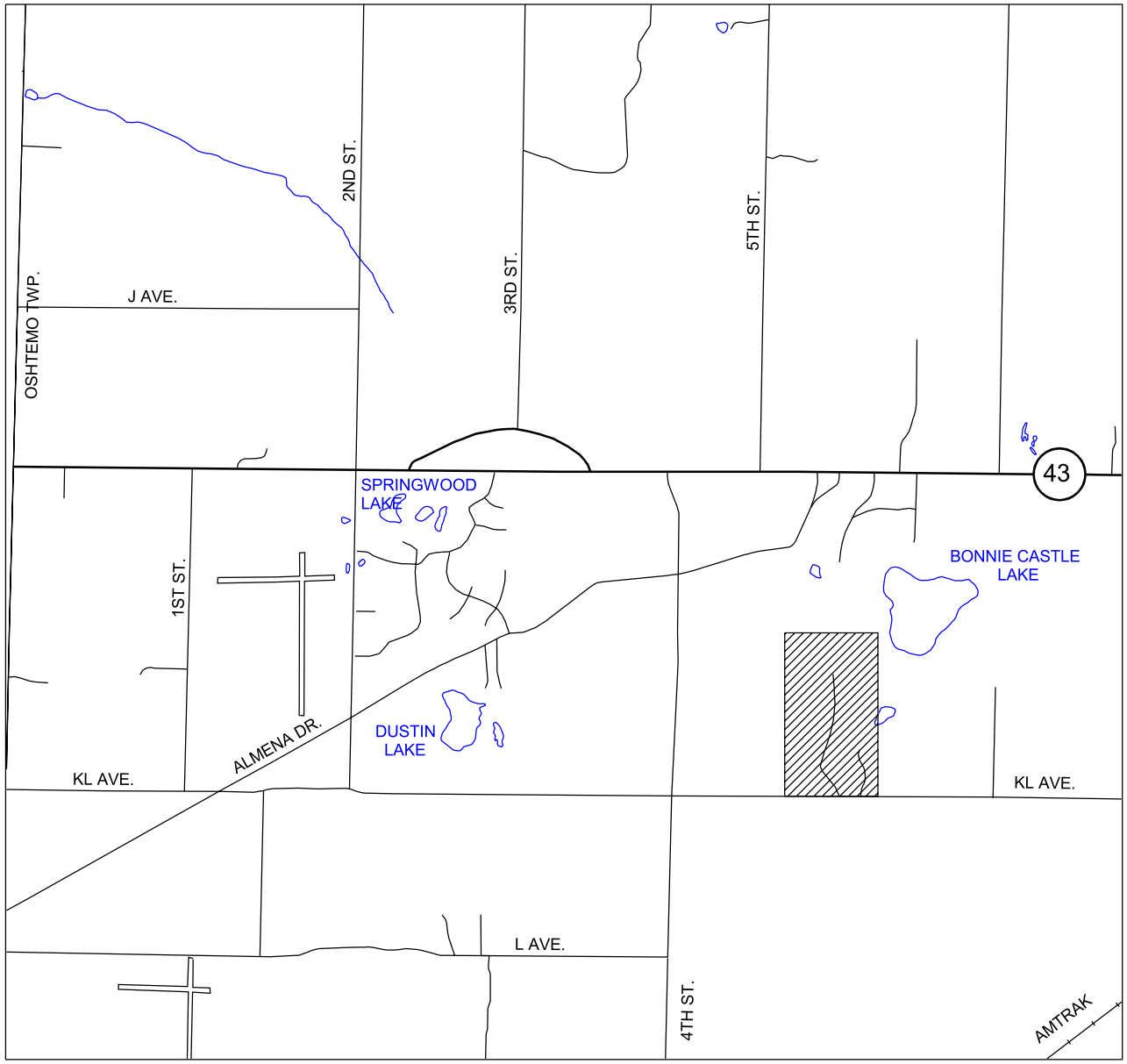
US Environmental Protection Agency (EPA [2002a]). "EPA Proposes Change to Cleanup Plan, West KL Avenue Landfill Superfund Site, Kalamazoo, Michigan, September 2002." U.S. EPA, Office of Public Affairs, Region 5. Chicago.

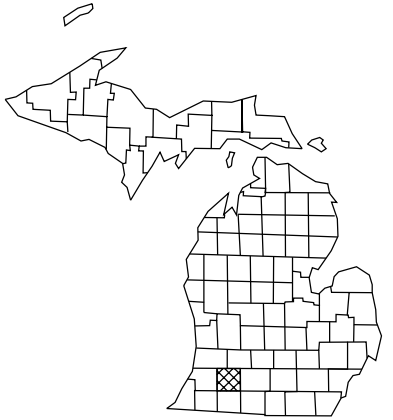
US Environmental Protection Agency (EPA [2002b]). Record of Decision Amendment #1 (Draft), West KL Landfill Site, Oshtemo Township, Kalamazoo, Michigan.

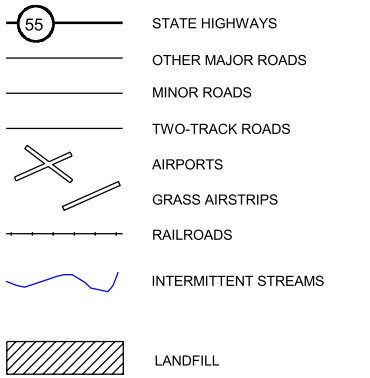
Figure 1.

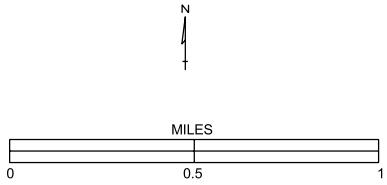
WEST KL AVENUE LANDFILL

KALAMAZOO,
KALAMAZOO COUNTY, MICHIGAN









Michigan Department of Community Health

4/24/2003

PROPOSED MUNICIPAL WATER SUPPLY AREA

NEAR WEST KL AVENUE LANDFILL

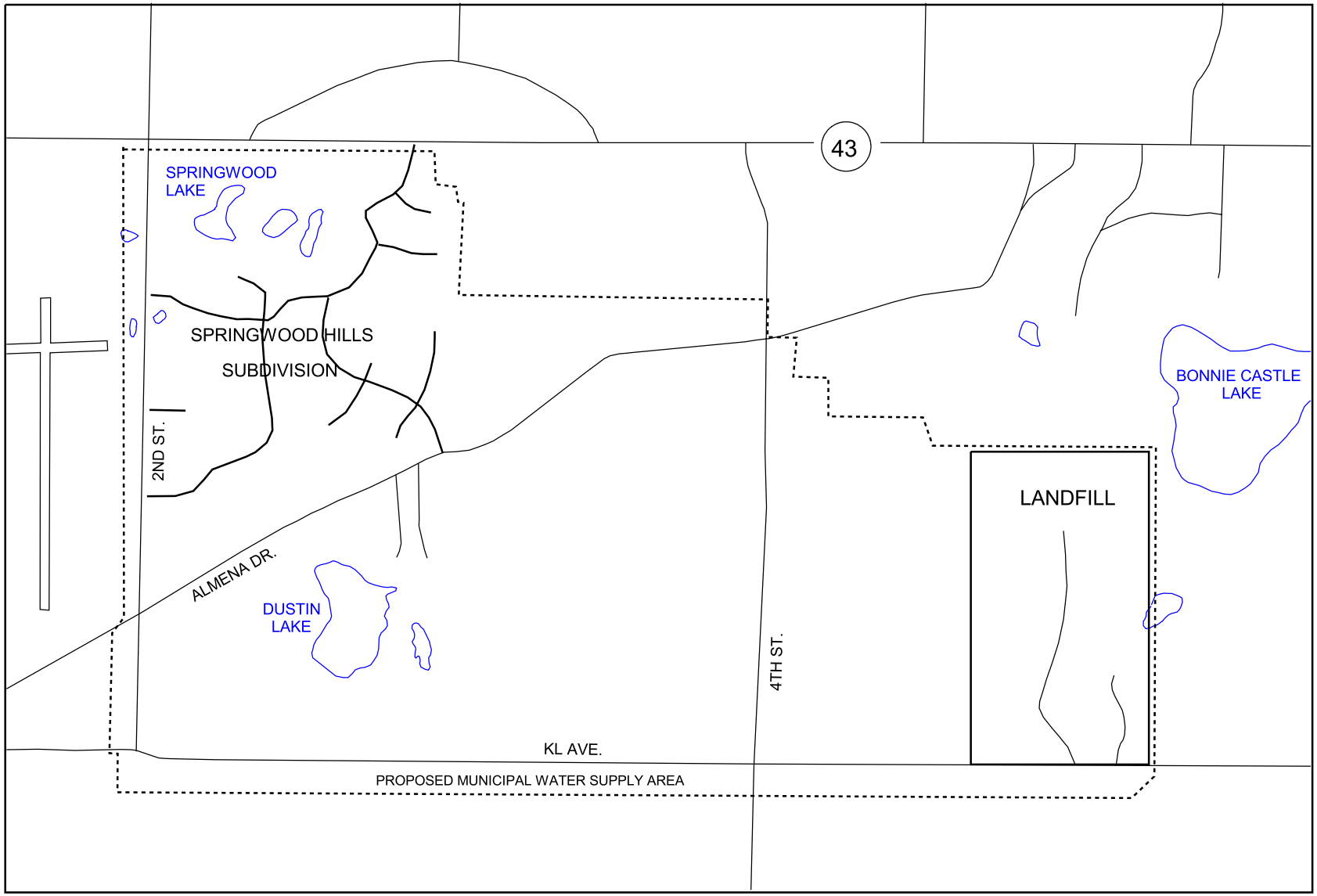
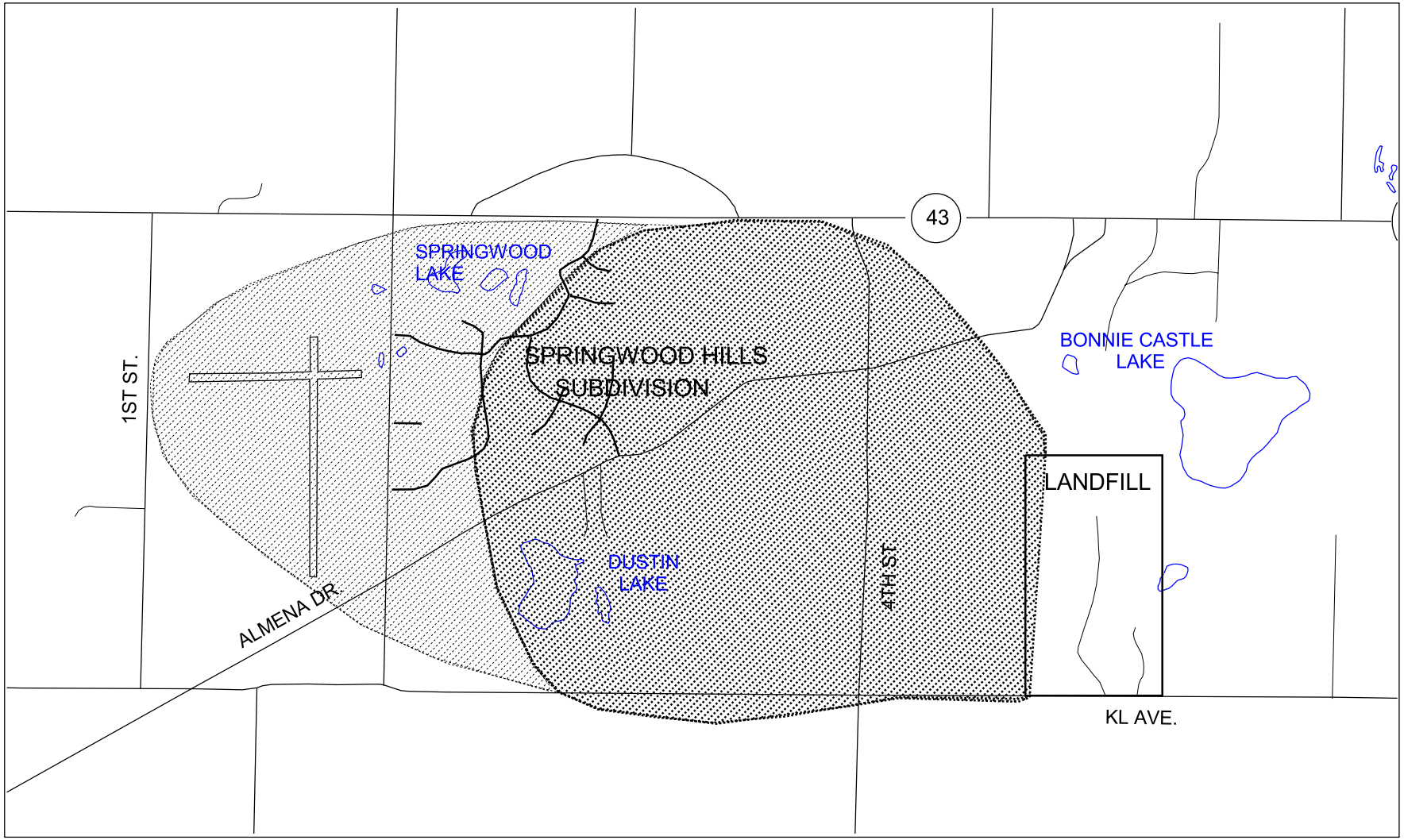


Figure 2.

4/24/2003

GROUNDWATER CONTAMINATION IN THE AREA OF WEST KL AVENUE LANDFILL



CHEMICALS DETECTED AT < MCL

CHEMICALS DETECTED AT > MCL

4/24/2003

Figure 3.

Appendix A: Responses to Comments and Questions

Comments (C) and Questions (Q) Received at the June 4, 2003 Community Health Meeting regarding the MDCH/ATSDR Health Consultation "West KL Avenue Landfill – Response to Record of Decision Amendment," and Responses (R) :
(The majority of questions were directed at the regulatory agencies. MDCH conferred with MDEQ and EPA and is providing their answers here as a courtesy to the stakeholders.)

Comments/Questions Directed to MDCH/ATSDR

Q. Please explain the different agencies' (EPA, MDEQ, and MDCH's) standards for drinking water and how they are derived.

R. The EPA establishes Maximum Contaminant Levels (MCLs) for compounds it regulates in drinking water. An MCL is the highest level of a contaminant that EPA allows in public drinking water systems, is economically and technologically feasible, and is protective of short-term and long-term (70 years) exposures. More detailed information on the EPA's method for setting standards for safe drinking water can be found on the internet at http://www.epa.gov/safewater/standard/setting.html. The MDEQ Drinking Water Criteria (DWC) are chemical concentrations in drinking water which are safe for long-term (usually 30 years), daily consumption. MDEQ may use the MCL or derive its own value for the criterion, dependent on state statute. The MDEQ Technical Support Document that describes the derivation of the DWC can be found on the internet at http://www.deq.state.mi.us/documents/deq-erd-tsd3.pdf. MDCH considers the MCL and DWC when evaluating a site, and also uses the federal Agency for Toxic Substances and Disease Registry (ATSDR) drinking water Comparison Values, which are derived for acute (short-term), intermediate, and chronic (long-term) exposures. Further discussion on ATSDR's Comparison Values can be found at http://www.atsdr.cdc.gov/HAC/HAGM/appa.html. The agencies use the established Reference Dose or Minimal Risk Level for a chemical and apply generic factors, such as body weight, ingestion rate, and the likelihood of exposure to other (non-drinking water) sources, to establish the criterion. The different agencies' standards may match or may be different from each other, dependent on the toxicological endpoint and factors values used by each agency.

Q. What harm is MDCH/ATSDR concerned about if the cap is not replaced?

R. If the cap is not replaced, water can still infiltrate the landfill from above and effectively "push out" more leachate, which could potentially expose persons who are using the groundwater, or using surface waters to which the groundwater discharges, to contamination. The amendment to the Record of Decision regarding extending the municipal water supply and continued groundwater monitoring will provide a good degree of protection, however.

Q. Could there be more health issues when the landfill is opened than when it was in operation?

R. If the current cap is removed, there is a potential for exposure to chemicals in or emanating from the waste. A Site Safety Plan, addressed further in the next response, would include monitoring of gases and proper handling of the waste material, if any is excavated.

Q. Who will be monitoring and addressing health concerns while the cap is being replaced? Will there be a health official on-site all the time? How will we know if a chemical is entering the air during construction? How will monitoring data and remedial progress be made available to the public – library, website, township hall? The EPA mailing list has missed several people on the list in the past.

R. The contractor appointed by the PRPs (and overseen by EPA and MDEQ) to replace the cap will be required to detail a Site Safety Plan, which will include monitoring concentrations of chemicals in the air and taking corrective action if necessary. EPA should consider proximity of nearby residents when establishing maximum allowable air concentrations of the chemicals of concern. There should be no need for a health official to be present during this time. EPA should work with the township to determine several methods by which information can be disseminated to the public.

Q. I jog along West KL Avenue by the landfill all the time. Should I be concerned about what might be in the air now or during cap construction?

R. There should not be any concerns currently regarding air emissions from the landfill. However, during construction, it would be prudent not to jog near the area, primarily to avoid physical hazards posed by construction activity. As mentioned in the previous response, air monitoring should be occurring during cap replacement so that on-site activities do not cause high levels of chemicals to enter the air.

Comments/Questions Directed to MDEQ or EPA

C. Please define "natural attenuation."

R. As defined by the EPA, monitored natural attenuation (MNA) "refers to the reliance on natural processes to achieve site-specific remedial objectives." These processes can be physical, chemical, or biological and "act without human intervention to reduce the mass, toxicity, mobility, volume, or concentration of contaminants in soil or groundwater." Further information can be found at http://www.clu-in.org/download/techdrct/tdchl-solv.pdf.

Q. Could monitoring wells be drilled directly into the landfill to determine what contamination is still present and to what depth?

R. According to the EPA, there are some dangers involved in this proposal. First, the weight of the equipment may be too much for the cap to withstand and may lead to soil collapsing. Also, there would be an explosion hazard with landfill gas

being released near combustion engines. There are several vents on the landfill already; data from these indicate that the waste is still decomposing and releasing chemicals.

Q. Do we know the "life expectancy" of the landfill's contents?
R. No.

Q. What is the status of the groundwater plume – is it growing or diminishing in intensity and size, or is it stable?
R. This issue has been clarified by the MDEQ. The area where contamination exceeds the various MCLs is stable. The area where the contamination does not exceed the MCLs has not been studied sufficiently to conclude whether it is expanding, stable, or decreasing in size. The current monitoring well set-up tracks the groundwater in the area greater than the MCLs. There is no mandate for the PRPs to track the groundwater in the area not exceeding the MCLs.

Q. How long has the plume been monitored? Based on the data collected so far, can you estimate how much longer contaminants will leach into the groundwater and how much further the plume will spread? How fast does the groundwater flow?
R. The landfill-related plume has been monitored since about 1980. Because the amount and precise nature of waste placed in the landfill are unknown, the regulatory agencies can only guess how much longer and to what extent the landfill's contents will leach into the groundwater. Groundwater flow in this area is about one foot per day.

Q. How far west (south of KL Avenue and west of 1st Street) has there been testing?
R. Most of the private wells in the area have been tested by MDEQ. Information on testing results can be found at the Kalamazoo County Human Services Department website (http://www.kalcounty.com/gwpp/pdf_files/springwood.pdf). There are two monitoring wells south of KL Avenue, across from Dustin Lake and in Oshtemo Trace subdivision, but these are east of 1st Street. There are no monitoring wells west of 2nd Street. Since 1st Street is west of 2nd Street, there are no monitoring wells west of 1st Street either.

Q. Are you testing groundwater upgradient of the landfill, such as Bonnie Castle Lake?
R. The owners of the property east of and adjacent to the landfill have denied access to the West KL Avenue Landfill group, so no information is available regarding groundwater beneath this property. The PRPs tested near Bonnie Castle Lake in the past. More recent (fall 2001) testing by MDEQ shows no indication of upgradient contamination near Bonnie Castle Lake.

Q. Why are the water tests only analyzing for "targeted compounds?" Why not look at all chemical parameters (metals, pesticides, etc.)?
R. When groundwater contamination was first discovered, the regulatory agencies tested for all possible compounds. On the basis of analytical findings and the

toxicology, volatile organic compounds were identified as the Contaminants of Potential Concern and targeted for continued monitoring.

Q. MDEQ told us, years ago, that surface water could not be impacted. Now it might be. Will it or will it not be affected?
R. At this time, it cannot be predicted whether surface waters *will* be impacted. At this point, analytical findings can only suggest that an impact *may* occur. There is further discussion on the findings at Dustin Lake on page 21.

Q. Springwood Lake is down 4 feet, so obviously the underground water system is depressed. What could happen if groundwater levels rise, say over the next 10 years? What could happen if the multi-year drought is broken by periods of heavy rain?
R. If there is relief from the drought and groundwater levels rise, the contamination could potentially be pushed outward. This helps illustrate the need for an impermeable cap, in that, with an impermeable cap in place, heavy rains would not be washing through the major source of the contamination into the groundwater.

Q. What chemical treatment options are there for the groundwater?
R. The PRPs have proposed treating the groundwater with sulfate to assist with biological degradation. MDEQ has suggested the use of ozone or other chemical oxidizers to help clean up the groundwater.

Q. What if we cap the landfill and find out in 10 years that the pollutants come from somewhere else?
R. While there may be other sources of pollutants in the area, MDEQ and EPA are "100% confident" that the landfill is the main source of the groundwater contamination plume. Therefore, the scenario suggested in the question is not expected to happen.

Q. How many other contamination sources are suspected in the area? Are they being investigated? Could they be big enough to be Superfund sites?
R. MDEQ believes there may be three other potential sources in the area and is in the process of investigating them. The agency believes them to be relatively small sources. It is ultimately up to the state Governor to propose a site for listing on the EPA National Priorities (Superfund) List.

Q. While these potentially additional sites are being investigated, why not allow things to remain as they are? Why are you willing to spend $51 million on the cap replacement and not spend a few million to look at other potential sources? The PRPs and EPA could set a time, say 2 years, when they can re-evaluate the effects of monitored natural attenuation and proceed with remediation then. In the meantime, if other sources are found, they can be addressed. According to the Health Consultation, there are no immediate health threats and people will be getting hooked up to municipal water anyway.

R. The PRPs have had more than 12 years to provide evidence that would convince the regulatory agencies that monitored natural attenuation is preferable to the remediation plan outlined in the ROD. The agencies are obliged to remedy sites of environmental contamination as soon as possible. Regardless of the fact that there is no immediate health threat and that people will not likely be drinking contaminated water, the State of Michigan statute does not support a permeable cap.

Q. Would an impermeable cap really make a difference over a permeable one? How "permeable" is a permeable cap? I would bet rainfall would not penetrate more than 3 inches.

R. The permeability of a permeable cap is about 1×10^{-3} cm/sec (equal to 1 one-thousandth of a centimeter per second) whereas that of the proposed impermeable cap is to be less than 1×10^{-7} cm/sec, or at least 10,000 times less permeable. The ground's permeability can be likened to that of a sponge, in that a sponge will absorb and hold a finite amount of water. Any additional water added at the top of the sponge would push out water from the bottom, similar to the leaching of the landfill.

Q. What are the ramifications for the current cap if there is atypical rainfall? Could the influx of rainwater impact the non-mobile portion of the plume?

R. While there have been atypical rain events in the past, it is unclear how a heavy rainfall could affect the contaminated groundwater. It could "flush out" the contamination, pushing it out further than its current configuration. Alternatively, an influx could dilute the contaminants in the groundwater. According to MDEQ, more information would be needed to estimate what would occur.

C. A complete geological survey should be conducted to determine how and where groundwater in the area moves now and where it might be redirected if the cap is replaced.

R. The PRPs have conducted such a survey and have submitted it to the regulatory agencies.

Q. How long will it take for the impermeable cap to be constructed?

R. It is expected to take two construction seasons.

Q. Will you re-cap the landfill in sections so that run-off is less likely to happen?

R. Recapping in sections may not be possible. Geotextile and other forms of runoff protection will be employed during the process.

Q. If the cap is replaced, who is responsible for maintaining it?

R. The West KL Avenue Group will be responsible for maintenance.

Q. Has anyone researched the process of tearing up the landscape at the landfill or the effects of traffic during construction of a new cap?

R. Yes. This research was discussed in the Final Focused Feasibility Study available at the Kalamazoo District Library Oshtemo Branch.

C. The current cap is vegetated and wildlife use is obvious. If the cap gets replaced, it would be detrimental to nature. We would be creating more problems. It would be much less expensive, in dollars and to nature, to pump the contaminated groundwater out of the ground and treat it.

R. Pumping and treating the groundwater is already stipulated in the ROD. The cap is required under Michigan law.

Q. What will prevent plant roots from penetrating a plastic cap?

R. Plant selection and cap maintenance would prevent this from happening.

C. EPA should notify the community when a schedule for the capping process is decided so that we can plan appropriately.

R. EPA will likely host a public meeting when the capping schedule has been determined.

Q. When are people in the water extension area going to be hooked up to municipal water?

R. The PRPs are arranging for the hook-ups. EPA and the PRPs are working out the legalities of the ROD amendment via a consent decree. Water extensions are projected to begin in the spring of 2004. A hook-up schedule will be prepared once the consent decree is finalized.

Q. Where can we get the results from the well water tests done on our property?

R. You can check for your well results on the Kalamazoo County Human Services Department website at http://www.kalcounty.com/gwpp/pdf_files/springwood.pdf, or contact the MDEQ Water Division.

Q. There seems to be a double standard. The drinking water is considered safe if it is below the MCL, however I am not allowed to drill new wells on the property I'm developing. If my property is in the area determined to be below the MCL, why can't I drill? Also, why should I have to pay for the municipal hook-up if test results are showing the groundwater under my property is affected?

R. Developers are required to follow state regulations when groundwater contamination is known to occur under properties being developed.

Q. Where do I report problems with the water coming out of my hose (foamy, sudsy)?

R. Contact the Kalamazoo County Human Services Department or MDEQ.

Q. I will be receiving municipal water. In the meantime, can I use my well for irrigation?

R. According to the Kalamazoo County Human Services Department, while no new irrigation wells can be drilled, homeowners can keep their existing well for irrigation purposes if they have received written authorization from MDEQ stating that the well will not cause future migration of contaminated water. The homeowner must submit a copy of this written authorization to the county for review and final approval.

Q. If the water is contaminated, why does EPA allow it to be used for irrigation? Why is it okay for my kids to run the sprinkler when we can't drink the water?
R. Dermal (skin) exposure is not the same as ingestion (drinking). Ingestion of contaminated water is a more direct exposure route.

Q. Shouldn't EPA and MDEQ be in agreement? The area that MDEQ is addressing has been told that they cannot use their wells for irrigation or other outdoor use, that the wells have to be completed abandoned. Aren't you setting a double standard?
R. State and federal agencies do not necessarily have to agree in their remedial plans or drinking water criteria. The agency in charge of a contaminated site sets the standard for that site.

Q. Have all the analyses been conducted by the same independent agency, or have the PRPs conducted their own tests? What methods are used?
R. The PRPs have conducted a majority of the tests under MDEQ oversight. Occasionally, MDEQ has split a sample and provided a comparison analysis. The PRPs use certified laboratories for their analyses and do not perform their own testing. The labs are using EPA Method 8260.

Q. Why does EPA have the final say-so on the remedial decision? Shouldn't property owners have some say?
R. The EPA has provided multiple opportunities for the public to provide input on the proposed remediation plans. The remedial decision, based on community input and the science and engineering involved, is reserved for the agency.

Q. Has EPA considered a "macro-environmental" study of the area, looking at the entire ecosystem?
R. A "macro-environmental" study of the area is not required by or necessary for the Superfund program. The PRPs have conducted an ecological study of the area.

C. The PRPs only show part of the picture in their reports. In reality, the plume is expanding. It is to the PRPs' advantage if they don't have to pay to replace a cap.
R. The area of contamination greater than the MCL is not known to be expanding. It is unknown whether the remainder of the plume is expanding, stable, or receeding.

Q. Why wait any longer when something has needed to be done for 25 years?
R. (This question was viewed more as a comment and requires no response.)

C. This sounds like speculation, since there are so many unknowns. Your conclusions do not seem based on real research.

R. While there are still unknowns, there is a great deal of groundwater data as well as case studies of other landfills that support the argument that a cap would prevent further release of contaminants from the landfill.

Written Questions

Q. What contaminants were found in Dustin Lake and at what levels?

R. It should first be noted that MDEQ found landfill-related chemicals in the *sediment porewater* (the water occupying the space between sediment particles) of Dustin Lake, not in the surface water itself. MDEQ took 9 sediment porewater samples on the east side of the lake in July 2002. Detected chemicals, the range of concentrations found, and the MDEQ Groundwater Surface Water Interface (GSI) criteria are listed below. (The GSI criterion is a groundwater concentration that is protective of surface water to which the groundwater discharges.)

Chemical	# of Detections	Range (ppb)	GSI (ppb)
Benzene	1	1	200
Cis-1,2-dichloroethylene	2	4-6	No GSI
1,1-Dichloroethane	5	1-23	No GSI
1,2-Dichloroethane	3	1-11	360
Diethyl ether	2	19-21	No GSI
Tetrahydrofuran	2	37-91	11,000
Vinyl chloride	2	3-4	15

Reference: 2003, M. Henry, MDEQ-RRD, unpublished data

Q. Who specifically is the "KL Group?" What decision are they negotiating right now? Are they paying for the water hookups in the plume area?

R. The West KL Avenue Landfill Group consists of Oshtemo Township, Kalamazoo County, the City of Kalamazoo, Pharmacia & Upjohn Company (now a subsidiary of Pfizer), and General Motors. As of the date of this meeting (June 4, 2003), the KL Group and EPA are working out the consent decree that will address hooking up the houses in the area affected by the ROD amendment to municipal water. The KL Group reportedly is paying for the hookups.

Comments Received from the West KL Avenue Landfill Group (paraphrased from Appendix B)

C. The Health Consultation contains discussion that goes beyond the appropriate scope of such a document. The Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) does not authorize the ATSDR (or MDCH, by extension) to determine which remedial responses are the most appropriate at Superfund sites. The consultation should be limited to a

community's specific health concerns related to the landfill, and any reference to environmental remediation should be removed.

R. The ATSDR can recommend action to cease or reduce exposure at sites of environmental contamination or *to prevent potential future exposure* (per Section 9.2.1 in the 2002 ATSDR Public Health Assessment Guidance Manual). As well, ATSDR can support a proposed remedial action if it is protective of public health. However, health agencies should not specify *which* remedial action should be taken. That prerogative does belong to the regulatory agencies. The language in the Health Consultation has been revised.

C. The groundwater plume map presented in Figure 3 is misleading and technically inaccurate. It implies that the landfill is the sole source of contamination, even though additional sources are known to exist. The extent of the plume in Figure 3 is not supported by the data nor by the map EPA produced for the proposed ROD amendment.

R. Although MDEQ and EPA have acknowledged that there are likely other sources of the contamination, and MDEQ is investigating these other sources, the agencies maintain that the landfill is the *primary* source. To clarify the intent of Figure 3, the title of the figure has been changed to "Groundwater Contamination in the Area of the West KL Avenue Landfill." The EPA map mentioned in the comment (and the PRPs' map in Appendix B) shows the *landfill-related* plume lying between the landfill and Dustin Lake. It is not yet clear to what degree the remaining contamination in the area is related to the landfill.

C. The Health Consultation incorrectly states that the groundwater plume is continuing to move westward. Data indicate that the landfill-related plume is stable or receeding.

R. According to the MDEQ, the area where contamination exceeds the various MCLs is stable. The area where the contamination does not exceed the MCLs has not been studied sufficiently to conclude whether it is expanding, stable, or decreasing in size. Regional groundwater flow is to the northwest, so it is likely that the total area of groundwater contamination is expanding in size, although it does not appear to be increasing in concentration, and is flowing toward the Paw Paw River. The language in the Health Consultation has been revised to reflect this information.

C. Test results for the sediment porewater samples taken by MDEQ at Dustin Lake have not been made public record, making their validity questionable. Surface water samples taken at Dustin Lake, Bonnie Castle Lake, and other nearby ponds have shown the water quality to be well within drinking water standards.

R. MDEQ is investigating further its initial findings at Dustin Lake. While it may not be appropriate to release raw data on preliminary work until additional data verify the initial findings, for purposes of responding to public comment, MDCH requested the information from MDEQ and reported it earlier in this appendix. It is true that MDEQ has not found contamination of the surface water at Dustin Lake.

C. There is no discussion of the extent of habitat destruction expected during cap construction or that the short-term effects of the construction may last three years.

R. It is true that construction activities would cause temporary habitat destruction and neighborhood disruption. The long-term benefits expected of an impermeable cap, however, should outweigh the short-term negative effects of the cap's construction.

C. The "ATSDR Child Health Considerations" section in the Health Consultation is misleading in that it suggests to the reader that if the permeable cap remains on the landfill, children may be exposed to contaminants in the groundwater. The ongoing, private well monitoring program would preclude any such exposure.

R. This specific section of the document is required to be included in all ATSDR public health consultations and assessments. The first paragraph of this section discusses the rationale that shows how children are likely more vulnerable to the effects of environmental contamination *in general*. However, regulatory criteria such as the MCL and the DWC are calculated using adult exposure factors and may not be adequately protective of children. At this site, exposure may have occurred in the past, before private well water was replaced with the municipal supply. The groundwater and private well monitoring program in the area around the West KL Avenue Landfill has been and continues to be a useful tool to ensure that exposure does not occur in the future or is stopped. The language in this section has been revised.

C. MDCH, as an extension of ATSDR, failed to comply with the Data Quality Act, which requires that federal agencies make certain that information disseminated to the public be objective. The agency did not identify and evaluate all available and relevant information. Similary, MDCH did not consider technical alternatives to the impermeable cap that have been proposed and promise to be more protective of the groundwater.

R. It is true that MDCH did not conduct an exhaustive search for all information that may have been relevant to the stated purposes of this document. Commenting on the proposed amendment to the ROD did not require additional data other than that cited. Responding to citizens' health concerns from the October 2002 EPA Public Meeting required only groundwater monitoring data, toxicological information, and a review of MDCH Vital Records. Additional information would have been required if MDCH had regulatory authority regarding the cap permeability issue. Because the health agency does not have the authority to specify a remedial alternative and has changed the language of the Health Consultation, it is not necessary for the agency to obtain additional information or consider the alternatives proposed by the PRPs.

Appendix B. West KL Avenue Landfill Group Comments on ATSDR Health Consultation – Public Comment Release

I. Overview.

The West KL Avenue Landfill Group (Group) of potentially responsible parties in connection with the West KL Avenue Landfill Superfund Site (Site) in Kalamazoo County, Michigan, offers the following comments on the May 7, 2003, Health Consultation-Public Comment Release (Consultation) with respect to the Site. Members of the Group include Kalamazoo County, Oshtemo Township, the City of Kalamazoo and Pharmacia Corporation. All members (or their predecessors) are settling defendants under a consent decree entered November 17, 1992.

The May 7, 2003 Consultation, prepared by the Michigan Department of Community Health (MDCH) under contract with the U. S. Agency for Toxic Substance and Disease Registry (ATSDR), was the subject of a June 4 meeting to gather public input. Having examined the Consultation and having heard input from the public and state and federal regulatory agencies on June 4, Group members are compelled to request significant and extensive changes in the Consultation. The draft is seriously flawed in its scope, in its factual accuracy and in its conclusions.

The Consultation contains discussion that goes well beyond the appropriate scope of such a document, and sets forth conclusions inappropriate for a health consultation. This mistake is compounded further in that MDCH did not seek data from all relevant parties as required by ATSDR guidance, and came to conclusions without use of data currently in the public record. This resulted in a failure to consider significant data that would have influenced some of the conclusions advanced by the Consultation. In other areas, alleged facts are misstated or misrepresented.

The Group has submitted a comprehensive proposal to the U.S. Environmental Protection Agency (EPA) proposing alternatives to the remedies contained in the currently operative EPA Record of Decision (ROD). This proposal has been discussed at length with the Michigan Department of Environmental Quality (MDEQ). The Group firmly believes that the alternative remedial actions, while departing somewhat from traditional approaches, would be far more effective both long- and short-term because of conditions specific to the site. However, that evaluation is simply outside the scope of a proper health consultation.

ATSDR's regulations, guidance, and background documents[1] require cooperation, interaction and solicitation of information from multiple sources (including owners or operators), examination of "whether exposures are truly expected to be harmful under site-specific conditions," preparation of an objective and balanced report, and acknowledgement of uncertainties.[2] As outlined below, it is the Group's position that the

[1] See generally references identified in Attachment A to these comments
[2] ATSDR Public Health Assessment Guidance Manual

draft falls far short of these requirements and should be extensively rewritten or dropped altogether.

II. Scope of Consultation.

The Consultation was prepared at EPA's request to respond to community health concerns voiced at an October 2002 public meeting to discuss amendment of the ROD to include expansion of municipal water service down gradient from the landfill. Members of the public raised three questions at this meeting:

a) Is groundwater south of KL Avenue, specifically along North 4th Street, safe to drink? Could the plume of contamination from the landfill affect it in the future?
b) Could present groundwater contamination cause reproductive problems such as spontaneous abortion or stillbirth?
c) Is the incidence of cancer or other disease in the area elevated? If so, could this be associated with groundwater contamination?

Although the stated objective of the Consultation is to address these specific community health concerns, most of the document is devoted to the expression of an unfounded opinion that it is necessary to construct an impermeable cap on the landfill to protect public health. This content is inappropriate for a health consultation of this type.

The Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) defines the role and authority of the ATSDR at Superfund sites. In general, CERCLA provides that the ATSDR shall "effectuate and implement the health related authorities of this chapter." CERCLA § 104(i)(1) (emphasis added). In addition, the ATSDR is assigned specific responsibility for a series of health related activities, including the maintenance of a national registry of diseases and persons exposed to toxic substances, an inventory of literature on the health effects of toxic substances, a complete listing of areas closed to public use due to toxic substances contamination and the performance of periodic programs to determine relationships between toxic substances and human illness.

CERCLA also defines the scope of a health consultation prepared for public comment. Section 104(i)(4) provides that "the ATSDR shall provide consultations upon request on health issues relating to exposure to hazardous or toxic substances . . . ." CERCLA § 104(i)(4) (emphasis added).

One theme is common to all of these definitions: the ATSDR's role is limited to collecting and assessing information concerning the human health effects of exposure to toxic and hazardous substances. CERCLA does not authorize the ATSDR to assess or to determine which remedial reponses are most appropriate to address risks associated with specific sites. CERCLA grants that authority to the U.S. EPA. If an ATSDR study identifies a significant risk to human health, Section 104(i)(11) expressly authorizes the EPA to "take such steps as may be necessary to reduce such exposure and eliminate or substantially eliminate the significant risk to human health." CERCLA § 104(i)(11).

This provision is consistent with § 104(a)'s broad grant of authority to the EPA to evaluate and select the most appropriate means of addressing releases of hazardous substances.

The MDCH, however, did not limit its attentions to the pertinent human health issues assigned by CERCLA. The MDCH took it upon itself to address the relative technical merits of a permeable cap versus an impermeable cap and how they would affect the migration of contamination in groundwater.

The Consultation does not consider all of the remedy selection criteria required by CERCLA and the NCP. Instead, it discusses only one remedial technology (impermeable capping). It is inappropriate and not helpful to public understanding for the MDCH and the ATSDR to attempt to address issues that are clearly beyond the scope of a public health consultation. It is especially inappropriate for the authors to have done so in a manner that is inconsistent with technical and legal requirements of CERCLA and the NCP. The Consultation must be limited to citizens' specific health concerns related to exposure to substances associated with the landfill. Any reference to environmental remediation should be excised from the document.

III. Factual errors and speculation.

Besides ranging far beyond the appropriate scope of such a report, the Consultation contains several factual errors and unwarranted speculation in references to an impermeable cap, which should be deleted from the Public Health Consultation. Specific technical issues that are addressed inappropriately include:

a) Extent of the groundwater plume of contamination;
b) Expansion of the groundwater plume; and,
c) Surface water and groundwater interaction.

A. Extent of groundwater plume

The extent of the Site-related groundwater plume presented in Figure 3 in the Consultation is both misleading and technically inaccurate. Not only is the extent represented incorrectly in the face of multiple rounds of data collected and reported by the Group, the size of the groundwater plume as shown in Figure 3 is more than twice as large as that presented by EPA in its Proposed Plan for the ROD Amendment. It is inappropriate for MDCH to publish a map of the plume that is supported by neither factual data nor by EPA allegation. The Consultation ignores validated data demonstrating that substantial areas within the purported extent are in fact not affected. As an example, Figure 3 ignores aquifer profile borings (sampled every 10 feet) and associated monitoring-well installations that have been monitored regularly over several years and shown groundwater to be clean, including six profile borings between North 2nd Street and Dustin and Springwood Lakes.

In addition, a vast majority of the residential wells sampled on a regular basis has historically been clean. As such, the Consultation figure ignores the preponderance of data and implies an extent and continuity of contamination that simply does not exist. Further, the map of the contamination appears to have been drawn in a manner that envelops all detections (whether landfill related or not) and ties that envelope back to a single source (the KL Landfill). This ignores known facts about additional sources of contamination in the vicinity, including sources that have been substantiated by the MDEQ's own investigations (e.g., the Springwood Hills seep).

The attached figure shows an accurate interpretation of the extent of the plume that corresponds with that identified by EPA in its publications.

B. Expansion of the groundwater plume

The Consultation draft states incorrectly that the plume is continuing to spread westward and speculates that it will continue to do so unless an impermeable cap is installed. More than 10 years of monitoring data indicates that the landfill-related plume is in fact shrinking (collapsing) for all but a few compounds for which it is stable, at worst.

Monitoring data since the Remedial Investigation (RI) conducted in 1988 indicates that the leaching rate of organic compounds from the landfill has declined substantially, showing a 96 percent reduction in total mass flux as shown on the attached figure. In addition, the total mass of organic contaminants in the plume has gone down by more than 80 percent since the Remedial Investigation, with complete or nearly complete removal of many compounds, as a result of natural, unaugmented biodegradation. The groundwater plume has been assessed on a semi-annual basis since 1996 by monitoring water quality in more than 25 wells. Additional data is available as a result of monitoring activity involving approximately 80 residential wells. The data continue to show that the down gradient margin of the plume remains in the vicinity of Dustin Lake, a position it has maintained for more than a decade.

C. Surface and groundwater interaction

The Consultation speculates that surface water in Dustin Lake could become contaminated by groundwater discharges influenced by the Site. The Consultation speculates further that if Dustin Lake became affected, children swimming and wading in the lake would be exposed to contamination from the landfill. These statements appear to have been based on a personal communication with MDEQ about shallow groundwater samples collected by MDEQ in 2002 below the eastern end of Dustin Lake that reportedly contained volatile organic compounds. Test results from these samples have not been provided to the Group and are not part of the public record. The specific compounds and their concentrations are not discussed and no information is provided to validate this assertion[3]. This information is simply not of a quality that can be relied

[3] In contrast, the data on which the KL Group and EPA rely is subject to a rigorous quality assurance program to ensure its validity.

upon for drawing conclusions about health effects and should not be included in this Consultation.

The Consultation also ignores substantial studies of Dustin Lake that have been validated, reported and accepted by the EPA. During the RI, surface water samples from Bonnie Castle Lake, Dustin Lake and all of the ponds surrounding the landfill showed water quality to be well within primary drinking water standards. Subsequent studies by Hobin (1993) and Golder (1996) determined that no organic constituents from the Site were making their way into Dustin Lake.

D. Omission of key issues

MDCH's discussion of the "Cap Permeability Issue" omits key items of significant public concern. For example, the public should be aware that construction of an impermeable landfill cap would destroy valuable wildlife habitat that has evolved during 20 years of natural succession on the landfill site. In addition, adjacent forested lands would be excavated to obtain materials for impermeable cap construction. Similarly, the public is not being told that the short-term effects of cap construction may last three years. While speculation regarding the impermeable cap should be dropped from the draft for the earlier-stated reasons alone, these important omissions make that part of the report doubly onerous.

E. Misleading discussions

The section entitled "ATSDR Child Health Considerations" is misleading. First, it presents a general discussion of possible health effects of hazardous substances on children and outlines various extreme health outcomes due to exposure. There is no discussion of what chemicals and rates of exposure would be required to cause these health effects. It also is important to note that no attempt is made to link the unnamed chemicals to the Site. While we acknowledge that there may not have been an intent to imply that such gross effects could be associated with the Site, the Consultation is misleading. While it is true that extending the municipal water supply will protect children and adults alike, it also is true that the ongoing extensive monitoring of home wells ensures that the drinking water standards are met. This monitoring also provides reassurance to children and others who are living outside the plume.

Assertions in this section that children may be exposed to chemicals in groundwater if the permeable cap remains in place and that their potential exposure to contaminated groundwater would be eliminated with the construction of an impermeable cap are inaccurate and misleading. The extensive, regular well monitoring program that is in place precludes any such exposure. This would be continued whether or not an impermeable cap is constructed.

F. Failure to comply with Data Quality Act (DQA)

The DQA[4] requires that federal agencies make certain that information disseminated to the public be objective, with an emphasis on quality and integrity, among other things. Guidelines have been issued for governmental entities subject to the DQA, including ATSDR for its health consultations (whether prepared by ATSDR itself or another entity, such as MDCH). The use and dissemination of inaccurate or unverified information and failure to identify, obtain and evaluate all available and relevant information from multiple sources with divergent interests represents direct failure to comply with the requirements of the DQA and to meet the integrity standard required in the performance of governmental functions.

G. Failure to objectively evaluate alternatives

MDCH's conclusions regarding the Site remedy fail even to acknowledge, much less evaluate, technical alternatives to the ROD remedy. This is despite the fact that proposals have been made which promise to be more protective of the groundwater than an impermeable cap and without the negative aspects of the ROD remedy. Instead, the Consultation simply assumes an impermeable cap to be the only possible way to address the remote -- if not non-existent -- chance that landfill-related exposure pathways could develop in the future.

III. Conclusion

The Consultation should be revised to eliminate the improper and incomplete evaluation of remedial options that are beyond the scope appropriate for such reports. The inaccuracies and assumptions identified in these comments must be eliminated or corrected in the final version of the Consultation.

Further, the Group asserts that costs associated with this Consultation to date do not qualify as oversight costs for which the government may be entitled to reimbursement. The basis for this claim is that the scope and subject matter of the Consultation, at least in its draft form, go far beyond the role and authority of ATSDR as defined in CERCLA and in the National Contingency Plan.

Respectfully submitted by the West KL Avenue Landfill Group

Kalamazoo County
Oshtemo Township
City of Kalamazoo
Pharmacia Corporation

[4] See Public Law 106-554; HR 5658, Section 515

ATTACHMENT A

1. 42 CFR § 90.5(b).

2. 42 CFR § 90.6.

3. ATSDR, Strategic Plan 2002-2007, "ATSDR's Core Values," available at http://www.atsdr.cdc.gov/2002-2007strategicplan.html#core>.

4. ATSDR, Strategic Plan 2002-2007, "The ATSDR Mission," available at http://www.atsdr.cdc.gov/2002-2007strategicplan.html#mission>.

5. ATSDR, ATSDR Public Health Assessments, Foreword, available at http://www.atsdr.cdc.gov/hac/pha/foreword.html#>.

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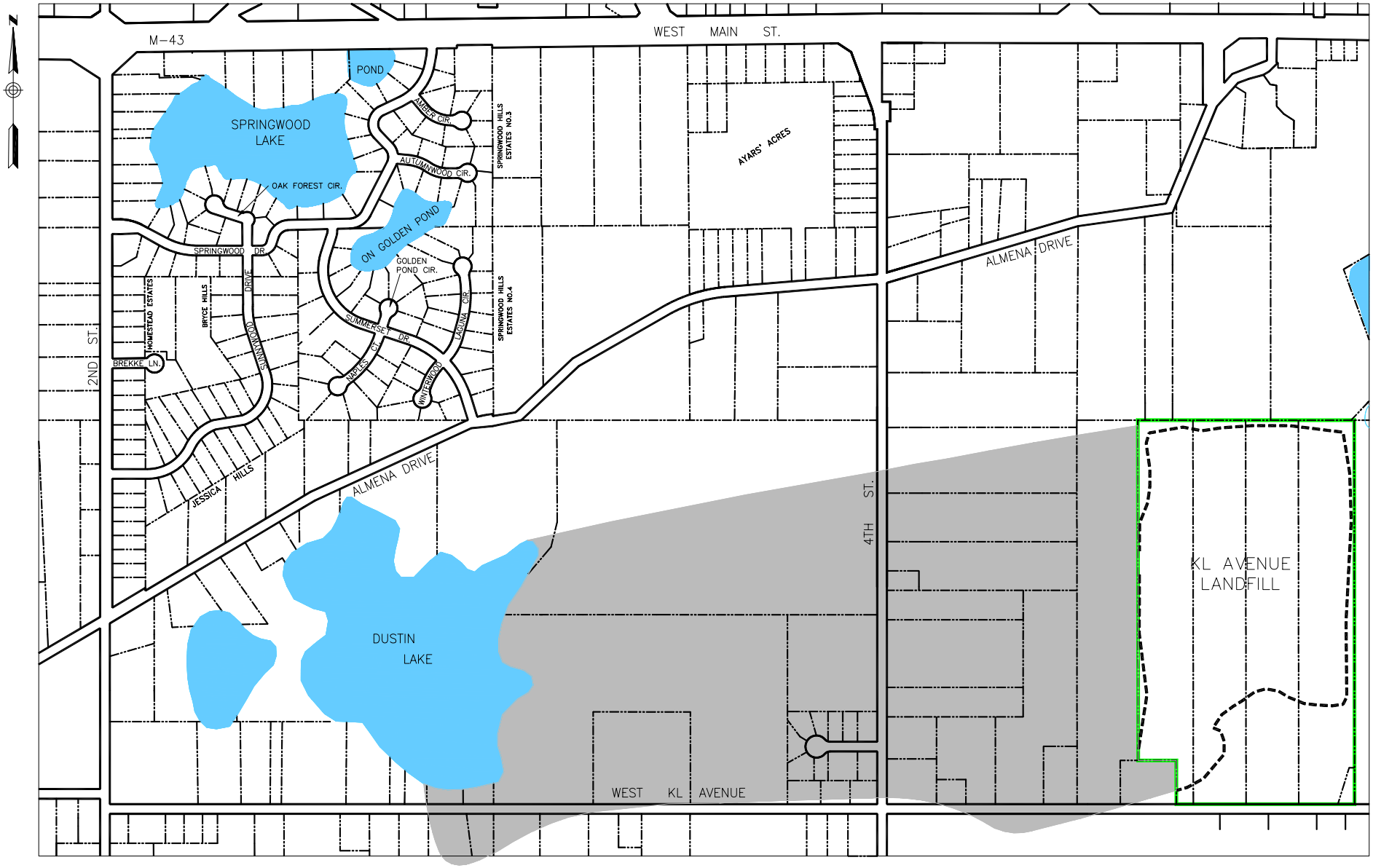
GENERAL EXTENT OF PLUME - 2002



Certification

This "West KL Avenue Landfill – Response to Record of Decision Amendment" Health Consultation was prepared by the Michigan Department of Community Health under a cooperative agreement with the Agency for Toxic Substances and Disease Registry (ATSDR). It is in accordance with approved methodology and procedures existing at the time the health consultation was begun.

Technical Project Officer, SPS, SSAB, DHAC, ATSDR

The Division of Health Assessment and Consultation, ATSDR, has reviewed this public health consultation and concurs with the findings.

Chief, State Programs Section, SSAB, DHAC, ATSDR