Health Consultation

INDUSTRIAL EXCESS LANDFILL

UNIONTOWN, STARK COUNTY, OHIO

CERCLIS NO. OHD000377911

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U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Public Health Service
Agency for Toxic Substances and Disease Registry
Division of Health Assessment and Consultation
Atlanta, Georgia 30333

Health Consultation: A Note of Explanation

An ATSDR health consultation is a verbal or written response from ATSDR to a specific request for information about health risks related to a specific site, a chemical release, or the presence of hazardous material. In order to prevent or mitigate exposures, a consultation may lead to specific actions, such as restricting use of or replacing water supplies; intensifying environmental sampling; restricting site access; or removing the contaminated material.

In addition, consultations may recommend additional public health actions, such as conducting health surveillance activities to evaluate exposure or trends in adverse health outcomes; conducting biological indicators of exposure studies to assess exposure; and providing health education for health care providers and community members. This concludes the health consultation process for this site, unless additional information is obtained by ATSDR which, in the Agency's opinion, indicates a need to revise or append the conclusions previously issued.

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HEALTH CONSULTATION

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Prepared by:

Superfund Site Assessment Branch
Division of Health Assessment and Consultation
Agency for Toxic Substances and Disease Registry

Introduction

The Industrial Excess Landfill Site near Uniontown Ohio operated from the 1966 to 1980 [1]. In 1985, USEPA began investigations on and around the site and subsequently proposed the site to the National Priorities List. In 1989, a decision was reached to remediate the site using a "pump and treat" methodology and further environmental sampling was planned to design an appropriate remedial system. Numerous environmental sampling events have occurred since 1989, resulting in a proposal to modify the selected remedy for the site. During the EPA investigation and following sampling events, ATSDR has reviewed environmental data made available to us and provided a number of written documents describing public health issues related to the sample data. The proposal to modify the remedy has resulted from sampling conducted in 1997 and 1998, by representatives of some of the potentially responsible parties for the site [2, 3], and sampling conducted in September 1998 for USEPA [4].

Purpose

The purpose of this document is to provide a public health review of the proposal to modify the selected remedy as described by USEPA [1]. This review is based upon an evaluation of environmental data that has not previously been discussed by ATSDR in a public document and an evaluation of public health issues for the communities living near the site. In this document, ATSDR will evaluate available environmental data and likely routes of potential or completed pathways by which the public may be exposed to chemicals from the site. ATSDR and Ohio Department of Health are currently preparing a separate document to provide a public health evaluation of the September 1998 sampling data. Some elements of ATSDR's review of that data have been included in this document, however the reader is referred to that document for more discussion of the September 1998 environmental sampling data. These two related documents are being prepared to provide as quick a response as possible to the community and to the USEPA while public comments are being received on the proposed modification of the remedy.

Background

ATSDR has previously written public health evaluations covering the following:

- Public Health Assessment of the Industrial Excess Landfill site (1989)
- Site Review and Update (1992)
- Statement on Testing of Soil Core Samples (1993)
- Health Consultation on Radiation Data (1994)
- Health Consultation on Health Outcome Data (1994)
- Health Consultation on Groundwater Data (1995)
- Health Consultation on Air Quality Data (1996)
- Health Consultation on Community Concerns and Questions (1996)

ATSDR has made these documents available to the public through use of local repositories (Lake

Township Clerk's Office, Hartville Branch Library) and by providing copies as requested from ATSDR's offices in Atlanta (contact ATSDR toll-free at 888-42ATSDR). In addition, ATSDR technical staff have been involved in the Technical Information Committee convened for the site and have individually answered questions from both the local community around the site and from USEPA technical staff involved with the site.

Methods

The authors reviewed the ATSDR site file of previous documents, met with other ATSDR staff involved in the preparation of the documents, met with Ohio EPA staff involved with the site, toured the site area, reviewed various documents provided by a local resident concerned about the site, met with USEPA staff, and reviewed reports, fact sheets, and various related documents provided by USEPA [2,3,4]. ATSDR's evaluation of these documents included:

- a review of new environmental data or scientific literature that would lead ATSDR to change findings of our previous documents,

- a review of new site-specific environmental data made available since ATSDR's last prepared document [5],

- a review of new sampling data specifically in light of expressed community concerns regarding "Tentatively Identified Compounds" (TICs) in the analytical results, and

- a review of the proposed new remedy as outlined in USEPA's January 1999 document.

In reviewing the 1997 and 1998 environmental data, ATSDR evaluated both the entire data set (residential and monitoring wells) and the specific subset of the data most pertinent to public health - residential wells which may be used for drinking water supplies. It is ATSDR's understanding that in the area of approximately 100 homes originally provided with a community water supply, about 5 or 6 homes may still be using private water supply wells as their source of drinking water [6]. ATSDR has considered this possibility in our evaluation of the available data and has also made appropriate recommendations to address the possibility that some local residents may still be getting their drinking water from private water supply wells.

When reviewing environmental sampling data, ATSDR evaluates five elements of a pathway by which local residents may become exposed to contaminants and compares available data against appropriate comparison values. The five elements of a completed pathway are: a chemical release (source), transport through an environmental medium, a point of exposure, a route of human exposure (such as inhaling or ingesting), and an exposed population. ATSDR's comparison values are media specific levels of chemicals that are considered to be safe under basic conditions of human exposure. Comparison values are used as screening values in preliminary identification of site related chemicals that warrant further evaluation of site-specific exposure pathways. Chemical concentrations below a comparison value are considered to be of no public health

concern, levels above a comparison value require detailed evaluation of specific potential exposure amounts and durations. It is important to note that comparison values are conservatively designed as a screening tool. Concentrations above a comparison value should not be used as predictors of adverse health effects.

Discussion

Previous ATSDR Documents

Since publication of our most recent document in 1996 [5], ATSDR has not received any technical literature, journal articles, comments, or new environmental data that led us to make any changes in the conclusions and recommendations of our previously published documents.

EPA Proposed Remedy Modification

In reviewing the proposed modified remedy as described by USEPA, there are two primary elements: 1) an engineered landfill cap to reduce infiltration and 2) monitoring of the local groundwater to evaluate the effectiveness of natural attenuation and to require the implementation of alternatives in the event monitoring data are not satisfactory.

These items are discussed separately in the following text, although both are clearly integral parts of the proposed remedial plan.

Engineered Landfill Cap - although it is difficult for ATSDR to evaluate a hypothetical item such as a proposed cap which has not yet been constructed, ATSDR finds that any item which reduces infiltration to the landfill (and therefore leachate from the landfill) generally lessens any potential exposures to site related contaminants via a groundwater pathway by either reducing the amount of leachate at the source where it enters the pathway or by lessening the hydraulic gradient (e.g., the slope of the water table) which drives the pathway migration rates. Therefore, ATSDR finds the proposed cap to be of potential benefit to public health.

Proposed Monitoring of Local Groundwater - ATSDR finds that proposed monitoring of local groundwater in a manner that addresses community concerns about potential contaminant migration is of benefit to public health. ATSDR is unable to fully evaluate the groundwater monitoring proposal because it is still under development. ATSDR is prepared to provide additional public health review and input in the development of proposed groundwater monitoring as workplans become available for comment. Based upon USEPA's routine use of drinking water standards (Maximum Contaminant Levels, or MCLs) for offsite residential wells which are or may be used as drinking water supplies, ATSDR anticipates that monitoring will be beneficial to understanding, identifying, and preventing any potential public health exposures to contaminants.

Available 1997 and 1998 Environmental Data

ATSDR has evaluated environmental sampling data made available to us since the last document previously produced by ATSDR in 1996. These data were found in three separate reports, provided to ATSDR by USEPA. One report, from 1997 was prepared by an environmental consultant for a legal firm working with some of the parties potentially responsible for the site. The second report (and related addenda) detailed water sampling conducted in September 1998 and was prepared by a contractor to USEPA. The third report presented results of September 1998 sampling conducted by a consultant acting on behalf the "responding companies" [3].

1997 Data

The available environmental data from sampling in 1997 was collected from various monitoring wells installed on and around the Industrial Excess Landfill site. No residential well data was located by ATDSR in our review of the 1997 sampling effort. Because ATSDR is interested in environmental data for public health evaluations, residential well data would be useful in evaluating health implications of drinking water being used by residents. ATSDR uses monitoring well data in many instances where point of exposure data are not available. In the case of the 1997 data, ATSDR reviewed the data from the monitoring wells and found no contamination present at levels of public health concern offsite. ATSDR did note that the laboratory detection limits reported for three compounds were above appropriate comparison values. Benzene had a detection limit of 10 micrograms per liter (ug/l), comparison value of 5 ug/l; trichloroethene had a detection limit of 10 ug/l, comparison value of 3 ug/l; vinyl chloride had a detection limit of 10 ug/l, chronic child health comparison value of 0.2 ug/l. Although ATSDR believes it is beneficial to proceed with appropriate measures to remediate the site, ATSDR recommends that future sampling and monitoring efforts make use of appropriate laboratory detection limits which will allow more detailed health evaluation of the analytical data.

1998 Data

Monitoring wells

The 1998 sampling data from both the USEPA and the consultant were evaluated by ATSDR. Briefly, ATSDR's findings were similar to the 1997 sampling data for the monitoring wells. ATSDR noted a pattern of onsite volatile organic chemical contamination and no offsite contamination detected at or above ATSDR comparison values. ATSDR also noted the same difficulty with laboratory detection limits for benzene, trichloroethene, and vinyl chloride in the 1998 data as occurred in the 1997 data. For inorganic constituents such as metals, ATSDR noted only a few offsite detections. Specifically, ATSDR found that arsenic was present in monitoring well MW 27-D at a level of 20.2 ug/l in an unfiltered sample collected by the consultant and 21.7 ug/l in an unfiltered sample collected by USEPA. This level of arsenic is below USEPA's Maximum Contaminant Level of 50 ug/l but above ATSDR's screening value of 10 ug/l. Results for arsenic in unfiltered samples from residential wells were below ATSDR's screening value, so

ATSDR does not currently consider arsenic in this one offsite monitoring well to be of public health concern. ATSDR does recommend future sampling of residential wells using unfiltered samples for inorganic metals analysis.

ATSDR's conclusions about the 1998 monitoring well data are the same as the 1997 data. ATSDR found no current offsite detection of chemicals at levels of public health concern and believes it is beneficial to public health to proceed with remedial activities for the site; however, ATSDR recommends further monitoring be done around the site and that laboratory detection limits appropriate for more detailed public health evaluations be used.

Residential wells

Because of the primary value of actual or potential point of exposure data, ATSDR places the highest value for evaluating the potential public health impacts of the Industrial Excess Landfill site on the available residential well sampling data. ATSDR notes that many of the wells sampled are no longer used as the drinking water supply for the homes where they are located, yet the possibility of their use for occasional drinking water and the possibility that other homes may still be using similar wells for drinking water make these data useful in ATSDR's evaluation of the current conditions at the site. In our review of 1998 sampling data, ATSDR found that the analyzed chemicals were all below levels of public health concern.

ATSDR does make a specific note that the laboratory detection limits achieved for the residential wells was low enough to fully evaluate the public health implications (for example, detection limit of 1 ug/l for benzene, 1 ug/l for trichloroethene, and 1 ug/l for vinyl chloride). Because of the lower detection limits achieved and the point-of-exposure nature of residential well samples, ATSDR finds that current data indicate no exposure to site contaminants is presently occurring.

Tentatively Identified Compounds (TICs)

In our review, ATSDR specifically reviewed laboratory information provided about tentatively identified compounds. ATSDR is aware that most environmental sampling efforts encounter chemicals which are not routinely identified using the methods and analytical instruments commonly used in environmental health investigations. These compounds are called "tentatively identified compounds" (TICs) and may include chemicals which are only partially identifiable (for example lab methods may be able to identify a chemical as a hydrocarbon molecule or an organic molecule containing halogens without allowing complete identification of which hydrocarbon or which halogen, etc.). Prompted by specific community concerns, ATSDR evaluated tentatively identified amounts of glycol ether, and, ATSDR also evaluated another issue about the tentatively identified compounds that arose during ATSDR's review of the data.

Regarding glycol ethers that were reported as tentatively identified compounds, ATSDR performed a search of the toxicologic literature and evaluated a hypothetical scenario consisting of a presumed human exposure via a residential drinking water well contaminated with 100 ug/l of

glycol ether (higher than the highest tentatively identified level in the 1998 data). ATSDR calculated estimated doses that the hypothetical drinking water exposure would create for either adults or young children using the same exposure assumptions and methodology used in developing ATSDR's comparison values and found that the resulting exposure was less than one one-thousandth of the levels that could cause adverse health effects in humans.

The other issue ATSDR noted in the data on tentatively identified compounds is that several instances of a tentatively identified compound estimated to exceed 100 ug/l were present in the data for semi-volatile organic compounds. This was noted specifically in the data for monitoring wells MW-11i, MW-21s, and MW-27i. ATSDR is concerned that this may be the same or related compounds. We believe it is prudent public health practice to pursue efforts to more accurately identify these compounds or evaluate if they are related.

ATSDR believes that proceeding with remedial efforts at the site are the most beneficial approach to protecting public health. ATSDR does recommend that future monitoring sampling be considered which incorporates approaches to evaluate and identify compounds detected at levels of 100 ug/l or greater.

Child Health Initiative

ATSDR recognizes the unique vulnerabilities of children in evaluating potential public health implications of sites where chemicals have been released to the environment. ATSDR specifically included children's health concerns and potential exposures in our evaluation of the 1997 and 1998 water sampling data for the Industrial Excess Landfill site. ATSDR has concluded that neither children nor adults are currently being exposed to site-related chemicals via drinking water pathways. ATSDR does note, and recommends evaluation of, the possibility that some households in the area near the landfill may still be using private water supply wells.

Conclusions

ATSDR finds that it is beneficial to public health to proceed with placement of a cap at the site to reduce infiltration and leachate generation and to proceed with development of a detailed monitoring plan to obtain additional data regarding groundwater conditions on and around the site, based on the evaluation of recent environmental sampling data and the limited data on proposed modifications to the remedy selected for the site.

ATSDR finds that the available environmental sampling data from 1997 and 1998 indicate no current chemical exposures at levels of public health concern to residents living near the Industrial Excess Landfill site. Based on this, ATSDR currently considers the site to pose "no apparent public health hazard" under our system of health conclusion categories.

ATSDR also finds that further evaluation should be made of homes in the area where approximately 100 homes were originally provided an alternate water supply to determine if any

homes are presently using a private water supply well. In the event any private supply wells are found in that area, ATSDR recommends considering sampling of those wells in the development of future monitoring and sampling plans for the site.

Recommendations

1. ATSDR recommends proceeding with design and placement of a cap over the landfill to reduce infiltration and lessen the amount of leachate generated by the site.

2. ATSDR recommends proceeding with development of a regular groundwater monitoring and sampling plan to evaluate the effectiveness of the proposed natural attenuation approach. During development of the plans, ATSDR recommends consideration be given to evaluating and addressing: any remaining private water supply wells in the area of the original alternate water supply, laboratory detection limits suitable for using the data in public health evaluations, and, laboratory procedures for further evaluation of any tentatively identified compounds found at levels above 100 ug/l.

References

1. U.S. Environmental Protection Agency, 1999. Fact Sheet, "U.S. EPA Proposes Changes to the Cleanup Plan for the Industrial Excess Landfill Superfund Site."

2. Geraghty & Miller, Inc., 1997. Evaluation of Groundwater Chemistry and Natural Attenuation Processes at the Industrial Excess Landfill, Stark County, Ohio. Prepared for Fuller & Henry P.L.L., September 1997.

3. Sharp and Associates, Inc., 1998. Summary Report on the September 1998 Sampling Event, Industrial Excess Landfill, Stark County, Ohio. December 17, 1998.

4. Tetra Tech EM, Inc., 1998. Draft Technical Memorandum. September 1998 Groundwater Monitoring and Residential Well Sampling Results, Industrial Excess Landfill, Stark County, Ohio. Version dated January 12, 1999 with addendum dated February 5, 1999.

5. ATSDR, 1996. Public Health Consultation: Community Questions/Comments, Industrial Excess Landfill, Uniontown, Ohio, July 25, 1996.

6. ATSDR Record of Activity, 1999. Telephone Call Record of Activity, Conversation between Douglas Gouzie (ATSDR) and Ross DelRosario (USEPA). March 22, 1999.

CERTIFICATION

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