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April 11, 1999

United States Environmental Protection Agency
Regional V
Office of Public Affairs (P-19J)
Attn: Ms. Denise Gawlinski
77 West Jackson Blvd.
Chicago, IL 60604-3590

Re: Comments of the Board of Lake Township Trustees on the Proposed Changes to the Remedy at the Industrial Excess Landfill Superfund Site.

Dear Ms. Gawlinski:

Enclosed for inclusion in the administrative record for the Industrial Excess Landfill Superfund Site are the comments of the Board of Lake Township Trustees and accompanying documentation. By reference, we hereby incorporate as Exhibit A, the report entitled, Comments on the Existing Public Record for the Industrial Excess Landfill for the Revision of the 1989 Existing Record of Decision prepared by Bennett and Williams environmental Consultants, Inc. which is being forwarded under separate cover.

If you have any questions, please feel free to contact me at the telephone number listed above.

Very Truly Yours,

Edda Sara Post

Edda Sara Post

Enclosures
Cc: Board of Lake Township Trustees
Frank Cumberland, Esq.
David Herbert, Esq.

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COMMENTS OF THE BOARD OF LAKE TOWNSHIP TRUSTEES ON THE PROPOSED CHANGES TO THE REMEDY AT THE INDUSTRIAL EXCESS LANDFILL SUPERFUND SITE

Serious omissions of substantive evidence, mistakes of fact and substantive flaws in methodology exist in the administrative record supporting the proposed remedy. As a result of these mistakes, omissions and methodological flaws, the United States Environmental Protection Agency (USEPA) has failed to consider relevant factors and relied upon incomplete information in choosing the remedy for the Industrial Excess Landfill Superfund Site. No rational connection exists between the site conditions and the remedy selected. Its adoption without further site characterization and assessment of the short and long term potential for adverse effects to human health and the environment, including an epidemiological study, is arbitrary, capricious and contrary to law.

Promulgated under the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C.A. 9601 *et seq.* (CERCLA), the National Contingency Plan ("NCP"), 40 CFR Part 300, is the set of regulations establishing the national procedures and standards for responding to discharges of hazardous substances at sites on the National Priorities List ("NPL" or "Superfund Sites"). The Industrial Excess Landfill Site located in Uniontown, Ohio, Lake Township, Stark County Ohio (IEL) is such a site. Indeed, pursuant to CERCLA § 118 (42) U.S.C.A. 9618) because the release of hazardous substances from IEL has resulted in the closing of drinking water wells, and, as discussed herein, may require the expansion of the alternate water supply, this site is high priority.

To fulfill its statutory duties and obligations at IEL, the USEPA must strictly comply with the procedures and standards set forth in the NCP during all phases of its response to the release of hazardous substances, including the remedial investigation, feasibility study, remedy selection, remedial design and remedial action. To do otherwise is contrary to law. In addition, any remedy selected by the USEPA must comply with applicable, relevant and appropriate requirements (ARARs) of state and federal law. In making a remedy selection decision, the USEPA must examine all the relevant data and articulate a satisfactory explanation for its action, including a rational connection between the facts found and the choice made. Further, the agency must act in the public interest. U.S. v. Akzo Coatings of America, Inc., 949 F. 2d 1409, 1424-1426 (6th Cir. 1991); In the Matter of Bell Petroleum Services,3 F. 3d 889, 904 (5th Cir. 1993); Minnesota v. Kalman W. Abrams Metals, Inc. et al., 155 F. 3d 1019 (8th Cir. 1998). If an agency fails to adequately study the nature and extent of the contamination problem prior to implementing a remedy, ignores warnings regarding the viability of a remedy, or denies the public a real opportunity to comment on a remedy, its remedy selection is arbitrary and capricious. Kalman W. Abrams Metals, Inc. at 1024. Similarly, relying upon an administrative record containing errors of procedure and serious omissions of substantive evidence is arbitrary and capricious. Akzo Coatings at 1425.

Site Characterization and Remedy Selection.

The national goal of the response process contained in CERCLA and the NCP is to select remedies that are protective of human health and the environment, maintain protection over time and minimize untreated waste. Remedies should eliminate, reduce, or control risks to human health and the environment. (40 CFR 300.430). Remedial

actions in which treatment permanently and significantly reduces the volume, toxicity, mobility and bioaccumulation of the hazardous substances is preferred over remedial actions not involving such treatment (42 CFR § 98621(b), CERCLA § 1221(b)). To accomplish these goals, the NCP establishes a procedure and program principles, including use of operable units, complementary phasing of remedies, and gathering site specific data that reflects the scope and complexity of the site problems being addressed. The key to identifying and selecting a remedy and meeting the program goals and principles is developing a conceptual understanding of the site and its environs. That is accomplished through a site characterization to determine the nature and threat to human health and the environment posed by hazardous substances and to support the analysis and design of a remedy.

The site characterization is required to assess (1) the physical characteristics of the site (surface features, soils, geology, hydrogeology, meteorology and ecology); (2) the air, surface water and groundwater; (3) the waste and its propensity to bioaccumulate, persist and move in the environment; (4) exposure pathways through environmental media; (5) exposure routes such as ingestion, inhalation, absorption through skin and (6) other factors (40 CFR §300.430(d)(2)). The site characterization requirement is mandatory. Without it, a conceptual model of the nature, transport and fate of the hazardous substances cannot be constructed. Without a conceptual model of what has and is occurring at the site and its environs, site-specific remedial alternatives protective of local human health and the environment cannot be identified. Development of remedial alternatives during the feasibility study and, ultimately, the implemented remedy, must be fully integrated with the site characterization so that a rational

connection exists between the site conditions and the remedy selected. (40 CFR 300.430(e)(1)). In addition, the USEPA is required to identify applicable relevant and appropriate requirements (ARARs) related to the site and to incorporate them into the remedial design (42 U.S.C.A. § 9621(d), CERCLA §121(d)). To select a remedy without sufficient site characterization and supporting evidence confirming that the remedy will protect human health and the environment by permanently and significantly reducing the volume, toxicity, mobility and bioaccumulation of the hazardous substances, maintain protection over time and minimize untreated waste is contrary to law and arbitrary and capricious.

In this instance, the USEPA has not completed a site characterization sufficient to determine the nature, transport and fate of contaminants and to identify and select a remedy meeting the goals of CERCLA for the IEL Site. The report of Bennett & Williams (sent directly to the USEPA on April 12, 1999, to have been attached as Exhibit A hereto, complete with its accompanying Exhibits), presents a detailed discussion of the mistakes of fact, serious omissions of substantive evidence, flawed methodology and errors in scientific procedures found in the record. By way of example only, the geology and soils have been mischaracterized leading to incorrect assumptions relating to groundwater pH, the propensity of the soils to promote natural attenuation, contaminant fate, and transport and groundwater flow rates. True background wells have never been established, even though recommended by the Science Advisory Board. In some instances, including the 1998 groundwater sampling done by the PRPs, the detection limits used in laboratory analysis of water samples were above the Maximum Contaminant Levels (MCLs), the clean up standards adopted for groundwater. The

ATSDR in its Health Consultation on the 1998 groundwater data, criticized the 1998 data on this basis as well. It is impossible to establish that groundwater meets the MCLs if the analytical method cannot even detect contaminants in that range. If the geological and hydrogeological site characterization is flawed, all subsequent work based upon it and the remedy selection will be flawed, putting the public health and the environment at risk. Such is the case at IEL.

In the February 17, 1999 letter of William Munro, Director of the USEPA Region V Superfund Division (attached as Exhibit B and incorporated herein), the USEPA admitted that ***it does not know*** the transport and fate of the tons and gallons of hazardous substances that were disposed at the Industrial Excess Landfill. ***It does not know*** whether the hazardous substances have passed through the monitored area and are continuing to spread. ***It does not know*** if the hazardous substances have been completely diluted and dispersed. ***It does not know*** if the hazardous substances have been naturally attenuated. ***It does not know*** if the hazardous substances have accumulated at an undiscovered location. All that the USEPA does know is that the levels of hazardous substances in some of the offsite monitoring and residential wells may have decreased below the MCLs, for now. As discussed in the Bennett & Williams report, however, even this conclusion is unfounded. On the other hand, levels of hazardous substances at other monitoring wells have increased.

As a result of the incomplete site assessment and mistakes of fact and flawed methodologies, a conceptual understanding of what mechanism(s) is responsible for the changing contaminant levels in offsite monitoring wells does not exist. Without this knowledge, a proper site-specific remedy addressing those mechanisms, as contemplated

by the NCP, cannot be developed. As Mr. Munro implies in his letter, the USEPA is proposing to address the current conditions, not to implement a permanent remedy as required by CERCLA and the NCP. USEPA is proposing to treat the symptoms without diagnosing the illness. Although the NCP allows the phasing of remedies, phased remedies are not intended to develop a final remedy through trial and error.

CERCLA and the NCP call for permanent remedies based upon good science; however, that is not what is proposed for the instant site. The proposed remedy as an iterative process was presented by Ross del Rosario at the public hearing held by USEPA. He suggested that if the proposed remedy didn't work as anticipated, and a problem was found during an unspecified "monitoring program" or the five year review required for Superfund Sites where waste has been left in place (42 USCA 96__, 40 CFR 300._____), the agency would catch the problem then. This approach does not reduce the volume, toxicity, mobility and bioaccumulation of hazardous substances or maintain protection over time or prevent additional exposures of the offsite population to hazardous substances as contemplated by CERCLA. It merely responds to additional releases of hazardous substances after they may have occurred.

Since about 1994, the PRPs have theorized that all of the offsite contaminants, volatile organic compounds and heavy metals, are being naturally attenuated. Further, they claim that no cap is needed to address the residual waste mass in the landfill itself. Based upon its significant knowledge of Ohio geology and the new information gathered, and its review of the existing record, Bennett and Williams hypothesizes that the contaminants have been flushed from the landfill into the downgradient ponds, streams, wetlands and bogs, which serve as discharge points for groundwater from the landfill.

(See the Bennett & Williams report for detail.) Depending on which theory is correct, the final remedy for the site may differ.

Although the USEPA admits that it does not know what is going on at the landfill, it has proposed to accept the theory of natural attenuation promoted by the PRPs and base the final remedy upon it. The Geraghty and Miller and Sharp and Associate reports that the PRPs submitted to the Agency contain a good discussion of the mechanisms of natural attenuation; however, they do not provide sufficient empirical scientific data to demonstrate that natural attenuation is in fact occurring at the site for both the volatile organic and heavy metal contaminants. If the natural attenuation is the correct scientific explanation for what is occurring at the IEL Site, it can and should be supported by reliable substantive empirical data. To date, it is not.

Internal USEPA memoranda of Linda Kern dated July 1995, Ross Del Rosario dated December 17, 1997 and Mary Randolph, Ph. D. in March of 1998 (which are in the administrative record) discussing natural attenuation at the IEL Site all indicate that insufficient data exist to support the theory that natural attenuation, capable of remedying all of the hazardous substances at the site, is occurring. Mr. Tom Shalala, a certified professional geologist with the firm of Clayton Environmental, experienced in Ohio geology, resides within one quarter mile of the Industrial Excess Superfund Site. He testified at the public hearings held by the USEPA Ombudsman and the USEPA in association with the proposed changes to the remedy that the quantity, quality and nature of the scientific evidence that the USEPA is relying upon to adopt a natural attenuation remedy at IEL falls seriously short of that generally considered sufficient by the USEPA and the professional environmental community (See Ombudsman's transcript and

USEPA transcript attached as Exhibits B and C, respectively and incorporated herein). Bennett and Williams presents a comprehensive review of the natural attenuation issue in their report. They, too, indicate that insufficient hydrogeological, geochemical and microbial evidence exists to support the conclusion that natural attenuation is a proper remedy, even when accompanied by a cap. In addition, the mistakes of fact made during the site characterization alter the assumptions underlying the natural attenuation theory. Bennett and Williams also explain that the protocols for determining the viability and fact of natural attenuation at a site established by the USEPA at its own Kerr Environmental Research Center and suggested in the relevant scientific literature on the issue have not been followed at IEL.

The expert opinions of Dr. Mary Randolph, Linda Kern Tom Shalala, James Titmas (another local expert who testified during the Ombudsman's Hearing) (See Exhibit A) and Bennett and Williams all agree. Others who offered public testimony during the hearings also agree that the record does not support natural attenuation at the facility. The site-specific conditions are not conducive to natural attenuation and the substantive evidence falls short of demonstrating that the fluctuating contaminant levels are attributable to natural attenuation.

The members of the relevant scientific community who have reviewed the data submitted in support of natural attenuation at the IEL Site have found mistakes of fact, serious substantive flaws in the methodologies used and a serious lack of evidence supporting the theory. The theory has not survived peer review. The PRPs' claim of natural attenuation falls outside the range where experts might reasonably differ. Only the PRPs and their experts believe that natural attenuation has been shown to be

occurring at the site and that it is sufficient to protect human health and the environment from the organic compounds and heavy metals that have been released from IEL. They stand to save, literally, millions of dollars from the proposed remedy change. To adopt natural attenuation as part of the remedy at the IEL site based upon the information currently in the record will be arbitrary and capricious and contrary to law as no sound science supports the decision and, therefore, no rational connection exists between the site conditions and natural attenuation.

Significant New and Relevant Information.

During their review of this matter, Bennett & Williams and the Board of Lake Township Trustees identified significant new and relevant information not currently in the administrative record, which is included in the Bennett and Williams report and the comments of the Board of Lake Township Trustees. When factored into the site characterization, this new information significantly changes the conceptual understanding of the site and requires additional site characterization before a final remedy may be selected and designed. It is of such significance that the USEPA must reconsider its remedy selection in its light. (As the Board's investigation continues, it will update and amend these comments with any new information it finds.)

A. Irrigation Wells

By way of example, Bennett and Williams found in the public records of the Ohio Department of Natural Resources, information regarding groundwater production rates for the two irrigation wells located on the sod farm adjacent to the landfill. In the remedial investigation and the site characterization, these wells were assumed to be

nonproductive. They are not. This new information significantly alters the hydrogeological picture of IEL.

The 1994 USGS report indicates that groundwater flow from the IEL is radial; however it "quickly" returns to the regional east-west flow. No one has determined how quickly. That same report assumed that the irrigation wells were not in use. The pumping rates of the wells reported to Ohio Department of Natural Resources by the well owner rebuts this assumption. In 1998 alone, the irrigation wells pumped 16.4 millions of gallons of water for irrigation! Any conclusions drawn from this erroneous underlying assumption are likely incorrect. Relying upon this USGS report, the USEPA determined, for instance, that the farms and land to the east and south of the landfill were not affected by the landfill and would not receive an alternate water supply. That determination may or may not be correct. This new information requires the USEPA to reevaluate the groundwater flow patterns at the landfill and reconsider its decision regarding the extent of the alternate water supply.

As discussed in greater detail in the Bennett and Williams report, information regarding the irrigation wells confirms the Science Advisory Board determination: new background wells must be installed and integrated into the groundwater monitoring system for complete understanding of the local groundwater regime.

B. Residential Development of Property to East and South of Landfill.

The Board of Lake Township Trustees has recently learned that farmland east of IEL, adjacent to the sod farm, has been sold for residential development (See Exhibit D attached and incorporated hereto) The area is not served by city water. The area is not in the No Drill Zone established by the County Health Department for the landfill (see

Exhibit E), because it was previously thought to be upgradient of the landfill. To protect the health of the people who will live in this development and drink the groundwater, the issue of groundwater flow direction to the east and south of the IEL Site must at last be put to rest. The impact of the pumping of the irrigation wells must be determined. If contaminated groundwater is pulled eastward by the irrigation wells, the groundwater may not be used for drinking, irrigation or any other purpose as exposure pathways through various environmental media will be closed. The design of the cap may have to be changed and an alternate water supply installed. See Bennett and Williams report for more detail on this issue.

The health of the residents of the area is at stake. Indeed, the information regarding the massive pumping of groundwater by the sod farm combined with the impending residential development of land east of the landfill triggers § 118 of CERCLA which demands that the USEPA place a high priority on this site. Failure to respond to this new information will be arbitrary and capricious and contrary to law and against the public interest.

C. Construction of New Stormwater System.

In addition, the USEPA is hereby advised that the stormwater system along Cleveland Avenue and elsewhere in IEL vicinity is going to be upgraded in the next few years. Any design of the remedy at the site must be coordinated with the county engineer and other agencies involved in this endeavor. Care must be taken that the new stormwater system will not compromise the Industrial Excess Landfill in its current condition or with a cap in place. Conversely, care must be taken to ensure that the installation of the cap will not compromise the stormwater system. Similarly, care must

be taken to ensure that construction of either project will not damage or the other. More importantly, the potential exposure of construction workers to hazardous substances such as heavy metals and volatile organic compounds that have left the site and may have entered or accumulated in the existing stormwater system and the adjacent soils must be assessed and a worker health and safety program developed for a stormsewer construction workers.

The additional site assessment work recommended in the Bennett and Williams report must be completed before the storm sewer design is completed and construction is begun to identify what soils may be contaminated. Only in this way can USEPA prevent unnecessary exposures of the workers to hazardous substances, or volatilization of VOCs.

Community Involvement.

The USEPA has not provided the public with a meaningful opportunity to comment on the proposed remedy. First as set forth in Exhibits F and G, and H the agency did not provide adequate time in which to comment. More importantly, the USEPA did not provide sufficient detail on the proposed remedy. As set forth in the Bennett and Williams report, little detail on the changes to the proposed cap was provided. Similarly, only general statements that a groundwater monitoring program that may include radiochemical parameters will be instituted, were provided. Conceptually the idea is fine, as is motherhood and apple pie. The key to providing an opportunity for meaningful public involvement as required by the NCP, is to provide sufficient details so the public can understand what is really to be done. Without reasonable detail on a proposed remedy, the comment period is meaningless. Public involvement is a cornerstone of the NCP and CERCLA. Failure to comply with the community

involvement requirement is a violation of law. The agency must provide additional information on the proposed changes to the cap and the groundwater monitoring program and reopen the comment period, to comply with the public comment requirements of CERCLA. Failure to provide such an opportunity is arbitrary and capricious and contrary to law.

In addition, the responses of the USEPA to the public comments must be specific. Statements that additional data will be gathered are insufficient. That is what the USEPA did in the Responsiveness Summary to the 1989 Record of Decision. As discussed in the Bennett and Williams report, the USEPA has failed to gather the promised information in the ten years following the ROD. Responses must contain complete explanations of what information will be gathered, the protocols to be followed, and a timetable in which the work is to be completed.

Radioactivity.

A longstanding issue that remains unsettled in the eyes of the citizens of Lake Township is whether the radioactivity detected at the land fill has been adequately investigated and will be properly addressed in the proposed remedy for the site. A number of sources of this radioactivity have been identified. As discussed in the Bennett and Williams report, the flyash disposed at the site by Firestone and other PRPs is a likely source of some radioactivity. Any remedy adopted for the site must consider not only the transport and fate of heavy metals in the flyash, but the possible radioactivity as well. We understand that a number of Superfund Sites were listed on the basis of flyash content alone.

In addition, eyewitness reports of Rex Shover, a longtime resident of Uniontown, has provided sworn testimony that he witnessed trucks carrying radioactive placards, which he was trained to recognize, entering the landfill at night after it was closed. (See Exhibit I) Mr. Rex Shover also spoke at the public hearings held by the Ombudsman and USEPA regarding IEL. During the USEPA public hearing he read into the record the statement of Mr. James Shover. James Shover currently resides in California; however, he worked at IEL when it was open. The text of his statement is part of Exhibit B. James Shover witnessed military trucks entering the landfill at night. Lizette McGregor and Harlan S. McGregor who lived directly across from the landfill have also provided a sworn statement stating that they saw military tanker trucks and flat bed trucks with stainless steel canisters with hazardous markings, entering the landfill at night and dumping their loads after closing. (See Exhibit J)

The Board of Lake Township Trustees has made several Freedom of Information Act requests of the military regarding material disposed at IEL. Not surprisingly, no documents regarding any disposals there has been forthcoming. The fact that no documents corroborate the sworn testimony of these eyewitnesses does not mean that the disposals they witnessed did not occur. People including the military, who dump hazardous and radioactive waste unlawfully or under the cover of night generally do not keep records. The sworn testimony of these witnesses is strikingly similar. Moreover, in any court in the land, it is relevant and admissible; the witnesses corroborate one another. In point of fact, it is standard procedure for the USEPA to use sworn statements of operators, truck drivers and employees of landfills to identify generators and hold them

liable under CERCLA. Why the USEPA will not rely on the sworn testimony presented by former employee of IEL, James Shover, and neighbors of IEL is unknown.

The testimony of Mr. James Shover, Mr. Rex Shover, Lizette McGregor and Harlan McGregor is a relevant factor in determining how to characterize and remedy the site with respect to radioactivity. To ignore all of this information in developing a remedy is arbitrary, capricious, contrary to law and not in the public interest.

Additional information regarding potential disposal of military and radioactive waste at IEL was gathered by Mr. Timothy Kern, Chief of the Environmental Enforcement Section of the Ohio Attorney General. He spoke to Robert Simons, Ph.D. (800)296-7053, an expert in the class action lawsuit filed by local landowners (DeSario, et al. vs. Industrial Excess Landfill, Inc., et al., Stark County Common Pleas Court). Dr. Simons advised Mr. Kern that during discovery in that lawsuit he saw documents that indicated that radioactive waste had been taken to landfills by the military in the Stark County area. Unfortunately Dr. Simons did not specifically recall the identities of the landfills. The Board of Township Trustees received a copy of the inartfully drafted request for information the USEPA issued to the defendants in that lawsuit requesting copies of documents produced to Dr. Simons to follow-up on Simons' statement. Not surprisingly, the defendants provided no information. No documents would have been produced to Dr. Simons as he was not a party to the action. Counsel for the Board of Lake Township Trustees will make themselves available to assist the USEPA in preparing a well drafted request for information to obtain this information. Even without the specific documents, Dr. Simons' testimony tends to corroborate the testimony of Rex Shover, James Shover, Lizette McGregor and Harlan McGregor.

The USEPA must plan and implement a scientifically sound investigation of the IEL Superfund site to determine the nature, scope and extent of radioactive contamination there. All environmental media, air, water and soils, should be tested for its presence. The consultants and all laboratories used must be experienced and competent in such work. Strict protocols and QA/QC procedures must be developed and enforced. Selecting and designing a remedy for this site that does not address radioactivity is arbitrary and capricious and contrary to law and not in the public interest. The site remedy must address radioactivity.

Hydraulic Control of Groundwater from IEL

The 1989 record of Decision listed two reasons for the pump and treat remedy: treatment of the contaminated groundwater and separation of the waste mass from the groundwater. The Board of LakeTownship Trustees has found nothing in the record indicating that separation of the waste and ground water is not still a concern. Without some sort of hydraulic control of the landfill, what will prevent groundwater from coming into contact with the waste, or slugs of contamination from the waste mass from entering groundwater and moving offsite? The administrative record indicates that the cap will serve this function; however we question this conclusion as the landfill does not appear to have sufficient walls into which to tie a cap. The administrative record provided in support of the proposed changes to the remedy does not include information sufficient to address this very important question. A CERCLA remedy must prevent movement of hazardous substances from the landfill. Accordingly, it will be arbitrary capricious and contrary to law for the USEPA to design and install a cap without some hydraulic control of groundwater.

Health Concerns.

In response to continuing inquiries from citizens and concern for the health of the public, the Board of Lake Township Trustees gathered all the information that it could regarding the incidence of cancer in Uniontown, near IEL. Admittedly, the survey (to date) is completely unscientific and informal; however, its results, in light of the new information regarding local hydrogeology and geology, are important. Attached as Exhibit K is a copy of correspondence from Elaine Panitz, PhD, who is on the faculty at Princeton University, identifying cases of cancer, many near IEL. At least three of them rare. This information was previously submitted to the ATSDR; however nothing was done to investigate. In addition, we spoke to Mrs. Darlene Lansing, R.N. who has informally gathered cancer incidence information. Mrs. Lansing shared with the Board of Lake Township Trustees, the numbers, kinds and street locations of cancer that she has documented She declined to provide victims' names on privacy grounds. Care was taken not to double count cases. The health information presented in the two public hearings were also included. (See the public hearing transcripts, Exhibits B and C.) Exhibits L and M, attached hereto are the results. Exhibit L is a list, by cancer types, of the numbers of cancer cases and the streets on which they have occurred. Exhibit M is a map of the area with the streets with cancer incidences highlighted. Three areas of the map have what appear to a layperson, high incidences of cancer: directly west of the landfill, southwest of the landfill and northeast of the landfill. Based upon the information contained in the Bennett and Williams report, each of these areas may have a closed exposure pathway through environmental media.

According to Bennett and Williams, the ponds and soils in the marshy areas west of the landfill may be receiving areas for heavy metals and other contamination from IEL. As depicted on the various wetlands maps in the Bennett and Williams Report, Krieghbaum Road abuts a marshy area. Timberlake and Leafland are low areas and circle natural ponds. All of these areas appear to have a significant number of cancer cases. The majority of members of a family on Krieghbaum Road that ate strawberries from a patch in the marshy area, have all been afflicted with cancer. (Exhibit K) Children also played in the marshy areas. Thus the exposure pathway of ingestion, inhalation, absorption, may have been completed in this area. This area has already been supplied with an alternate water source, however that installation may not have completely disrupted the exposure pathways from all environmental media.

Southwest of landfill on Mulberry Street, Dogwood Street, Heartwood and Basswood is another area with what appears to be a significant number of cancer cases. Mrs. Lansing advised the Board of Lake Township Trustees that in the 1970's she lived in this neighborhood. According to Mrs. Lansing, whenever a hard rain came, Metzger Ditch overflowed down the street, into the yards and gardens. People eat the vegetables from their gardens. Children play in yards and mud puddles. Whatever went into Metzger Ditch from IEL was flushed into this neighborhood. According to the testimony of Kenny Catlette, a former employee of the landfill, trenches were cut from the waste lagoons at the landfill to Metzger Ditch (See Exhibit N). In addition, he saw leachate from the side of the landfill enter Metzger Ditch. Exposure pathways appear to be closed in this neighborhood as well.

A third area of cancer appears to be northeast of the landfill in the Nutmeg, Sesame and Foxfire area. While hydraulically up gradient of the landfill, this area is downwind of it, as prevailing winds in the area blow from the southwest to the northeast. During the time that the landfill operated, this area may have received airborne contaminants such as flyash and landfill gases such as methane, vinyl chloride and benzene. They may still be exposed to fugitive emissions of uncontrolled landfill gases and emissions from the incineration unit installed to burn landfill gas. Nothing exists in the record that the incineration of the gases results in 100% destruction of the gas. Analytical results do show that methane, benzene, vinyl chloride and radon are in the landfill gases. Exposure to some of these hazardous air pollutants at even at very low levels is dangerous. Any of the contaminants in groundwater can be volatilized and leave the landfill in the gas stage. For example, arsenic in groundwater can be volatilized as arsine gas. (Telephone conversation with Elaine Panitz) Landfill gases and flyash can be inhaled or ingested, closing the exposure pathway.

As discussed in the Bennett and Williams report, during the operation of the landfill, it is likely that hazardous substances were leaving its boundaries in the groundwater and air. Those plumes of volatile organic compounds and heavy metals may have dispersed, may have moved on or may have accumulated somewhere. No matter which, the people of the township may have been exposed to them. They are a potential source of the cancer identified in the informal Health Survey. Insufficient identification and investigation of the exposure pathways in all environmental media has been done for this Superfund site.

The Health Consultations completed by the ATSDR have only looked at the future risk to public health presented by the landfill based on current contaminant levels found in ground water. Nothing has been done to complete a health status survey or screening program to determine relationships between past exposure to toxic substances from IEL and illnesses in the area pursuant to CERCLA § 104(i)(1)(E), § 104(i)(6)(B). No epidemiological studies have been conducted. No training has been provided to the local medical community regarding the IEL. The Board of Lake Township Trustees requests that this be done.

Additionally, the USEPA should conduct additional air, soil and plant matter sampling as appropriate, to determine whether hazardous substances still exist in those areas and whether exposure pathways in any environmental media are closed, based upon the new information contained in the Bennett and Williams report and these comments.

Applicable Relevant and Appropriate Requirements.

Although environmental permits are not required for CERCLA remedies conducted by agencies, compliance with underlying requirements is. Nothing in the record indicates that the USEPA has identified and provided for compliance with ARARs at the site now and under the proposed remedy. (Exhibit O is a list of the Ohio ARARS that may be applicable to the site.) The agency must ensure that each applicable ARAR is identified and that compliance with the ARARs is designed into the remedial action. Although the PRPs continually refer to the site as a closed municipal solid waste landfill, that terminology is misleading. The fact of the matter is that the site received almost a million gallons of liquid hazardous waste, such as spent solvents and other industrial waste, some of it after RCRA was enacted, for which it was not permitted. The ARARs

for IEL are not the municipal solid waste regulations, but the more stringent hazardous waste requirements. Semantics should not be used to determine what ARARs apply; facts should. To do otherwise would be arbitrary and capricious and contrary to law.

The landfill gas collection and incineration systems is subject to Ohio air pollution laws. The gases being collected by the system contain hazardous air pollutants, including for example, benzene and vinyl chloride. Accordingly, the system must comply with the Ohio Air Toxics Policy. A copy of that policy is attached as Exhibit P. Similarly, the emissions from the incinerator stack should be periodically tested to determine the percent of destruction. Mechanisms must be put in place to ensure continuing compliance with MAGLC emission limits.

In addition, Ohio's new water antidegradation rules and wetland preservation laws may apply.

The USEPA's failure to identify and implement ARARs for the landfill gas collection and incineration system over the last 12 years is arbitrary and capricious and a violation of law. Continued failure to identify and comply with ARARs is an abuse of discretion and contrary to law.

CONCLUSION:

As set forth in these comments and the accompanying Exhibits, including the Bennett and Williams report, mistakes of fact, serious omissions of substantive evidence and substantive flaws in methodology exist in the administrative record the USEPA has developed for the proposed remedy. In addition, significant new relevant information has been provided in the Bennett and Williams report and these comments. As a result the USEPA has failed to consider all relevant factors in selecting the proposed remedy. The

new information is of such significance that the USEPA must reconsider the proposed remedy in light of it. Finally, the USEPA has failed to comply with various provisions of CERCLA and the NCP, which are legally binding upon the agency.

Adoption of the proposed remedy without taking the steps discussed herein and in the Bennett and Williams report to cure the defects in the administrative record will be arbitrary and capricious and contrary to law. This additional work is necessary to ensure that the proposed remedy is supported by good science and is compliant with CERCLA and the NCP and is in the public interest. Ten years have elapsed since the initial record of decision was issued for the site, yet some of the data gaps noted in 1989 still remain. To stop this site from languishing even further and to prevent additional flushing of hazardous substances from the landfill and further degrading the environment of Uniontown, the USEPA must adopt and comply with a strict six month schedule in which to complete the additional site characterization work. Without the additional work, a site-specific remedy cannot be developed. In addition, the Board of Lake Township Trustees recommends that a competent, reliable consultant who is trained in and familiar with the local geology and hydrogeology, be engaged to supervise the fieldwork and interpretation of the data and otherwise monitor the work to assure its completeness and quality, two things which have apparently been missing throughout the history of this site. The citizens of Lake Township deserve no less.

The Board of Lake Township reserves the right to update and amend these comments.

Respectfully submitted,

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Counsel for the Board of Lake Township Trustees, Stark County Ohio

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EXHIBIT LIST

A. Bennett & Williams Comments on the Existing Public Record for the Industrial Excess Landfill for Revision of the 1989 Existing Record of Decision

B. EPA Ombudsman Public Hearing, held on January 25, 1999 in Uniontown, Ohio

C. Industrial Excess Landfill Superfund Site, Public Meeting held on March 2, 1999

D. Deed of Luther J. and Bonnie L. Price, Grantors to A.J. Lockhart dated at the Stark County Recorder's Office – May 1, 1998

E. No Drill Zone

F. Letter dated January 20, 1999 from Edda Post to David Ulrich and Denise Gawlinski

G. Letter dated March 29, 1999 from Edda Post to David Ulrich and Denise Gawlinski

H. Letter from Joi Ross of TetraTech EM, Inc. to Carolyn Casey at the Lake Township Office dated February 18, 1999

I. Affidavit of Rex Shore dated February 2, 1999

J. Affidavit of Lizette and Harlon McGregor dated April 9, 1999

K. Letter of Elaine Panitz, Ph.D. to Thomas Grumbley dated July 25, 1992

L. List of Cancers

M. Map of Area

N. Testimony of Kenny Catlette dated May 31, 1984 at Lake Township Government Offices

O. Ohio Universal ARAR's

P. Air Toxic Policy of the Ohio Environmental Protection Agency

ADDENDUMS

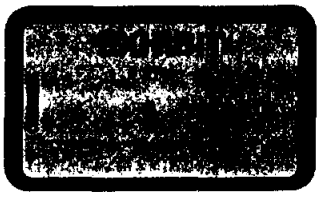
1. Statement of the Board of Lake Township Trustees

2. Resumes of Bennett and Williams

A

EXHIBIT A

Bennet & Williams report, with exhibits, sent directly to the USEPA on April 12, 1999



B

ORIGINAL

EPA OMBUDSMAN PUBLIC HEARING

- - -

BE IT REMEMBERED that upon the hearing of the above-entitled matter held at the Uniontown United Methodist Church, 13370 Cleveland Avenue, Uniontown, Ohio, and commencing on Monday the 25th day of January, 1999, at 7:15 o'clock p.m., the following proceedings were had.

COMPUTERIZED TRANSCRIPTION BY
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APPEARANCES:

On Behalf of the Environmental Protection Agency:

Robert J. Martin, EPA National Ombudsman

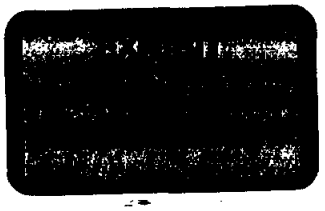
Hugh B. Kaufman, Senior Engineer/ Principal Investigator
Office of Solid and Emergency Response
U.S. Environmental Protection Agency
Washington, D.C. 20460

On Behalf of the Lake Township Trustees:

Messrs. Kaufman & Cumberland Co., L.P.A.

By: Edda Sara Post, Attorney at Law
1500 Republic Building
25 Prospect Avenue, West
Cleveland, Ohio 44115-1000

- - -



MR. MARTIN: We're now on the record. Good evening. My name's Robert Martin, and I'm the national ombudsman for the Environmental Protection Agency for the Superfund program. I'm very glad to see all of you here tonight.

UNIDENTIFIED SPEAKER: Would you use the mike, please?

MR. MARTIN: Sure. I didn't see it. We'll start again. Good evening. My name's Robert Martin, I'm the national ombudsman for the United States Environmental Protection Agency, in particular for the Superfund program. I'm very pleased to see all of you here tonight. This is certainly a great turnout.

We're here to discuss the industrial excess landfill site, which, as you know, is located here in Uniontown, has been here for quite some time. I was petitioned by Christine Borello to initiate preliminary investigation for review of that site. And I am here in furtherance of that investigation to listen to you all and to gather more facts before making some preliminary recommendations to EPA Region 5 in Chicago and to other EPA officials in

Washington, D.C.

That being said I'd like to turn over for procedural matters the hearing at this juncture to Hugh Kaufman, who serves as my chief investigator. Hugh.

MR. KAUFMAN: Hi. I'm also a bureaucrat, and I'll use this microphone for a minute, but I talk pretty loud so I don't think I'll need it for the rest of the evening.

So just quickly, Bob's duties as ombudsman are, among other things, to make recommendations to the EPA as an independent entity, and the industrial excess landfill is a very big case that has tremendous ramifications to all of you, and as a result of the efforts of a number of your citizens and elected officials the Environmental Protection Agency has kept its distance and allowed Bob to do this independent look at the facility.

This public meeting is important to get broad feedback from the community. It will not end tonight. The record will be open for everyone here if they want to provide written comments within the next couple of weeks subsequent to this. You can send them to Robert

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Martin, mail stop 5101, U.S. EPA, Washington, D.C., 20460.

On Bob's left, your right, is Edda Post, who is an attorney for the Lake Township trustees who are very much involved in getting to the facts of this case, and we'd like to have as many key government officials who are involved in this process participate also.

In the audience from our Region 5 office in Chicago is our community relations supervisor for this site, Denise Gawlinski, and for those of you who will follow what's going on, EPA's Region 5 have proposed a change to the remedy for that site and are holding a public hearing on that the beginning of March. And Denise has put a flyer describing that hearing at the end of the table, so I wanted to sort of alert you to that.

The purpose of this particular effort on the part of Bob as the ombudsman is to take an independent look at everything that has and is being done at that site to help assure that the public health and environment is being protected.

Bob is a traditional ombudsman under

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the American Bar Association guidelines and independent so that management of EPA does not have any control of what he sees, what he recommends.

The whole purpose of this effort is to get, get to the truth, get to the facts, ultimately to assure that what is done does protect the public health and environment from serious problems.

I am -- I've been with the agency forever, actually since the beginning. I was chief investigator back in the '70s, and I presently work for our assistant administrator as principal investigator and senior engineer, and he has asked me to help Bob on these cases as chief investigator for Bob.

And I'm going to try to keep things flowing here so that Bob can take in information. Bob is the only ombudsman we've got and he -- the most important thing is to get as many facts to him so he can do his job.

With that end, there's a sign-up sheet that a number of people have signed up for, more can sign up. I'd like us to be done in two hours, and I'd like as much information coming as

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possible so I'm not going to try to cut anybody off, but I would like to deal with facts.

This is not a popularity contest, we're not counting heads to see how many people are in favor of capping the site or pump and treat. This is not a popularity contest, it's merely trying to get to facts and information.

So with that, the first person who signed up to speak is Don Myers, who's a trustee, and I'm going to pass the microphone over here because I think everyone will be able to hear me when I talk. Don. Can everybody hear me?

AUDIENCE: Yes.

MR. KAUFMAN: Terrific.

MR. MYERS: Can everybody hear me? Anybody can't hear me?

Okay. Don Myers. The Lake Township trustees have been elected to help insure to the best of their ability the health and welfare of its citizens, and we, we would like to go on record with the following comments.

By the way, when you come up here you're supposed to state your name, address, spell your last name and position, if any. So there's a prompter sheet here which I overlooked

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and made up myself. The last name is M-Y-E-R-S.

This community has lived under the dark cloud of unanswered questions regarding IEL for too many years. Since its designation as a Superfund site over 15 years ago the site has, in our opinion, been mishandled. No consideration was given to the fact that it is located in the middle of a growing town of approximately 9,000 who rely almost entirely on well water for all of their needs, drinking, bathing, washing, cooking and irrigation.

The recent turn of events whereby the EPA and the potential responsible parties have proposed a change to change the final remedy to mere reliance on nature to clean up the site is quite disturbing.

In July of 1995, just three and a half years ago, the EPA determined that after reviewing all the previous data that the pump and treat process was necessary and that the one to two foot distance between the water table and the contaminants posed a distinct problem. Apparently this is no longer an issue. What happens if we have an abundant rainfall that raises the water table a foot?

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As late as March of 1998 the EPA's own risk assessment people stated that natural attenuation was incapable of reducing some toxic metals below the maximum contaminants level in the groundwater. Further, the risk assessment group reported that the March 1997 groundwater data the EPA is using to bolster their case on natural attenuation actually showed increases of certain VOCs, volatile organic compounds.

The EPA has not yet released the 1998 groundwater data to the public even though it appears to be relying upon it to justify eliminating the groundwater pump and treat program. We also note that by failing to release the 1998 groundwater data at the same time that they request public comments on proposed changes to the remedy, the EPA is depriving the community of a fair opportunity to undertake the site conditions and make meaningful comments. The EPA waited over a year to release the 1997 groundwater data.

The EPA continues to use motivation -- to use monitoring wells 12 and number 20 as background wells even though they are technically inadequate for this purpose. If the EPA had read

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the text of the Scientific Advisory Board's report carefully they would have noted that these same wells were deemed by the SAB to be inappropriate background as they are too close to the landfill and may have been impacted by it. In spite of the SAB's finding ATSDR actually used these wells for the background wells in their risk assessment of the landfill. Comments in the fact sheet mailed to the community state that data from these wells proves that metals are naturally occurring. How wrong that is.

The issue of radioactive contamination at industrial excess landfill has never been adequately addressed. Citizens of Lake Township witnessed tanker trucks with radioactive placards dumping their contents at IEL at night after the dump was closed. The EPA's validation and use of the various rounds of sampling has been ever changing. The initial round of sampling for the radioactivity was invalidated by the agency, however, in recent documents the EPA appears to be now accepting all the radioactive sampling as valid.

In its review of the radiation data the SAB recommended additional quarterly sampling

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of the groundwater for radioactivity during the groundwater pump and treat program to verify that no deviation from background radioactivity exists. Since the SAB report no additional soil or groundwater sampling for radioactivity has occurred. If groundwater pump and treat is eliminated it will never occur.

When the unresolved issue of radioactivity has been presented to the EPA, the agency has proposed that the citizens of Lake Township undertake the sampling at their own cost. All we know is that significant hits of radiation were found during all sampling events, the source of which has not been adequately identified, investigated or explained. Nothing in the cleanup plan proposed by EPA addresses radioactivity. They've dropped this issue like a hot potato, but we, the citizens of Lake Township, have lived with it in our own back yards.

Similarly, we do not believe that sufficient investigation of the impact of the industrial excess landfill on the health of the citizens of the community has been completed. To our knowledge all that has been done is the ATSDR

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risk assessment to determine what future risk is presented by current levels of contaminants in the groundwater. Nothing has been done to determine what impact drinking, bathing, cooking and irrigating with contaminated water over many years has had on the citizens of Lake Township.

Stories of high rates of cancer, nonmalignant tumors and other illnesses in children growing up in the area are abound, but no public health surveys have been completed. When the issue has been raised the EPA waves us off stating that insufficient evidence exists to justify a study. If no survey is done how can the evidence be gathered? If a survey is done and nothing is found we will all sleep better. If a survey is done and a health issue is identified we can address it. If nothing is done we will never know.

It is the desire of EPA to sweep all the questions, both past and present, under the rug, to pretend they never existed or are irrelevant just to get the matter settled. Will the EPA join with the polluters and their public relations specialists in the call for natural attenuation to save money in the hopes that the

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community will be sufficiently flimflammed by their rhetoric and agree with them or at a minimum silently accept the back-alley deals because we, the community, do not have the monetary and other resources to challenge them? We hope not.

We hope that the EPA will meet their statutory obligations to thoroughly investigate the site and ensure that the remedy adopted for IEL will protect the health and safety of those of us who have to live with the decaying remains in our back yards forever. We are not convinced that this is what is happening now.

We ask that Mr. Martin complete a full investigation so we, the citizens of Lake Township, can have faith that a proper resolution to this most serious and disturbing problem is at hand and that our health and safety and the health and safety of our children and grandchildren is preserved. Thank you.

MR. KAUFMAN: Don, could I ask you a couple of questions because I think you've raised some important issues?

One of your concerns, if I understood you correctly, is that without the 1998

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groundwater data in hand you feel ill-equipped to fully respond to the proposal to change the remedy, is that one of your big concerns?

MR. MYERS: This statement is prepared by the trustees.

MR. KAUFMAN: Right.

MR. MYERS: And as one of the trustees I do not have an answer to that question because Sue Ruley actually is the one that's been more or less handling this.

MR. KAUFMAN: I understand.

MR. MYERS: And I think you understand the situation why Sue is not here.

MR. KAUFMAN: Right. And this is her church.

MR. MYERS: I would like to refer this question to Chris Borello. Would you ask her that when she comes to the --

MR. KAUFMAN: Sure, absolutely. But then the final question, Don, is it your sense that the trustees are uncomfortable with how Region 5 of EPA and EPA have handled this case up until now?

MR. MYERS: I think that would be a correct assessment.

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MR. KAUFMAN: Okay. Good. Thank you very much. I appreciate your statement on behalf of the trustees.

The next person is James Titmas. Am I reading it correctly? Mr. Titmas.

MR. TITMAS: Correct.

MR. KAUFMAN: Oh, boy, I'm batting a thousand. James, thank you very much for coming and providing information for us.

MR. TITMAS: Thank you. My name is James Titmas, I live at 3577 Yellow Creek Road in Bath, Ohio, and it may seem -- oh, Titmas, T-I-T-M-A-S.

My position in this case really goes back to the '70s when I was an engineering consultant to Hyman Budoff. We together were trying to get approval for an incinerator to destroy the wastes that were coming from my clients, which by coincidence happened to be all the principal responsible parties in this case.

I've been practicing in waste water treatment engineering now for just a little over 42 years. At the time that the method of destroying these wastes were turned down I kind of made it a life mission to find out what would

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happen to the wastes if they weren't destroyed, and since then I've been following and tracking what has happened at the industrial excess landfill because that's where the wastes went. Just because the agencies and people in authority turned down the method to destroy the waste, that did not mean that the waste went away.

I have a few -- I really have a lot of questions, but I have listed them and I would like the list to be made part of the record, and I'll provide it to you when I'm done after a few moments here. Associated questions can be presented briefly, which would give others a chance to participate, and I'll have -- answer any questions you might have when I'm complete here.

The fundamental problem appears to include a massive underestimation of the industrial excess landfill by the Environmental Protection Agency. This began on day one and continues today. Without adequate core sampling there has never been a complete assessment of the amounts and kinds of waste that are in inventory, how many pounds of benzene? How many pounds of phthalates? How many pounds of aluminum chloride

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and so forth and so forth?
We have the list and we know how much and what type of waste these industries produce, and we should anticipate that they will be in inventory. Oddly some of them weren't even tested for. Without identifying the true groundwater background there's been no comprehensive evaluation of the limits of the contaminated underground water. EPA relied on two wells that had a salt content of 200 milligrams per liter. The industrial excess landfill is located in the terminal marine of a glacier and as these waters leach the soils and gravels they flush all of the salts out of the soil.
In my experience, after testing hundreds of wells, the true background should be about 25 milligrams per liter, not 200, so that the representative background wells were clearly within the influence of the IEL and were not background, and the background, the true background may be as far as a mile away. These gravels have measured porosity as high as three feet per hour. These are open washed gravels that are down below this site, and it's not going

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to keep the waste close to the property by any means.
Without a containing cap over the IEL there's been no measurement of the amount and types of gas emerging from the landfill or, by the way, moving laterally under a frozen surface. For the last month or so we've had a thick snow cover with frozen ground below, that is, in effect, identical to a circular cap and can cause gas to migrate great distances from a landfill.
Akron had a bad incident at Hardy Road where houses a half mile from that landfill has gases accumulate in the basement and explode, and it was under the same conditions as the frozen ground.
Now, there's a gas collection system out there. It's apparently not in very good repair, but it can't collect gas if it's going through sand. I know the contractor that put the cover over that landfill, and all he was given to work with was sand. So not only does the sand let the gas out, it lets rainwater in and causes or creates the conditions whereby the waste that are in the landfill can migrate into the

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aquifer.
These critical shortcomings beg the following questions: How can the EPA determine what the federal government's share of the cleanup will be if the EPA refuses to test for government waste? And quite frankly, that will include both low-level and transuranic radioactive waste. Those are both being used by local government agencies, and if they're handling them we can be virtually certain that somehow that they will be in that waste stream. If that is documented it may actually turn out that the largest single principal responsible party by far may be the federal government, larger than all our local industries together.
How can EPA report to Congress the total cost of the IEL cleanup if it does not know how much of what kinds of wastes are involved or where the wastes have gone? Somehow the EPA has established a budget of what they're going to do and how they're going to do it. Incidentally, the pump and treat included a process called air stripping, which is a process where you spray water into the air and let the contaminants go in the atmosphere and attempt to clean the water.

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One of the reasons that's been set aside is the record of decision is the National Science Foundation has turned thumbs down on the process in its principal in concept.
I for one thank God that they've abandoned air stripping as a process to clean up the IEL, it never should have been there in the first place. Getting rid of the waste, yes, that would be good, but spraying them in the air would be a foolish mistake.
How can EPA claim there are no health risks if it does not know how much of what wastes are involved or where have they gone? How can EPA claim waste are self-attenuating when the obvious and simple explanation for the change in the token test results was that the underground water waste simply migrated from the test location? Between over two year or -- one to two year period the assumption was that whatever wastes were there would stay right in that spot. Well, with no cap over the landfill and so many people living in the area depending on water wells the groundwater will be moving, and what simply happened was that particular lens of waste simply moved off-site away from the test well and

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something else came in its place, in this case benzene.

But that's the nature of an industrial landfill, one week it gets aluminum chloride waste and solution from making synthetic rubber, two weeks later they get a big batch of phthalates from the making of vinyl, a few weeks later they'll get a big batch of benzene from somebody trying to clean up a raw product that was intended to make rubber or something like that.

What goes to the landfill are off-specification materials, materials where they were trying to make one product and somebody goofed and they made something else and they got to put it in a tank truck and get rid of it before the supervisor gets back. That's a simplification but that's the kind of thing that you're facing. So that you're not going to find any specific pure chemicals in there but you'll find this hodgepodge of debris.

When a raw gallon or two tank loads of benzene come to a plant, it's not pure enough to use in the process so they have to clean the contaminants out of the benzene, and when they

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have this batch of contaminants they've got to get rid of it and it will go to IEL, or probably will. They weren't allowed to burn it.

I was also wondering philosophically how much of a share of the final cleanup will the EPA accept due to the EPA's delays in finding the true facts and ultimate final solution for the IEL? There always seem to be enough time and money to do it over but never enough time and money to do it right. Why should our local industries that are still in business be made to carry the federal share of this cleanup or pay the sheriff corporations who's bankruptcy has been approved by the federal government thus excusing the liabilities of such companies?

There's been no clear presentation of how the EPA decided what the principal party -- responsible party should pay. As a result they rebelled because there isn't a clear plan. It seems to me that it's strictly an arbitrary and capricious method whereby the EPA says you, you and you will pay because you're the only ones left with money, but they don't identify how much they were and that hurts our community, especially if it's not the correct identification

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of how the costs should be.

Finally, there are about 70,000 known man-made chemicals, but the IEL contains the debris from off-specification production, the waste from cleaning raw materials and the waste from product refinement but EPA keeps testing for very limited number of chemicals. The question is what system does the EPA use to decide that it will not test for a suspected and probable waste?

And that concludes my direct questions, and I have a written handout for you all.

MR. KAUFMAN: James, thank you very much. I have a couple of questions. I think you raised some very important points.

Maybe you could put some -- when you leave, Mr. Titmas, put some at the end so folks who haven't gotten copies might be able to get some.

MR. TITMAS: Thank you. There are only a few, but I'll provide whatever is available.

MR. KAUFMAN: Okay. Great. A couple of questions. Number one, you're a geologist?

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MR. TITMAS: No, I'm a professional engineer practicing in industrial waste treatment.

MR. KAUFMAN: Terrific. Well, I'm glad you're in the field, and I'm glad we have you here to help us as an expert.

Do you feel it's appropriate or possible for you as a citizen to comment adequately on a change in the remedy without looking at the most recent groundwater data that's been developed at the IEL site?

MR. TITMAS: I have several problems with self-attenuation, they're fundamental. If the waste are digesting themselves with the aid of bacteria, that bacteria should be in evidence with the waste. No such tests or identification was made. They have not identified a particular biota that's responsible. They did not even identify whether it was aerobic or anaerobic in nature. They did not identify whether it was present in sufficient quantities to digest the waste down to the remarkable endpoint that existed.

Normally when a biomass will digest an organic, and that will happen, it stops

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functioning as it runs out of food and that may be as high as three or 4,000 micrograms per liter, in other words, at a level well above the lower reading.

Also, groundwater temperature's in the order of 55 degrees, and you have to have very ideal pH conditions and you have to have very carefully sustained conditions to maintain a special bacteria that digests a specific waste such as a phthalate or a benzene. That evidence, that backup material was simply absent, and it appears that their basis or assumption of self-attenuation was a desired or self-fulfilling wish. That's been consistent with my discussions with the EPA is that they like to avoid anything that may contradict their conclusions.

MR. KAUFMAN: So it's your feeling, I don't mean to put words in your mouth, as an expert that you don't really feel there's enough data that you've seen to draw the kind of technical conclusion that they've drawn?

MR. TITMAS: I agree with that. My conclusions specifically in this case was given the data that they presented as their finding, I can only conclude that that particular event of

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groundwater pollution has simply moved on to another location and has been replaced with water that's been flushed through the landfill and now they have another contaminant, and that is the nature of an industrial landfill.

You'll have these successive waves of different materials that reflect the event of when they were added and when they were flushed.

MR. KAUFMAN: And it was also your statement, I believe, that the wells, the two wells being used as background, are really impacted by the materials in the landfill. And am I correct in assuming that that means any conclusion about what is coming from the landfill is inaccurate because the background wells are technically in the wrong place?

MR. TITMAS: The problem is a little more complex than that.

MR. KAUFMAN: Okay.

MR. TITMAS: In our local wells, I've measured wells that have been contaminated by salt water storage for the highway department, I have found wells that have radon in them, background, natural background radioactivity or a naturally occurring radioactive material.

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MR. KAUFMAN: Right.

MR. TITMAS: We also have found wells that I've measured and tested that have as high as 90 milligrams per liter of chemical oxygen demand, which is due primarily to natural oils coming up from the deep strata up through the fractured rock and up to the surface. So sorting out what is specifically IEL, sorting out what is natural is a pretty tough problem, but they are so far off in their assumption in this case that a chloride count that is fully eight times to ten times the normal background, that it's been an absolute blunder. The minimum number of wells that they should test is probably a thousand wells, and they should probably test every well within a mile of the boarder of the industrial excess landfill.

MR. KAUFMAN: Every drinking water well within a mile?

MR. TITMAS: Every well, every groundwater source that they can find because without that they won't actually visualize or won't actually reproduce this event rising of the leading edge of these various plumes. There will be a plume leading edge for benzene, there will

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be one for chlorides, there will be one for phthalates, there will be one for all these other materials that are routinely handled in our local industries and government agencies, and those need to be identified and clearly shown. They haven't done that, haven't done anywhere near their homework.

MR. KAUFMAN: One final question, you mention government waste as potentially a major contributor to the environmental and public health risks posed by the IEL landfill. I assume you're talking about, among other things, radioactivity?

MR. TITMAS: Yes, low-level waste. We have five major Department of Energy facilities in Ohio, some of them are fairly remote, but they all have problems and especially getting rid of materials. Like a trichlorethylene or a dry cleaning fluid that has been used to clean materials of radioactive contamination and it would come in a barrel, something like this, a 55-gallon drum, and they had to get rid of them.

There's no possibility even though Piketon tried to get a permit, the State of Ohio

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doesn't issue such permits to burn radioactive material. They can't store it so essentially what happens, it goes to a landfill. They could identify several, for instance, that have no EPA supervision at all. When there's a charge made per ton of taking something to a landfill, no moneys are set aside to monitor that well to see that that landfill -- to make sure that it complies or evaluate the impact on the local community, so it's out of sight out of mind, ship it.

MR. KAUFMAN: Well, let me ask a question with regards to that then. Are you familiar or aware of any borings or soil analysis done by EPA where they look for radioactive materials that they didn't find it?

MR. TITMAS: Well, I had seen some reports of the IEL, the problem is one of identifying background again, what does one accept for background. Based on my own personal knowledge of what I knew was being produced and handled and what my own clients were working with, there's greater than a 99 percent probability that low-level wastes are in storage at the IEL.

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They're almost certainly there. The reason the EPA hasn't found any is they haven't done any core samples of any significant note on the site itself. They haven't gone down. They told me the reason they couldn't do core samples on the site itself, because they were afraid it would catch fire or they would penetrate a drum. Well, if they penetrate a drum and test from that drum some radioactive materials, their next official act is to dig it up and take it someplace else.

MR. KAUFMAN: As an expert, do you think that statement is valid technically as an expert in this field?

MR. TITMAS: That there are those wastes present?

MR. KAUFMAN: No, that it's not safe to core into the site.

MR. TITMAS: It's -- that's ridiculous, it's perfectly safe to core. We have many things at our disposal to accomplish a remedy in the event there's a problem. In the public districts it's far more important to know what is there than to sit back and say, Oh, I don't want to do a core sample because we might

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have a problem. I think they didn't want -- and this is putting words in their mouth, I think they didn't want to test because they didn't want to find it.

MR. KAUFMAN: Thank you very much, Mr. Titmas. I appreciate your expert testimony.

The next individual is Chris Borello, who has over the years done what I believe is an outstanding job in keeping up with all of the issues here and bringing it to everybody's light so that the public's interest will be served, and I'd like to thank you for that as a government official, Ms. Borello, and please go forward.

MS. BORELLO: My name is Christine Borello, 2816 Bridlewood Street, Northwest, North Canton.

My position is I've been the spokesperson/president of Concerned Citizens of Lake Township for 15 and a half years.

MR. KAUFMAN: Just hold it closer to your mouth.

MS. BORELLO: Is this okay? I've been the president/spokesperson for Concerned Citizens of Lake Township. I'm involved with the IEL for 15 and a half years. I want to thank

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you, Mr. Martin, Mr. Kaufman, publicly for coming to Uniontown today to view our Superfund site firsthand. We gave them a tour this afternoon of the site and to see some of the neighborhoods and also for this meeting tonight.

As you well know, it is our sincere hope that you will decide to continue on with your investigation of IEL. We strongly believe that there is a tremendous amount of evidence that warrants this further in-depth investigation, and we only hope that you have all the tools financially and authoritative-wise, power-wise that you will need administratively at your immediate disposal if this is your decision to continue on so that no additional delays occur.

While it is frequently stated that our group, CCLT, has been fighting for the truth at IEL for over 15 years, in reality this battle began with townspeople back in the mid '60s when people like Milly Griffith and her family took the landfill owner, Hyman Budoff, to task.

And I want to take a moment to tell you that Milly is 81 years old and she desperately wanted to be here tonight. She is at

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Aultman Hospital. I ask for your prayers, she is not doing very well. She cried this morning, she wanted so much to meet Mr. Martin and to be here.

She lived in the community since 1954 on the edge of the dump and was one of our evacuees, her home was purchased. She had the vinyl chloride in her well and it was one of the key wells that provided ultimate water to the other homes based on her findings. She had explosive gases in her home and had to live for years with a methane mine alarm in her basement that they would live with their car keys on their night stands and when the alarms would go off, and they would go off frequently, they had to immediately evacuate their homes, and this is the hell they lived in for approximately four and a half years until the EPA finally decided, thanks to Mark Bashor, head of risk assessment at ATSDR, to go a step beyond and stood up to EPA and demanded that they be evacuated into hotel rooms.

Also people like Larry Prince, who will speak later in the evening. When I was still in high school, no offense, Larry, he

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started round one in the late '60s, early 1970s, lived on the edge of the dump on the north end on Amber Circle, and he will tell you a little bit about his story. These people bravely fought this dump while the polluters were actively dumping in the '60s and '70s, from '66 to '78. They fought the good fight before there was even a Superfund program, state or federal. They wrote letters to the editor and collected over 900 signatures on a petition and when it was just a little Amish/Mennonite farming community demanding this dump be shut down because of what they saw, all the barrels and tankers coming at night. Nevertheless, they knew it was dead wrong to be dumping the large volumes of liquid chemicals directly onto the ground in what was a former sand and gravel pit.

Indeed it ultimately was admitted in a 1971 memorandum at the local health department that up to 11,000 gallons a day of liquid chemicals were being dumped into the IEL, and the state EPA admitted when they submitted us to Superfund, because you'll hear the low ball now there's nothing left in there, they admitted that the site contains, and this is a direct quote

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when they submitted to Superfund in 1983 or '84, greater than 780,000 tons of, quote, hazardous substances making this site over a period of time larger than the infamous Love Canal, and they had city water to begin with.

Unfortunately from the 1960s on to the present date this community has been met with incredible, very highly unusual I'm told, opposition at every turn in our effort to obtain the truth about what was done to this site and our attempts to hold the EPA accountable for its work that it has performed here.

When my group started round two after Larry and Milly and the others fought round one, I began this in August of 1983, we were told the burden of proof was on our citizens. They said we had no proof, we would never get any proof and we would never get monitoring wells and we would never make Superfund. Well, we obviously proved this one local official wrong, we went on to fight and get on to Superfund and ranked fourth out of 244 sites in 1984 including the military installations.

But, the fight for justice and truth has been an ongoing nightmare that seems will

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never end. We were warned repeatedly it was just too big, the opposition was just too powerful, that we could never win, and they said absolutely truth cannot come out here. However, despite these incredible odds we cannot -- I personally cannot walk away, although many times I wanted to, because we knew the health and welfare of the citizens is at stake and that's our sole motivating force behind this, the kids, the people, the families, the friends and neighbors.

How many deaths have occurred as a result of exposure to toxins coming from IEL through the water, soils and gases I'm sure we'll never know. But while we can do nothing about the past there is much that can be done to prevent future illness and defects in the children in the future.

It is totally inexcusable that EPA has failed to monitor this site on an ongoing basis. The last time they sampled for chemicals or radiation, except for a few split samples to check up on the companies this past September, they allowed -- since March of '93 they did nothing to this site, they allowed the stuff to continue to flow out. They knew, again, 780,000

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tons purchased sand and gravel pit and they knew the rate of flow was up to six feet a day and they did nothing to monitor for five years. They just -- they just walked out of here and then they began their behind-closed-doors negotiations in federal court with the PRPs, and you've heard about the results of their behind-closed-door dealings.

It is also disgusting to hear that EPA attempts to hide behind and mislead officials in attempts to putting their spin out timely and saying the real problem with Uniontown lies with poor communications. They want to write this whole thing off. If they had PRed you folks better there would be no problem here, the problem would have been taken care of. Of course, this couldn't be further from the truth and they know that, it's not the truth.

The fact is we all understand too well what went on here. We've done our homework over the last 15 years and have survived eight different project managers from the federal EPA and nearly as many from the state. Their obvious goal is to discredit me and my group and trustees and any other people including high-level

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officials.

I'm in very good company with some of these people like Thomas Grumbly, former head of Nuclear Waste Disposal at DOE, president of Clean Sites, they've done their best to discredit all of us because they fear someday someone might listen to us. Well, Mr. Martin, you have heard us, thank God, and you believed in citizens, and we are very grateful that you are here.

The facts and details at times appear to be complex and confusing and I hear this over and over again, You're losing me, Chris, this is too complex, too complicated. Well, that's true on one hand. We've recognized a distinct pattern that has evolved over a period of time and in indeed now it seems in retrospect too simple to pinpoint what has happened at IEL.

As we inherently knew then in the midst of each and every battle, and there were hundreds of battles, we fought on every scrap of piece of data, we've had to claw and scratch for every single piece of information. We realize now that simple -- plain and simple a matter of evidence or lack of evidence.

When we fought year after year for

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things like core samples we knew that without cores being done some fatally flawed plan could develop just like now, the plan you're all hearing about, this wonderful plan of letting Mother Nature take care of it, let natural attenuation take place now being promoted by the EPA and PR man that they have hired by the polluters.

Of course, the most glaring example of this town being deprived of crucial evidence is when high levels of radiation were thrown out in 1991. It is important to note that these high levels were found five years after we had begun asking for such tests to be done. The appropriate time to do these tests were during the period called remedial investigation which began in 1985 and it ended in July of 1989 when they signed our record of decision or our ROD. Instead of doing these tests at the appropriate time period we begged, we pleaded, we wrote letters, we lobbied the Congressmen and Senators, they refused. It was quite strange that they refused because we had old-timers like Milly and her family that saw, witnessed the nuclear samples coming in nightly for two solid years in

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1969 and 1979 -- excuse me, 1969 and '70 at the height of the Vietnam War, and they wouldn't do the testing during the appropriate time period.

I always have to laugh when I hear that the EPA has blamed citizens and our group for these delays. Oh, we would have cleaned the site up a long time ago if Chris Borello and their stupid group would have kept their mouth shut. The problem is we couldn't keep our mouths shut because we knew too much, and we couldn't sit by and watch a cleanup take place that we knew from what we had studied and had done our homework could inadvertently cause the spread of pollution further down the stream laterally, and even if you gave the whole town alternate water we are very much concerned about the gas issues and there are studies that have totally vindicated us on that subject.

In any event, had the data stood in 1991, I'm referring to the high levels of radiation, and you hear about the companies going in now, and they've done a round or two, and they get to go into federal court and they get to determine our lives tossing out virtually about a decade's worth of testing, right? They get to go

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in with the contractor they hired and now they get to reopen the ROD behind closed doors. Well, I contend had that data stood -- and that's why we asked Mr. Martin to investigate this radiation issue because had that data stood, the levels of radiation found there were well above regulatory concern limits, and that's a key buzz word, regulatory concerned limits, it's a legal terminology and it's all important.

We firmly believe had that data stood almost nine years ago they would have reopened our ROD, our 1989 ROD, and we would have -- we believe a cleanup could have begun or at least we could have really been further ahead than eight years ago, but instead they threw the data out, they smeared the commercial laboratory, couple labs, and then threw one thing after another to blur and confuse the issues, although Ohio EPA did do further radiation testing and they did find radiation in the groundwater and it was above background according to our experts. Dr. Marvin Resnikoff, who would have liked to have been here tonight but could not be, he claimed some radiation rates were 140 times over background.

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Of course, while the EPA has denied the citizens the evidence that we needed to reopen our ROD the -- and the government played the regulatory concern game, the state and federal EPA have now turned and caved into the wishes of polluters undoing over nine years worth of testing that they did do there. They didn't do the best testing in the world, but what they did do there they are throwing out by accepting the evidence of the polluters based on their one or two rounds of testing. What is wrong with this picture?

And in closing, while EPA has repeatedly attempted to dismiss its citizens' concerns here by saying it's just a handful of troublemakers, they know it is not the truth. Indeed, there have been many officials and other government agencies that have tried to help us including the Department of Energy and the Nuclear Regulatory Commission and ATSDR.

EPA likewise has ignored the advice of our TAG experts. Our group was the first group in the country mandated by Congress, and we received a total of a hundred thousand dollars. We hired some of the nation's best experts, as I

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just mentioned, Dr. Resnikoff, Dr. Cole and others, and they said many of the things Mr. Titmas stood here, you know, ten years ago they said it and EPA blew them off. The bottom line is anyone who dared to challenge U.S. EPA to hold them accountable has been dismissed or blown off.

Thanks to Dave Herbert and the local trustees, they did what's called a freedom of information act or request, and they contacted through this program a paper trail, and we haven't read about it in the papers yet, I hope we will, but a letter that the township received, their attorney, was that EPA solicited two of their own technical people in Ada, Oklahoma, Dr. Mary Randolph and a subcontractor who worked for them, an opinion on this attenuation idea. And this paper trail begins in like '97, it continues on to March 6th, 1998, and what they learned in this paper trail was that when Dr. Randolph was consulted, again, she was solicited by Region 5 for an opinion on what the companies were proposing to do there, she responded in a letter that she had a multitude of concerns and recommended five more rounds of testing and said

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that the levels of certain chemicals were increasing, not decreasing, but -- so they didn't like what Dr. Randolph said so they won't let the Canton Repository now talk to her.

Again, I state that anyone who has disagreed with Region 5 or U.S. EPA is dismissed or discredited, therefore, it comes down to this question that I ask Robert Martin and others, is U.S. EPA and our state EPA, because they're concurring with this lousy plan, are they above the law and can they be held accountable for their actions?

We suspect that maybe some laws have been broken here at this site if an in-depth investigation is done. We hope that this investigation will enable us to hold EPA accountable because if they can get away with what was done at Uniontown they can do this anywhere in the country and that will be a tragedy for everyone in this country.

I want to say God bless you, Mr. Martin, for coming here, and I hope that God will be with you in the days to come because you really are our last hope. This community and a lot of -- the health and welfare of a lot of

people we strongly believe is at stake here so thank you very much.

MR. KAUFMAN: I have one question, Ms. Borello. I've noticed you've sort of been the citizen expert reading every piece of paper, all the data. Have you seen any test borings in soil done either by EPA or the state Environmental Agency that did not show plutonium and/or other radionuclides in it when they looked for it?

MS. BORELLO: No, every time that we -- a boring we saw they came up with radiation.

MR. KAUFMAN: Every time, plutonium or other radionuclides based on all the data you've seen?

MS. BORELLO: A boring, right. Not the core samples. When they bored into the landfill and we saw the data when they looked for radiation, every time they looked we believe they found radiation.

MR. KAUFMAN: And that's based on reading all of the data?

MS. BORELLO: Correct.

MR. KAUFMAN: Okay. Thank you.

MS. BORELLO: And I also have a list

that is a handout but to give the audience and everyone an idea of the seriousness of the questions that we have uncovered through our 15 and a half years worth of work, and I know it's overwhelming but it's just kind of -- just to illustrate, it's not one or two concerns that we have, there's just a multitude of them. And our concerns are not limited to this list either, but I'd like to submit those as well.

MR. KAUFMAN: Thank you very much, Ms. Borello.

Kathy Magel. Did I pronounce it correctly, Miss Magel?

MS. MAGEL: Yes.

MR. KAUFMAN: Good.

MS. MAGEL: My name is Kathy Magel, M-A-G-E-L, my address is 1025 East Maple, North Canton.

Mr. Martin, Mr. Kaufman, I'm here to relate a letter that although is remote of CCLT it appears it may have some significance.

For background information, after newspaper articles of a Uniontown dump of the Tuscarawas River being full of contaminated fish I realize my residence of North Canton was in the

middle.

I contacted Miss Borello as a fellow band parent and inquired about specific information of which chemicals were suspect and at what levels. She provided an abundance of information.

My family drove the material to the very man who had a hand in the making of these man-made plutonium isotopes, my father-in-law, Dr. Theodore Magel. For proof I offer you this publication from the Los Alamos Science at which he and his partner are featured on the cover and inside describe what, 50 pages or more a detailed account of their pioneer work on plutonium, (indicating). You may have a copy of any part or all parts of that publication.

Dr. Magel upon inspection of the CEP report was alarmed that this particular mix of chemicals lead to nuclear waste, and he would know, and he demanded to know why EPA disavowed CEP's results. Independently of CCLT I contacted CEP, and eventually a Mr. Meuller of CEP spoke directly, directly to Dr. Magel via phone. The subject matter centered on the testing procedures Meuller used. Meuller was strenuously defending

his representation and insisted from two chemists that it is there and that CEP was framed.

Dr. Magel asked for the workup material that lead to CEP's conclusions. Meuller indicated all the workup material was unaccessible in the judge's office. Dr. Magel was now worried of a cover-up since logically wouldn't EPA flaunt any errors in the cover-up -- in the workup rather than allow them to be hidden? Meuller did admit that there was an error of one technician who forgot to subtract background on a few but not all specifics, but, after all, that background should have been very minimal in any other ordinary circumstances.

Knowing how serious the disposing of all the chemicals at the Manhattan Project was, the scientists have developed proper methods of disposal prior to their making any -- prior to their making any nuclear devices. He will assure you one of the methods did not include dumping in Uniontown, Ohio approximately five miles from where his granddaughters were reared.

With such a disgusting scenario Dr. Magel drove to Uniontown to meet Chris Borello for a personal tour of the dump. As they say,

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seeing is believing. Dr. Magel reviewed the CEP report and now suspected a foreign uranium source found in Africa that is highly enreached -- enriched and certainly not found in Uniontown, Ohio.

At his yearly medical physical Dr. Magel brought and gave copies of the materials to the current nuclear scientists at the Los Alamos laboratories for their review and then wrote his sincere recommendations to Senator Glenn. Senator Glenn's office confirmed the receipt of this letter via fax. Please listen to Dr. Magel's words in context as he is a leading national authority on plutonium.

Dear Senator Glenn, this is Dr. Magel's words, I am writing to you at the request of my son, Thomas Magel of North Canton, Ohio, who is greatly disturbed by the terrible behavior of the Environmental Protection Agency, EPA.

He sent to me and I read large piles of letters, analytical reports, maps, et cetera, about the industrial excess landfill, IEL, in Uniontown, Ohio.

Your letter of May 1st, 1997 to Chris Borello, although he said Kristi Borello, Chris

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Borello, president of Concerned Citizens of Lake Township, CCLT, was certainly to the point, however, I was disturbed by the May 30th CCLT letter to you and Congressman Sawyer indicating that EPA was not really cooperating with your suggested way to resolve this matter.

For your information I am 79 years old, a Ph.D. chemist from the University of California Berkeley in 1941 and one of the very early chemists, 1942, of the Manhattan Project as that has described. I was sent from Chicago Labs upon request by Dr. Oppenheimer to Los Alamos in early 1944 to prepare the first milligram and gram quantities of plutonium metal. It doesn't say here but he was successful.

During my work at Los Alamos I became contaminated with plutonium along with 25 others whose health is still regularly monitored, therefore, I feel knowledgeable about the concern of the Concerned Citizens group who in particular my son and his family in North Canton. This whole subject is not a game nor is it a subject that can be taken lightly or one more action may be taken based on very questionable or insufficient information.

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What really galls me is the attitudes and actions of EPA. There is no reason whatsoever for the EPA to stand against doing more honest testing, core drilling and so on by one or more independent qualified labs not controlled by the EPA of which I think you could supply some names.

Much information indicates that radioactive material was dumped at the IEL, and it is disgusting that the Army and others in our government are stonewalling and/or lying about what really happened, and proving one way or the other would not require some silly number of like 10,000 wells.

Senator Glenn, I know you're very busy with the hearings in Washington, this is obviously before he went up in space, but I feel that a couple more strong calls by you can get this problem out of the hands of EPA and in the hands of an unbiased, honest department qualified to do a good and proper job. Time is of the essence so please do whatever you can to prevent EPA from doing a quick and dirty cover-up until testing can show one -- once and for all if radiation contamination must be handled, and this

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is what I think he cares about mostly, along with all those other harmful organic materials in the dump.

Sincerely yours, Dr. Theodore T. Magel. Thank you.

MR. KAUFMAN: Ms. Magel, I've just got one question.

MS. MAGEL: Sure.

MR. KAUFMAN: And it was very powerful testimony. Do you believe there was and/or is a cover-up as it relates to the IEL case?

MS. MAGEL: Based on everything I've heard, probably secondhand I've heard, absolutely.

MR. KAUFMAN: Thank you very much.

MS. MAGEL: Thank you.

MR. KAUFMAN: Rex E. Shover. Did I pronounce it correctly?

MR. SHOVER: My name is Rex Shover, S-H-O-V-E-R, I live at 3707 Edison Street in Uniontown.

I served on the volunteer fire department here for 15 years, I resigned in around 1976. I had a three year interruption

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during that 15 years while I served my country.
While on the fire department numerous times late at night between 11 and 1:00 in the morning I saw tank trucks carrying radioactive insignia pulling into the landfill. That landfill closed at 5:00. My question has always been, why were these trucks pulling into the landfill that late at night dumping something if it wasn't legal?
MR. KAUFMAN: I have one quick question. Did you ever get any license plate numbers on any of the trucks?
MR. SHOVER: No, sir, I didn't.
MR. KAUFMAN: Okay. Thank you very much, Mr. Shover.
Greg Coleridge.
MR. COLERIDGE: Good evening. My name is Greg Coleridge, and I'm the director of Economic Justice & Empowerment Program of the Northeast Ohio American Friends Service Committee, which is a Quaker social action organization. It's C-O-L-E-R-I-D-G-E.
I'd like to thank you, first of all, Mr. Martin, Mr. Kaufman, for being here this evening, Miss Post, as well for joining us. I'd

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also like to acknowledge the presence of another guest that came out of town to be with us this evening, Danielle Brian, with a group called Project On Government Oversight in Washington, D.C. I guess you could call it a federal watchdog organization. I want you to stand up.
And I'd also like to acknowledge Sue Ruley, who was mentioned earlier as being a township trustee, who I understand goes to this church and arranged for the use of this church, and I wish to acknowledge her and her efforts in her getting us this facility.
The American Friends Service, as I mentioned, is a Quaker social action organization which is founded on, among many principles, the belief in the dignity and worth of every person and to see that of God or good in all human beings regardless of income, race, gender, religion, physical ability or where they may live.
Many people who we work with and who support our work live in or near industrial excess landfill here in Uniontown. For the past two and one-half years we have tried as best as we can to support the Concerned Citizens of Lake

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Township and the Lake Township trustees in their efforts to learn the truth of what is buried at IEL and then take appropriate action to remove the dangers to the community.
We have studied a bit the history, as long as it is, of the IEL. We have analyzed numerous reports from the EPA and various scientific experts. We have read volumes of correspondences between different federal agencies, public officials, CCLT and the township trustees. We have spoken directly to several scientific experts who at one time were intimately involved in, so to speak, digging into what is in the IEL. We have also experienced firsthand attitudes and actions of EPA regional staff toward citizens and compared them to EPA attitudes and actions toward representatives of the polluting corporations responsible for some of which is buried just down the road from where we are this evening.
We do not claim to have a handle on the complete truth, far from it. All we can do is comment on what information we have analyzed, who we have spoken to and what we have experienced firsthand. From this we believe that

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what we have here at IEL is, to sum it up in one single word, a mess, maybe that's two words, environmentally, bureaucratically and morally.
IEL to us is first an environmental mess. Chris and Mr. Titmas and others have gone into that a wee bit, in fact, quite a bit. We believe there is sufficient evidence to indicate that there are chemicals and radioactive compounds that are being ignored. These are dangerous to the community and destructive to the environment. They are not going to magically evaporate unlike -- no matter what hired public relations persons and labs connected to the polluting corporations may claim.
Secondly, to us IEL is a bureaucratic mess. The chief culprits are those at the top of EPA Region 5 and at the state. EPA has exhibited repeated screw-ups and cover-ups, half-truths and half-lies, double crosses and double standards in their statements and actions toward the community, community groups and township trustees. They have, to name and reiterate what has already been said, a few problems, botched the handling of testing samples, invalidated test results on flimsy grounds showing high levels of

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radiation, refused for many years to conduct soil and gas testing, ignored concerns expressed by outside technical experts as well as their own technical experts which contradict preconceived conclusions, replaced members on the Science Advisory Board with those who, for the most part, did not have radiation experience and then used the Board's report claiming there is no radiation problem as definite proof and finally have claimed other agencies support their revised cleanup plans when they did not.

We make a distinction between the leadership and the professionals at these agencies. We are not expressing serious concern with the mid-level or low-level staff at EPA, for the most part these employees are professionals dedicated to the pursuit of truth based on sound science. The problems seem to arise from the upper-level employees and appointed leadership and from the basic policies of the agencies themselves.

What is unclear to us behind this EPA bureaucratic mess is to what extent all this deception and distortion have been done to protect, if you will, the necks of the upper

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echelon of EPA and to what extent these actions have been done to protect the, again, if you will, necks of other entities EPA at the regional and state levels have merely shielded, that is, corporations, other federal agencies, compliant public officials and branches of the U.S. military. This certainly deserves further investigation.

Finally, to us IEL is a moral mess. The moral compass by the upper echelon of EPA and others responsible for whatever lies within the IEL has been, we believe, knocked off center. The concerns and interests of the human beings who live and work in Uniontown have been placed below the concerns and interests of other entities, certainly the polluting corporations, maybe other entities as well.

Moral priorities have been misplaced. There has been a double standard.

When the polluting corporations, quote, volunteered, unquote, to lead the testing round of water samples in March 1997 EPA agreed, however, when the community representative showed up asking to have samples drawn from the ground for them EPA refused.

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When the polluting corporations offered to send the water samples they drew to their own labs, which were not certified by EPA, EPA agreed, however, when community representatives said they would send drawn water samples, if given to them, to EPA certified labs EPA still refused.

When the polluting corporations claimed that no further soil or gas tests for radiation are needed EPA agrees, however, when community representatives claim, based on sound advice from outside scientific experts, that further testing of soils and gases for radiation are needed EPA refuses.

Representatives of the polluting corporations have been present and have an active seat at the table at the federal court proceedings in Cleveland concerning cleanup at IEL. Representatives of the community, on the other hand, only gain a seat after raising a public outcry but still have no equal voice to that of the polluting corporations.

All of these and many other double standards leads one to ask several questions, who should have more rights in our society, human

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beings or corporations? Who's in charge or what's in charge? Do we the people have any authority over EPA or are we merely left to beg or plead with EPA while their agenda too often merely mirrors that of corporations? Are public and administrative policies here affirming the basic dignity and worth of human beings in this area or merely affirming the narrow interests of corporation? All of these, we believe, are basic moral questions.

The problems here are at root, not problems, as Chris Borello has said, of miscommunication or misunderstanding, they are problems of power and authority, who's got them and who doesn't.

In the long-term we must all rethink our relationship between ourselves and the regulatory agencies like EPA that are supposed to, anyway on paper, exists to serve our ends. We must also rethink our relationship to ourselves and corporations which have over time come to assume even greater powers than ourselves.

In the short-term there must be a thorough in-depth investigation, we believe, of

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the IEL by the office of the federal EPA ombudsman. This must be the first step preceding all others. A thorough investigation of the past practices, procedures and evidence is a crucial start of a sequence of events. Through its actions of the past decade and longer EPA leadership at the federal and state levels have violated whatever trust they had with the community to pursue any other initial step.

As it's said, those who forget the past are condemned to repeat it. A thorough investigation of the past at the IEL is necessary to ensure that past mistakes are not repeated in the future. Thank you.

MR. KAUFMAN: Greg, I have one question. Do you believe there was and/or is evidence of a cover-up related to the IEL activities?

MR. COLERIDGE: Again, I can only comment based on what we have read, who we have spoken to and what we have heard secondhand, and it is our belief that to whatever extent, and it's difficult to know to what degree it is, without a question there is a cover-up.

MR. KAUFMAN: Thank you very much.

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(Short recess was taken.)

MR. KAUFMAN: Again, Werner Lange is the next person providing information. Thank you, Mr. Lange, I appreciate it.

MR. LANGE: Thank you and good evening. I'm Reverend Werner Lange, ordained minister in the United Church of Christ. Lange, L-A-N-G-E. And I would like to add my voice in the wilderness to all others who have called for a full-scaled immediate and independent investigation into IEL. Others have spoken eloquently about the clear need of such a thorough investigation based upon the overwhelming evidence, both direct and circumstantial, of widespread and spreading deadly pollution, and I echo that urgent call for an independent investigation and a genuine cleanup of the Uniontown site.

However, I encourage you, Mr. Martin, Mr. Kaufman, to take one further step and make this long overdue investigation truly comprehensive and responsive. This toxic monster euphemistically named industrial excess landfill has at least two other major residences in northeast Ohio, the Ravenna Arsenal and the

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Ashtabula River.

Like the IEL both of these sites contain an enormous amount of extremely hazardous and toxic waste dumped there by many of the same companies and much for the same reasons. Like the IEL these highly toxic waste dumps exists in communities occupied by either low income or moderate income Americans, ones evidently deemed vulnerable, if not downright expendable, by the polluters.

Together these three sites form a trinity of death, disease and denial. Each is a real and present danger to the residents in northeast Ohio. Each is filled with carcinogens, including radioactive waste, dumped secretly and illegally by irresponsible military industrial complex, and each site has also been the focus of official neglect by the EPA. Consequently, citizens like us, which these government agencies are duty bound to protect, have been and continue to be exposed to extremely toxic, hazardous and even radioactive substances.

Residents near each of these sites have been suffering and dying from unnaturally high rates of cancer for years, and this man-made

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tragedy continues to this day. And because it is a man-made tragedy it is also a crime but it is more than a crime, I submit it is a moral outrage, one that is compounded by organized cover-up which has as much contempt for the truth as the corporate polluters have for the lives and the lawyers of their victims.

Corporate polluters that are responsible for this ongoing destruction of life, health and truth have used intimidation, co-optation and disinformation to cover up their criminal negligence in disposing radioactive, toxic and hazardous waste in the back yards and rivers of northeast Ohio residents. At each site corporate polluters have employed and continue to employ high-powered PR agents to cover up their crimes, slick masters of deceit and purveyors of junk science who are called upon to produce one lie after the other to undermine discovery and to undermine broadcast of the horrific truth that they have created.

And their latest lie, you've heard it tonight, is called natural attenuation, a code phrase for do nothing and an invitation for more ecological violence. Natural attenuation is an

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unnatural fraud. In fact, it is an anti-natural sin, a blasphemy against the Supernatural, and God will not be mocked by such lies, by such crimes and by such sins and nor will the citizens of this state and this region.

I submit to you that it is both sinful and criminal to inflict these toxin wounds upon Mother Nature and tell her to go heal thyself. It is both sinful and criminal to inflict these fatal diseases upon area residents and then blame them for the demise. It is both sinful and criminal to dump these deadly substances into our back yards and refuse to accept cost and responsibility for their removal. And finally, it is both sinful and criminal to do all this damage and then lie about it blatantly through cover-ups, junk science and intellectual prostitution.

An ancient wisdom instructs us that in war truth is the first casualty. In this domestic war truth continues to be a casualty and so do many, many residents afflicted by cancer. This corporate culture of death and disease must end, and let the beginning of that end start right now right here in the house of one who

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promised you shall know the truth and the truth shall set you free. Mr. Martin, let that promise be fulfilled for the sake of our children, for the sake of our children's children and their descendants to the seventh generation and beyond. Thank you.

MR. KAUFMAN: Is it Reverend Lange?

MR. LANGE: Yes.

MR. KAUFMAN: Reverend Lange, just one quick question. Do you believe there was and/or is a cover-up related to the IEL case?

MR. LANGE: With every fiber in my body.

MR. KAUFMAN: Thank you, sir.

Roy Campbell is the next individual on the list who wanted to provide information, is Mr. Campbell still here?

Okay. Terry Witsaman, is that pronounced correctly, sir?

MR. WITSAMAN: Yeah, Witsaman.

MR. KAUFMAN: Witsaman. Sorry, Terry.

MR. WITSAMAN: My name's Terry Witsaman, 1785 Spotwood, Northwest, Uniontown, Ohio, formerly of 3919 Edison Street, Northwest,

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Uniontown, Ohio. W-I-T-S-A-M-A-N.

As I said, my name's Terry Witsaman, I've been with Concerned Citizens for the last 13 years. I got in in the beginning, and I'm going to be here at the end. And the residence where we previously lived I can -- we've experienced what toxic chemicals can do and how they make you feel because our residential well was contaminated with two of the toxic chemicals that were and are at the landfill right now.

Also, my daughter went to the day care center that used to be at the landfill. One day we got a call from them, they told us to come and get her because they were evacuating the day care center because it might explode because of the methane gas.

But what I want to talk to you tonight about is I was the project manager, and the technical assistance grant, one of them, that our group, Concerned Citizens of Lake Township, received and the fact that presently the EPA has let the polluters do the sampling up at the site and the polluters write the report and the polluters do the negotiation behind closed doors in Cleveland with a judge and excluding citizens

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to me is beyond belief and that should be investigated.

I know when we first got the technical assistance grant when we were hiring our contractors, one of the things that was specified in that grant was that anyone we hired could not have any contact and could not have done any work for the polluters at that site and yet U.S. EPA now has let a consortium of rubber companies do the testing that has lead up to this new revelation on natural attenuation. I think there is -- even though it is legal I think there is an inherent conflict of interest and I think it's wrong.

Superfund law -- one of the things that the Environmental Protection Agency is supposed to do is protect the environment, and in Superfund law they're supposed to protect an environment in a Superfund site by reducing the toxicity, the mobility and the volume of hazardous waste at that site. Now, as you've heard, there was over a million gallons of liquids dumped at that site and 780,000 tons of solids. They're also supposed to restore the groundwater to its beneficial use.

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Now, 15 years ago when this began I had a lot of faith that U.S. EPA, the Environmental Protection Agency, was going to protect us, and I thought that they were going to do exactly what the law prescribed they should do, which is reduce the toxicity, mobility and volume of constituents of that site. They're also supposed to protect you from release or threatened release of toxic chemicals from that site. It's been 15 years and I have to ask the ombudsman is EPA doing their job? Are they doing their public mandate, their mandate by Congress, and is this, is this what Congress wanted them to do?

15 years, it's been 15 years. In that 15 years every year, and this is according to the dumpers' own contractor, 27 percent of all rainwater that comes out of the sky that you see in this town every year filters down through that dump and pushes the toxic chemicals out of the dump, pushes more of them out of the dump, pushes them maybe to your house. If you're not on alternate water supply, because they keep talking about the alternate water supply is protecting all of Uniontown, well, all of Uniontown is not

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on alternate water and it is not protecting everyone in Uniontown.

So I think the ombudsman, I have trouble with that word, has to look at that, is EPA doing their job here? Are they protecting us in a timely manner? I don't think so. I don't think they're protecting anyone because all the things that I told you about in the Superfund law, they have not done one thing to protect a single person other than put a limited alternate water supply in this town.

Everyone else, everyone else is at risk and I for one, I am mad as hell. It's been 15 years and I don't think anyone in this room and anyone that reads about this meeting or hears about this meeting should take this anymore.

It's really good to see all these faces in the audience. I see a lot of old faces that used to come to the meetings. I think the U.S. EPA is waiting us out, waiting for us all to die, waiting for us all to get tied of fighting this fight, but we're not going to do that. We're going to keep on fighting, and we are ultimately going to win this thing.

Currently this insanity about natural

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attenuation at this site -- I have before me, there's a 27 page document. I went over to the library in Hartville and I found this document, and the document is on implementing natural attenuation at Superfund sites, so I thought, well, I'll take a look at this document, I'll have a look at the whole thing. Well, curiously every other page of this document was missing, and this is what governs, this is one of the guidelines that U.S. EPA uses in implementing a remedy, nonremedy, if you will, of natural attenuation, and I thought it was very curious that that document was as -- would be very important and very helpful to citizens in this town that only every other page of it was there.

I was able to find it on the Internet, and after reading it I can't believe that U.S. EPA would even think of implementing a remedy of natural attenuation at this site. They're only using this remedy at six sites in the whole country and most of those are oil spills. We have a very complex site that doesn't fit the characteristics of this report saying that that remedy should be implemented at a site.

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And one other thing, part of the technical assistance grant or the whole purpose of the technical assistance grant was to involve citizens in the decision-making process at the site. What was going to happen at the site, you have the decision in making that decision what was going to happen to you, how was it going to affect your property values, your lives, your kids' lives and future generations' lives.

And up to the point of the record of decision we did have citizen participation at public meetings and we had technical assistance grant, we hired experts to review EPA's data. We weren't allowed to do any testing of our own and we weren't allowed to test any samples from them with these experts but we were able to hire these experts to review their data. Our experts didn't agree with their data. They didn't agree even actually with the record of decision at this site, but it was better, certainly much better than what we're getting now, which is basically nothing.

The rubber companies from the very beginning have said that there's no problem with this site, there should be no cap on this site,

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there should be no add to this site, none of these chemicals are affecting anybody from this site according to their report from 1995, I believe.

And it's really curious that Linda Kern in a transmittal U.S. EPA response that she responded to comments by the company on the 61st cent design, she was a project manager for U.S. EPA on the site, she says in this report right here, she categorically denies everything that U.S. EPA -- all the evidence they're using to implement this natural attenuation remedy. And I'd like to know how they can reverse themselves with such stodgy evidence. They're contradicting their own on-site project manager, they're contradicting 15 years worth of investigation with about a year and a half or two years worth and in doing so they've shut you out completely because the only chance you have legally -- now, this is something in addition here, but the only chance you have to legally participate was the 60 day public comment period, and all they have to do is look at them and say, We don't agree with your comments and they can implement that remedy or no remedy.

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So I'm asking you now and I'm asking the ombudsman now to do all you can to investigate what's going on with this site for the last 15 years, what's going on with this site now so that we can get a cleanup, a cleanup, not a natural attenuation but we can actually do what the EPA is supposed to do and that is protect our environment and they are not doing it now. Thank you.

MR. KAUFMAN: Two quick questions. You mention alternate water, approximately what percentage of people, if you know, within a one mile radius of the site are on alternate water?

MR. WITSAMAN: I couldn't tell you with any accuracy what percentage of the people within a one mile radius are on alternate water, but I can tell you that most of the people that are on alternate water are west of the dump, north and northwest of the dump. Anyone that is north of the dump pretty much and east of the dump and there's a few houses south of the dump are not on alternate water.

MR. KAUFMAN: To your knowledge has any contamination been found in areas north, east and south of the dump?

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MR. WITSAMAN: Yeah, there was contamination, and I have a report over there, that was found in northwest Uniontown. There was a number of houses that had contamination, including ours, in their drinking water wells above the -- that were a health risk standard.

In fact, I think the Stark County Health Commissioner, Bill Franks, is he in the room yet? Well, he was here. Oh, he's here.,

At the time he had told the people that had the contamination in their wells not to have any contact with the water, not to bathe in it, not to drink it, not to inhale, you know, off gases from steam or anything else. Is that correct, Mr. Franks?

MR. FRANKS: Yes.

MR. KAUFMAN: And those areas are within approximately one mile of the site?

MR. WITSAMAN: That area is within a half mile of the dump as the crow flies.

MR. KAUFMAN: And are there any alternate water systems in that area?

MR. WITSAMAN: Yes, there is.

MR. KAUFMAN: Okay. Are there areas where there aren't alternate water where

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contamination has been found within a mile of the dump, to your knowledge, and you may not know?

MR. WITSAMAN: Chris, could you help me on this? I would say in the area where there is alternate water, not all the people are hooked up to the alternate water for -- some of them for economic reasons, they can't afford it, they're too old, they're on pensions, there's not an economic way they can do it, and so those people are still threatened by the contamination.

EPA did a study on contamination in northwest Uniontown, and I don't know if we can have any faith in that study, they said there was no link, they didn't think it was coming from the dump.

MR. KAUFMAN: Is this within a mile of the dump?

MR. WITSAMAN: A half mile.

MR. KAUFMAN: Within a half mile of the dump.

MR. WITSAMAN: They didn't think it was coming from the dump, but they didn't know where it was coming from.

MR. KAUFMAN: Do you --

MR. WITSAMAN: And I want to say,

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too, that especially concerning what's going on right now, you have to consider the potential for release, not just whether there's a contamination plume moving off that site, there may be contamination plumes in our neighborhood around here.

We don't know it because EPA only tests, especially lately as Chris said, they tested for five years. They only test basically on the site and around the site on the monitoring wells that they have, and as I stated before, number one, they don't have enough monitoring wells, and I think almost all the experts would agree on that.

They haven't done core samples on that and just on the threat of the potential for release from that site in any direction because the water from that site, according to U.S. EPA and U.S. GS, flows in all directions, a very complex geological site on the top of that hill, it's a glacial hill, it's bedrock, shale, limestone, it's a whole mishap layer cake that got hit by a bowling ball, and so to monitor that site, according to what I've read, you would need a much more complex monitoring system. And to

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characterize that site you would need a much, much more complex set of criteria to characterize that site because natural attenuation, this insane remedy they have for the site is based on -- a lot of it's based on computer models and mathematical models, and if you don't have good data, and this is according to the U.S. EPA themselves, the models are only as good as the data that goes in them.

Since we think and a lot of experts feel that the data they have from that site, because of the inadequacy of the wells or the bore holes and so forth and so on, a computer model or any model they have right now is just junk, it's junk science as someone else said when they stood up here.

MR. KAUFMAN: Thank you very much, sir.

MS. BORELLO: The last time we sought an account of how many people were on well water versus not, I believe the County Sanitary Engineer said 30 percent of the people was not hooked up, were not hooked up to the city water, 30 percent was the last figure.

MR. KAUFMAN: Okay. Thank you,

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Chris.

See if I'm reading this right, Darlene Lansing; is that correct? Did I pronounce your name correctly?

MS. LANSING: Lansing.

MR. KAUFMAN: Lansing, I'm sorry.

MS. LANSING: My name's Darlene Lansing, L-A-N-S-I-N-G. I live at 2177 Prestwick Drive, Uniontown. For 12 years I lived at 11695 Basswood Avenue, which is in a one mile radius of the landfill.

I'm a registered nurse, for a living I do medical research. I've come to discuss health care issues on the landfill. In the '70s when I first moved to Uniontown --

UNIDENTIFIED SPEAKER: Can we ask you to use the mike, we can't hear you?

MS. LANSING: Can you hear me now? Okay. In the '70s when I moved to Basswood Avenue and first was aware of the dump I had compiled a list of cancers on Pine Street and other streets immediately around the dump. The people who lived in those homes at that time were in their 50s and 60s, and when I gave it to the health department and the EPA they thanked me for

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my efforts and told me that they were old and they had to die from something and cancer was the second highest cause of deaths so, therefore, they weren't concerned.

Over the years I've expressed concern over chemicals. I wasn't aware of radiation being an issue until the '90s, so my focus had always been on the chemicals. I don't remember exactly how many chemicals were found but phthalates and other chemicals are known -- and benzene are known carcinogens and the incidence of cancer that were antidotal were amazing to me. I've left the area and became aware of radiation in the '90s.

I developed myself a cancer in the late '90s and became again interested and went back and looked at antidotal cases and went back and asked people in the area. I found seven breast cancers within two blocks -- you could stand out of one lady's house and see all the others, one mile -- within a mile radius of the landfill directly west of the landfill. I found fibroid disease, thyroid cancer, spinal tumors, about 22 cases within a one mile radius of breast cancer alone, let's see, brain cancer and

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lymphoma. There was a child born without a brain. There is a high incidence of learning disabilities according to one of the instructors at Lake Schools. There were three or four children with leukemia within a ten year period.

The 1992 cancer incidence report put out by the Ohio Department of Health list a high amount, higher than the national average, of breast cancer, Cole cancer, brain cancer and lymphoma and leukemia in Stark County.

The health department has, I understand, now the capabilities of breaking this down by ZIP code. I have requested this six times and have not yet received that breakdown. By law Ohio has to keep a list of cancers, and the only thing so far compiled is a 1992, there has not been able to compile anything else.

I've asked ATSDR, EPA and the health department in the '70s to do a health study, and I realize it's a small area and significantly could not truly do a health study but they could have done -- requested people who had illnesses to call in so they could have found out if this town versus a town right down the street like Manchester had higher numbers of cancers in a

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similar population amount and they haven't done that either.

And I, again, requested a health study in the '90s, and I talked to a Dr. -- to Linda Kern who said, again, the area was too small. I said to her I would do it myself and she told me to go ahead, it wouldn't prove anything anyway, and truthfully scientifically it doesn't prove anything but you can get an idea of what the cancer rate is of this town versus a town ten miles away.

And then I guess that's all -- I have a formal statement I'll mail in, but that's basically all I have to say.

MR. KAUFMAN: Thank you very much, Mrs. Lansing.

Norma Bolt. Did I pronounce that correctly?

MS. BOLT: Norma Bolt, 3636 Timberlake, probably less than a half mile from the dump.

When I signed your paper most of the things that I was interested in, or concerned about is a better word, have been addressed by the other speakers and particularly questions I

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had about migration were addressed by Mr. Titmas, but to go along with what your last person said, I had lived here probably 11 years beginning in about 1969 perhaps, and from the time I was a child I had had a little skin irritation once or twice a year, for a day it would bother me. Once I moved to Uniontown it became dramatically worse and to the extent that after living here a couple of years I was advised to have a baseline biopsy.

About 16 years ago it was cancer and there was no -- it was the type of cancer that could be caused by chemical irritation. I don't know if you know what a vulvectomy is, but I had a vulvectomy and all the other problems that go with that. For every year since then I have had to have biopsies of surrounding areas. During that same period of time in those early years I had two daughters that began to have skin problems. When they left my home they weren't bothered anymore, if they came back for a visit they were.

About probably 13 years ago maybe we began to buy bottled water but this did not -- we didn't bathe in it, we cooked with it, we drank

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it but we didn't bathe in it, so we were still exposed to the well water and whatever was in the well water. As soon as we could financially handle it we got a complete in-house treatment system, and then we were one of the first homes after the hundred homes that were able to get the city water.

I filed for a variance to keep my well open so if you want to test you're welcome to test it. My home has been one of the homes that the EPA included in testing and there was tritium found in my well but that was tossed out. I don't know what was wrong with that one.

And at one time I had a complete fish kill. I had a lot of fish in a pond, they floated all belly up. Well, I put one in the freezer and gave that to the EPA and they did find chemicals in that but not sufficient amount or at least they didn't think it was a sufficient amount that could have come from the dump that would cause that.

But I've always been active with the CCLT because I have tried so hard to provide a healthy environment for the kids and to think that money would cause the problems that I might

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have incurred. In the same year that I had cancer surgery two neighbors on either side had cancer surgery, one of those has now died. It made me really angry because I knew that anybody that would do that knew what they were doing. So when you ask these other people if there's been cover-up, I definitely believe there has been. I can't -- I've been associated with the group for as long as I have and not felt that way.

MR. KAUFMAN: I have a couple of quick questions, Ms. Bolt. You said that your well was tested and came up positive for tritium and then the data was thrown out. Did anyone come back and retest the well and find no tritium?

MS. BOLT: Right.

MR. KAUFMAN: That's what happened?

MS. BOLT: (Nods head up and down.)

MR. KAUFMAN: They came and found tritium and then they came back and didn't find tritium?

MS. BOLT: Well, if they found it it wasn't as significant as it was the first time.

MR. KAUFMAN: And this is the groundwater well?

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MS. BOLT: This is the groundwater well.

MR. KAUFMAN: Did anyone explain to you that pollution can move in slugs in the groundwater so that you might have a slug coming in one day --

MS. BOLT: Right.

MR. KAUFMAN: -- and then six months later it might be less --

MS. BOLT: Right.

MR. KAUFMAN: -- and then six months later it would be more?

MS. BOLT: Right, I understood that. And part of the concern I had with the migration of chemicals was addressed by Mr. Titmas.

MR. KAUFMAN: Great.

MS. BOLT: So I understand those things.

MR. KAUFMAN: Good. Did they just throw out the first data because the second time they got a different reading?

MS. BOLT: I don't know.

MR. KAUFMAN: Okay. And who took the -- did the analysis?

MS. BOLT: It was the state.

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MR. KAUFMAN: The State of Ohio EPA?

MS. BOLT: (Nods head up and down.)

MR. KAUFMAN: Do you remember the individual's name?

MS. BOLT: Chris could help me on that, she's got a better memory than I do.

MS. BORELLO: I don't remember.

MR. KAUFMAN: That's okay. Thank you very much, Ms. Bolt, I appreciate it.

MS. BOLT: It's been a long time ago.

MR. KAUFMAN: The next speaker, John Thompson. It's not the former coach of Georgetown basketball team, is it? No, you're not tall enough.

MR. THOMPSON: No, that's not me. My name is John Thompson, I live on Christine Circle. I have to say hi to Terry, I haven't seen him in about 15 years. Christine Circle, Northwest.

I have to admit I owe you people, every one of you an apology. The reason I say that, I've only been out here a couple of years, I got a brand-new house and I didn't really think this was important because of where I lived.

I don't have any information to give

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you people. I just want to say that apparently where I live, after listening to all these other people, possibly my well and the well of about 17 other people, we might be in trouble.

I have a couple questions, if I could get them entered into the record that would make us feel a lot better.

MR. KAUFMAN: Absolutely.

MR. THOMPSON: One being, how did they determine where to stop the testing of the wells, what was the determining factor?

The other question would be if we pay a private contractor to come and test our wells and they're found to contain some of these things that I've never even heard of, what's our next recourse of action?

Our houses are probably a mile, maybe less than a mile, west of the landfill as the crow flies, and, again, I'm just kind of curious why our wells weren't tested?

I guess the only statement or comment that I have in closing, if any of you ever seen or watched the movie Air Force One, just remember what Harrison Ford said, You got to do it because it's the right thing. That's all I got to say.

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MR. KAUFMAN: Herb Kohler.
MR. KOHLER: That's Herb Kohler, K-O-H-L-E-R, 10995 Wright Road.
I started in CCLT when I had a three year old child. That three year old is going to get her license this year, so says a lot about priorities, I guess. Glad to know that she's still here.
I only have -- most of the good questions have been asked so I'll ask the ones that I don't think are covered as much as I'd like. The first one is, why after radiation was discovered in 1991 and never invalidated did we not go back and test the same bore holes or rebore new holes near the same holes? And why did we not run the same protocol for testing looking for the same radioisotopes that were found previously?
It appears that what happened was we went back and tested for different radioisotopes at different locations and then sort of played shell game with the information. I think the correct political term for that is spin today.
The second question I have is that why is it that with the multitude of labs that we

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have today, with the amount of automation that exists today does it take a minimum of eight months to get test results back? Why do we have to get results sometimes a year and a half, almost two years and why do those results miraculously seem to appear if they're positive before meetings and if they're negative do they not appear until after meetings?
The third question I would like to ask, why does EPA ignore its own guidelines for the handling of waste streams within this site? Why do they require in their own guidelines a more stringent characterization for natural attenuation than for an active remedial method and then turn around and at a site where we were inadequately characterized for an active remediation tell us that we are now perfectly fine with natural attenuation?
I'd like to know why the EPA radiation expert was as well cheated and the health physics major with three or four weeks of seminar training and why he was put in charge of guiding the Science Advisory Board through all of the data? I'd like to know why the data sent that the Science Advisory Board had to work with

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was incomplete?
Finally, going back to that same radiation expert, I'd like to know why he was permitted to work on this site when his father worked for one of the PRPs?
Also, I hate to say I told you so, and I guess our group's been saying that for awhile, we said in 1989 that this site was inadequately characterized. We said that the record of decision definitely should have been signed and we said sooner or later that was going to come back to haunt us. We were told that this was the best record of decision that we could get at the time and that not to worry, that during the development of the work plan we fix all those little holes, we go back and we patch it up and we make sure that the cleanup that we got here would be everything that we deserved. Now, depends on what you mean by the word deserved. I think it would be an understatement to say that the EPA has had their own agenda here.
The question has been asked and I suspect you'll ask me at the same time whether or not I feel that there is a conspiracy or a cover-up here. With the usual disclaimers, that

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is to say that I have no direct knowledge of anyone writing down a memo that says, Today we are going to work on the cover-up. I would say that the circumstantial evidence pattern is rather high based on what I have observed over the last 12, 13 years.
Now, finally, I'm very thankful that you're here. This has been a refreshing area of a lot of problems that have gone on here over the last 12, 15 years, and I thank you for being here.
MR. KAUFMAN: I still have a question for you. Since you've been with it a long time, do you feel the federal government, no matter what agency, given the antidotal information of health problems has done an adequate job in assessing the magnitude of health problems in this particular area where a major source of contamination has been identified?
MR. KOHLER: No, I don't but I'll qualify that by saying that since all of the data that exists today that they're allowed to consider is based on eight hour exposure limits for single chemicals and since the majority of the people that we have affected here are dealing

with chemicals that have synergistic effects, I think it is damn near impossible to be able to gather the full magnitude of what the effect on human health is.

Almost -- I think every time we've talked about it, Denise Gawlinski is back there, I think she can tell us what she's told us before, that is that eight hour exposures are based on industrial data that's gathered when people -- when they're able to separate people being exposed to one fixed chemical.

We have a number of instances where when we've taken data over the years, there may be three, four, five chemicals of the same chemical family that in each case each member of that family is carcinogenic. Now, if one of them is three points short of the standard for action and the other one is four points short of the standard of action and the other one is five points short on wherever scale, parts per million, parts per billion, is appropriate. We can't sum those according to the EPA because no data exists for multiple chemicals. So we're prepared to live with that even though we're just that short of being in an emergency action

situation for a number of the wells that are out there.

MR. KAUFMAN: Now, to your knowledge, and I know you're not an expert, do you know if the standards or has anyone told you the standards for emergency action take into account low body weight children drinking potentially contaminated water or do the numbers only reflect healthy adult males exposed for eight hours a day? If you don't know, that's fine.

MR. KOHLER: I believe that all of the data on exposure to chemicals comes from healthy adult males. I don't know that for a certainty, but since their industrial exposure data my guess is is that that would be the case.

MR. KAUFMAN: As a parent, this is a subjective question, do you feel comfortable that the health of your children, especially when they're small with low body weight, is being protected if industrial levels are used as the criteria for protection?

MR. KOHLER: Subjectively and any other way, no.

MR. KAUFMAN: Okay. Thank you very much, sir.

And finally Louise Fabinski from the ATSDR. Oh, we've got two more, all right, not finally. Louise Fabinski.

MS. FABINSKI: Hi. My name is Louise Fabinski, I work for the U.S. Public Health Service, it's the agency for toxic substances and disease registry. F-A-B-I-N-S-K-I.

Under the civil fund legislation Congress wanted to have a public health agency look at the data that was found in Superfund sites and try to make some kind of judgment as to what exposure to those chemicals would mean to the health of the public and also to make sure that any remedy that EPA, either U.S. EPA or state, environmentally would select would be protective of public health.

That's what we have tried to do at this site for the last 15 years. I've been coming here since 1984. I started with the agency in 1983, and I still see in the front row a lot of people that I met over the years and somebody in the second row, too, and it's always been a delight to come to this community.

We were instrumental in making sure

that there was an alternate water supply. I remember Milly Griffith very well, and there were two or three wells that had vinyl chloride. We also were instrumental in working with EPA, and just before the ROD was signed there was an increase in the methane levels that we felt could cause a problem in the border homes. And so we asked them until they were sure they controlled the methane could they move these people for public safety.

The determination to buy out those homes was not a determination that ATSDR made, that was one that U.S. EPA made. There was a technical information committee and so each one of these issues that you heard discussed, core sampling, radiation and water, cancer, health studies, the original remedial alternatives, the designs, et cetera, technical people from Atlanta including health physicists, hydrogeologists did look at the data in a team and did fly up here and produce written documents and dialogue with the other agencies and with the public who attended the PRC.

Now, the group for government oversight we have never met with before, I don't

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know who they are. We will attempt to establish some kind of connection with them. Also the group of friends, they've never contacted us and discussed any of these opinions or data with us so we will definitely make contact with them.

Also, EPA is proposing to change their alternative to this site and that's an important term, PRP holes. Our agency does not sit on negotiations with the PRP for one very good reason, we need to be objective. We don't have regulatory power but we certainly do have public media power, and if that alternative is not protective of public health, and I'm not a technical person so I can't discuss all the ramifications, but I will tell you that there are meetings and have been meetings going on with those agencies to make sure it's protective of public health. This has not been deserted yet, it is not final that this will be an implemented remedy.

I trust my agency very much, I know the people who work for it and I would find it very hard to believe they would be willing to endanger your health.

I'd like you to ask me the question

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you asked the man ahead of me.

MR. KAUFMAN: Well, I was going to. About the protection levels taking low body weight, young children ingesting water, are those -- are the protection levels based on that or based on healthy adult males?

MS. FABINSKI: Well, you work for EPA and you know what MCLs are and some of the other regulations there are and you know what risk assessment is and so does my agency, so does Ohio EPA, and when we look at these kind of sites, yes, you must protect to the best of your ability those in the population that are more sensitive, which would be ultimately and would also include children so you would take into consideration low body weight. That's always been done.

Now, are there research studies that we get from occupational health that help us get some idea of the toxicity of chemicals, yes, but, you know, levels are adjusted for children and adults -- and unhealthy adults.

MR. KAUFMAN: Now, what is your -- are you a Ph.D. or a doctor?

MS. FABINSKI: No, I said many --

MR. KAUFMAN: What's your

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background?

MS. FABINSKI: -- times I was not a technical expert. I have a Bachelor of Science Degree in English and biology and worked for this agency since 1983.

MR. KAUFMAN: So you don't agree with Bill Ruckelhaus, the former administrator of EPA, when he said that risk assessment is like a prisoner of war, if you torture it enough it will tell you what you want to know?

MS. FABINSKI: I am not a technical person, I will not let you draw me into that question or statement.

MR. KAUFMAN: Okay. Thank you very much.

The next -- the next speaker is Tom Shalala, is that correct? You're not related to the secretary, are you?

MR. SHALALA: Yes.

MR. KAUFMAN: You are. Well.

MR. SHALALA: My name is Tom Shalala, and I don't know any of you, we moved here about a year ago so I come here -- I don't even know what this group is so I don't come here with a lot of emotion or anything like that.

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I am a scientist, I'm a hydrogeologist, I've been one for 15 years, and we live in Uniontown about a mile from here, and I just have some general questions that I'd like to present and address with all these other ones, and I think some of them have been covered earlier.

And one is the issue of dissolved oxygen is kind of a buzz word in the environmental field. Everybody uses dissolved oxygen, it is a proof that degradation is taking place and I understand that, but there's so many factors that go into that and the -- I have not read all the information at all, but just the stuff that I have read, they're kind of using that saying, Well, there's some dissolved oxygen here, that means there's degradation taking place.

There's been, as far as I know, no studies taking place on any kind of microbial studies that have been done that the right bacteria's been there.

Second of all, you're dealing also with metals and apparently with radiation as well, which microbes are not going to deal with.

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Also, I worked for industry for many years and in the environmental business, and we sat across the table from many state agencies and the U.S. EPA and we would try to trick with the U.S. EPA and they would come back and say to us, Dilution is not the solution. We've tried it and it doesn't work, and now we're saying in this case dilution is the solution and it's not.

And then lastly is that a cap is fine for a landfill, but we already have groundwater contamination. The groundwater has been impacted so you're going to have a mounding effect up gradient of the landfill that's going to push the groundwater through the landfill down gradient of the landfill. You have I don't know how many active pumping wells for residential purposes that's going to literally pull that stuff down gradient and you're not going to have any barrier control, and that's the number one buzz word of EPA is that you must maintain control of your plume and there is no control of the plume here. You can put an 80 foot cap on but you still have groundwater contamination and you're not controlling the plume. That's all I have.

MR. KAUFMAN: I have -- I'll tell you

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I think you've raised some very important issues that have not been put on the record so I'd like to ask you a couple of quick questions as a hydrogeologist and based on your experience in doing industry work interfacing with EPA on other types of groundwater related issues.

Is what you've heard and observed here on this site consistent with how you've seen EPA handle other sites when you are representing industry? Is it similar, different or you don't know yet?

MR. SHALALA: I don't know yet. I haven't -- like I've said, I've just known about this for -- we just lived here a year, and I don't know your dealings with this group or anything. I do know that our historical dealings with the U.S. EPA as well as OEPA, Kentucky, Michigan and so forth, they are much more proactive in protecting the groundwater resources than what I've seen presented here.

MR. KAUFMAN: In other words, in other states --

MR. SHALALA: And in Ohio.

MR. KAUFMAN: -- and in Ohio you've seen more protection by the environmental

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agencies than you have here in Uniontown --

MR. SHALALA: Absolutely.

MR. KAUFMAN: -- based on your industry experience as a hydrogeologist?

MR. SHALALA: Absolutely. If you know that there are active water wells in the area the agencies will jump all over it. I mean, if you're in downtown Detroit and there's no water wells in the area, the downtown Cleveland area, you can get by with it. When you have known water wells in a usable aquifer they're jumping all over it.

MR. KAUFMAN: Second issue, you mentioned microbial studies. Based on your experience to come to a conclusion that there is natural attenuation degrading the contaminants in the landfill before it comes out into groundwater, do you recommend doing microbial studies to see if microbes are, in fact, working either aerobically or anaerobically before you can draw a conclusion like that?

MR. SHALALA: Yes, I would recommend that, that would be a logical --

MR. KAUFMAN: And if there are no microbial studies, would you as a hydrogeologist

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have difficulty concluding there is a natural aerobic or anaerobic occurrence reducing contamination?

MR. SHALALA: Yes, I would have a problem with that.

MR. KAUFMAN: Okay.

MS. FABINSKI: Could I ask a question?

MR. KAUFMAN: Yes, ma'am.

MS. FABINSKI: Could you define what type of microbial studies we're talking about?

MR. KAUFMAN: Any type of microbial studies.

MS. FABINSKI: Is there something you have in mind? Is there progression of a microbial study?

MR. KAUFMAN: Any microbial study that demonstrates there are microbes present that could, in fact, do aerobic or anaerobic activity to reduce contamination. Am I correct, sir, you're the hydrogeologist?

MR. SHALALA: That's correct.

MR. KAUFMAN: And you haven't seen any in this site?

MR. SHALALA: Not that I've seen.

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Again, my limited cursory view of this.
MR. KAUFMAN: That's all right. With regards to the issue of dissolved oxygen, can dissolved oxygen alone tell you whether there is aerobic or anaerobic activity diminishing contamination from moving in groundwater off-site?
MR. SHALALA: No, dissolved oxygen alone cannot do that.
MR. KAUFMAN: Okay. Thank you very much, sir.
And the final -- wait, is this the final? Nope, two more to go. Peter Spring. Groundwater and spring, that's good. Did I pronounce it correctly, sir?
MR. SPRING: Yes, you did. Spring, S-P-R-I-N-G, just like the season.
I'm a technical adviser for the printing industry, deal a lot with chemicals. I don't think I need this. Can everyone hear me?
MR. KAUFMAN: Yes, sir.
MR. SPRING: Great. I took two weeks off in a job and went to Washington, D.C. to spend some time with my nephew who works for the EPA. Before that I spoke to him about some

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things. He sent me back some documents from you folks. The minute he started looking into it a little bit deeper those things were shut down on him and he was told to mind his own business.
MR. KAUFMAN: Oops.
MR. SPRING: There are some records there that are closed dealing with our dump site and West Valley Test Facilities in New York City, New York state, west New York state dealing with tritium. The tritium is produced in a town at a company in northeastern Ohio. The waste has been trucked there because of their -- which they're doing very well with because I spoke to their safety engineer there and had a -- in fact, I drove to Buffalo and spent a couple days with her, and she was very shaky about anything I would say here.
These people -- my nephew says that he would be more than glad to give me more information if he can find another job first. That means that this man is afraid of what he's going to say, what he's going to give me.
You ask the question of these people that came up here, Do you think that there is a cover-up? I'm asking you, do you think there's a

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cover-up?
MR. KAUFMAN: Well, I think once you get the report from the ombudsman you can draw your own conclusions.
MR. SPRING: Well, I always have. I worked for the government as a youth during the Vietnam War, and I know what the government's capable of, I'm very aware of that.
I want to make this a little bit more personal, because a lot of you people have been talking about the companies, hi Chris, and about what they've done to us and what has gone on here.
I'm here representing my family, my wife's family. I've only lived in Uniontown for three years, I live at 13470 Virginia Avenue, Northwest in -- I have a beautiful home, I've worked very hard to move from Canal Fulton to a better area. My wife was born and raised right, right behind us, has the next house right next door. Some of you people probably know the McKitas. Don McKita is probably one of the finest people you could ever meet in your life.
I'd like to tell you that my father-in-law, he gave me a list of the diseases

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he has. He has prostate cancer, he has undiagnosed neurological disease that the Mayo Clinic has said that, Well, do you know what, you're one of two, we couldn't tell you what it is. Okay. He has prostate cancer, he has cellulitis, he has -- the list goes on. I can't -- it's just terrible.
My mother-in-law has breast cancer. My wife, who I've been married to now for ten years, the year before we were married found out she had breast cancer, she was 25. We went to the doctors, the doctors took the tumor out of her breast, said she had had that tumor for 11 years, 11 years. Where did that tumor come from? Young people getting cancer.
I understand cancer is the disease of the aging, it's not the disease of the children. Mr. Beltz' son passed away. I don't know if you're aware of that, if you know the Beltz case. So these things have happened to my family, there's no -- my wife's family. There's no cancer in the background, the parents are all western Pennsylvania people, lived to be 80, 90. In fact, her grandmother died at 96, strong people, tough people.

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My wife now is fighting cancer again. It has spread to the bones, it has spread to the liver, they found a spot in her head the other day, it's not good.

So I read an article in the newspaper and it talked about the dump and some of the chemicals they had found, and somebody sent me some information. I got the information from Chris, I researched it, and I started looking at what they were finding in the water and I said, What are these here? Arsenic, huh. Well, what does arsenic do? I called a couple places to find out what arsenic does to the human body. It works on the nervous system and it causes cancer. It really works on the nervous system.

Anything over 60 parts per million, are you aware of what that does to people? It's very -- I said to my father-in-law, Do you know what, you can't walk, you can't -- let's -- I called his doctor, Will you run a test for him on arsenic poisoning? Came back 60 parts per million.

My father-in-law lives over on Judy, northwest of the dump, 1.2 miles, I know it because I walked from the dump over to his house

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with a little rod, cut through yards and everything, down in the valley. Another gentleman right there, he lives right next door to us, our neighbor just passed away two months ago from cancer. Lady down the end of the road passed away from cancer, the man across the street has numerous diseases and it's everywhere. The house I bought, I bought it from a woman's family who both of them died from cancer.

So I stopped the water from -- my father-in-law from drinking the water, even through his osmosis system, that's gone. He will not -- I called some information up, I find out that Mr. Beltz had dealt with a woman named Elaine Panitz and a Dr. Simon. Dr. Panitz deals with 18 years worth of finding what chemicals do to people. She said she would be more than glad to let us know what it is, we sent her some blood tests. She said she would know more when she did an autopsy when he passes away, she'll know exactly.

Dr. Simon told me to move. Dr. Simon told me that through natural attenuation, that means the chemicals are moving eight feet a day

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away from that dump. This is a man who found radiation at that dump with a hand-held gauger counter.

So I go to my family, I tell them all these things. Well, listen, you know what cancer does to you financially is phenomenal. We're in -- we don't want to move. We have no intention of moving, we've worked our tails off to get what we have, and we live in a beautiful neighborhood. Uniontown's a wonderful place to live. My family all came from Raber Road, so I know this area.

So that's where we're at with my family, and that's the reason I'm here right now talking to you about these things hoping that you have, as I hear on the TV, the cahoonies and you're not worried about losing your job because if you come back with something your superiors don't want to hear, who's to say what they're going to do.

You asked that question about a cover-up, do I believe the government, the EPA, the most wealthiest organization in the United States Government, has covered up something? This is about greed. We're victims, everybody in

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Uniontown is a victim of greed, greed from the rubber companies, from the -- from everybody who dumped out there.

Sadly to say I remember going out there with my father and dumping garbage, so -- but I wasn't dumping chemicals.

Let's see, what other things did I want to talk about? I believe that my father-in-law, my wife and her mother picked up some of these chemicals from the park. My father has been on the park board since its inception. The park is where, across the street from the dump? I mean, if you got a good arm you can throw a rock. That dump was going on at that time directly west, it's only logical.

If you go down -- no one's tested the wells there. I've never heard of anyone saying the well has been tested. I've been asking people, Sue Ruley, she didn't know. Any park board members here? We need water testing within a five mile radius.

If Dr. Simon is correct, since they put that chemical there, a lake -- and do you know what, I tried to figure that out and I had to go to a mathematician, he said, Peter, that

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would be ten square acres ten feet deep. You're trying -- you can't convince me that it hasn't migrated further than what anyone can possibly imagine. There's big problems here.

I can't imagine why we can spend 50 million dollars in Washington, D.C. to find out what's going on in Bill Clinton's life and we can't take the time or the money to spend to clean up this dump. I also can't believe that you folks at the EPA, and I'll be at this meeting, have not taken the time to clean this dump up when you scream and yell at these poor little guys who own gas stations to pull those tanks out of the ground at the cost of 20 to $50,000 but yet you won't go and clean up the dump, it's simple to me.

It's just -- do you know what, I've talked to Chris on the phone a number of times and she's gotten very vocal with me. I'm going, Oh, great, I'm going to get to see Chris in action, and she was so professional, it's me here just getting livid.

I talked to attorneys because of what I believed has happened to my family and they all said to me, Peter, what do you want? And I said,

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Do you know what, I don't want to sue anybody, I want health issues brought up, I want money put aside for the people's children who get sick.

They are building homes south of the dump in mass quantities, and there are people living in there with their children who -- do you know what, here's what I did. I went down there to talk to them. I said, Hey, I'm going to buy a brand-new house. I drove down there in my Jaguar, looked real good, standing there, I want to buy a new house. Hey, tell me, what about that dump? Oh, that dump's nothing, it's just garbage. They dump garbage in there, don't worry about that, it's no big deal at all.

Greed. Greed motivates people. It is a sad, sad situation and again -- gee, I got all these things here. Spoke to that person again at the West Valley Test Center and she put me in touch with a gentleman who is a nuclear physicist, and he said, Peter, when they take tritium, radium, plutonium, whatever, they put it in a drum, they bury it in the ground, they put a whole bunch of chemicals around it, they put dirt around it, and when that drum rots away and those chemicals mix with other chemicals it's an

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unknown science, they cannot tell you what those chemicals can do. We could really see something grow out of that.

How come we can't go look at that dump site when there's snow on it to see where the hot spots are where the snow has melted? Did you know that happened? The only reason I know that happened is because of the water tower back there, and being Italian I climbed to the top of the water tower to see what was on the other side, and there was a lot of snow melted on the ground in spots. Now, why is that? Why would that snow melt when everybody else's yard is covered with snow?

I can say a lot more here, but what I'm going to say, I'm a pit bull, I'm latched on to this, I'm on the Internet, I tell my neighbors, they tell their neighbors, they tell their neighbors. This is not going to stop. This is going to get only bigger and bigger. You can be a hero or you can go back to Montana or wherever it is and say I did my job and pick up your paycheck.

You know, in my shop where I run we have a little thing where we'll run 20,000 sheets

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of material, and that 20,000 sheets of material may get a wrong print on it. The people who ran that print are responsible for that. I have people that will not run bad jobs but if they do, they take the money out of their own pay checks and pay for that job to be fixed, to pay for the materials. We don't let that happen all the time but that does happen when someone makes a mistake like that. That's the kind of scruples that these people have. That's the kind of morals that these people have. Look at them sitting here, all their hopes and dreams are with you, all their families.

I don't see one person talk about their families, but you know somebody here has health problems and has family that has health problems and they're not going to bring it up. Well, I am. Every time I hear about this, every time I see something, do you know what, I'm going to get your number before I leave here, I'm going to get your e-mail address, and I'm going to keep looking and I'm going to keep trying to convince my nephew to give me that information. I'll give him a job.

But -- I know there's health board

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people here. I sent my well water somewhere. I went to Washington, D.C. and mailed my water, shipped my water from Washington, D.C. to Florida to have it tested because every water people I called to have tested they said, Where you from? I said, Uniontown, Ohio. They go, Oh, we know what we'll find there. They already knew. They already knew and they already decided what I was going to send them.

This is not good. We're not happy here, we're not going to be happy until you folks do something, and we don't want to be lied to. I don't know anyone here who wants to be lied to, and do you know what, they won't tell you but maybe I will, we don't trust the government. I don't trust them. I worked for them, I went to war for them, I know what they can do, I don't trust them and this week proves it pretty much, all that stuff going on in Washington.

And do you know what, I think that I'm pretty much -- said too much. Well, not said too much but I'm done.

MR. KAUFMAN: Just one question, Peter.

MR. SPRING: Yeah, there is.

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MR. KAUFMAN: Have you considered assertiveness training to help you with your shyness problem?

MR. SPRING: Well, I'm not a shy person, not one bit, and I always voice my opinion and -- hi, Chris, good to meet you.

MR. KAUFMAN: Thank you very much. Larry Prince.

MR. PRINCE: Hi, I'm Larry Prince, I live at 247 Rutledge Drive. I used to live at 12559 Amber Circle. I boarder on the dump. I've since moved.

I want to correct a couple of things that people weren't aware of. First one that bothered me was when they said the U.S. EPA moved our houses out and took our houses out of the toxic waste landfill, yeah, the U.S. EPA did it but they didn't do it until Metzenbaum held up the entire budget for the entire country until they gave us the money, that's the only way it happened, okay.

And the second thing is about the barrels, the liquids out there. I lived right next to the dump, I moved out there in '69, and this has not been going on for 15 years, it's

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been going on for 30 years because I've been there for 30 years.

I walked out to the complex and talked to people out there, if you want firsthand information, I saw the football field size pools of lagoons of chemicals dumped out there, dump trucks coming in, tanker trucks coming in dumping fluids in there to soak in the ground on purpose. Sometimes they brought in barrels and they dumped them in the lagoons and they took the barrels back out and used them over again.

And I was in there watching and talking to the workers, the guys that were dumping it because it wasn't secured, and they -- some of the barrels that were taken out, they were stacked up there, and I asked them, Why are those barrels there? They said, Well, because we won't touch those barrels.

And so there's barrels in there that have nasty chemicals in them, the people coming in knew were nasty, and that goes back to the core samples, back -- the U.S. EPA told us originally that you don't have to worry about these chemicals and these barrels because the life of a barrel in the ground is seven years and

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it rusts away.

Well, when they finally got around to putting in the pump -- the methane gas recovery system they had to dig down in, and they found barrels that had been there for 15 years that were in perfect shape. So you can be sure if you dig into there you will find barrels that have whatever they have in them still haven't leaked and haven't leaked yet.

So you talk about a plume going out, it is a plume from the chemicals they weren't afraid of, which was the benzenes they dumped and the vinyl chloride from where I used to work at Aerospace, all the stuff they weren't afraid to handle but they should have been. But the stuff they knew they were afraid of, it stayed in the barrels, it's still in the barrels, and it's not spread out all over the dump so you can find it. There's one little spot where they stack the barrels up and they bury them.

And that brings into, into -- it brings me into the other problem of why, everybody wonders why is there a cover-up, how did this cover-up happen? It's like the cop on all the cop shows where they go out there and get

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them to fix one ticket and then they got them. It's the same thing here.

When this thing started I started to fight it because I looked out my back yard and I saw garbage in the dump. Well, they weren't allowed to dump garbage. The permit for that place allowed brick, rubble, wood and latex liquids and I see garbage back there. So I go and I talk to the zoning inspector, and the zoning inspector, we're talking just a little guy now, a guy by the name of Harold Parr, he's dead, God rest his sole, would deny there was ever any garbage in that dump, yet he would go up there every day, drink a cup of coffee and watch the garbage trucks go by, okay.

And then when we were down there trying to fight Hyman Budoff, which was the owner of Hybud which ran that place, we were trying to stop the garbage from coming in and we complained about this great odor of sulfur dioxide or rotten eggs smell coming in, and he's sitting there at this meeting in the township hall and he said, Well, that only happened once, that happened once when one of our bulldozers ran over one of our drums of chemicals, one of the chemical drums. I

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leapt up and said, Chemical drums, you're not allowed to dump chemicals there, and I at that point tried to raise a holy ruckus but nobody cared.

Our Zoning Board of Appeals was made up of a bunch of farmers who thought it was good to live next door to a portable cement plant because they got free lime on their land, so nobody did anything. I tried to get them to stop dumping liquids.

I got the runaround from the Stark County Board of Health, okay, because when I tried to go there to present the problems, these guys are dumping chemicals with all these water wells around, they would purposely move the Stark County Board of Health meeting so we would show up for a meeting and they weren't there. Finally after three meetings somebody called us and said the next meeting is unannounced and it's here. We showed up, they gave an order to stop dumping chemicals. Unfortunately it didn't stop for three more years, at least they gave an order. There's the cover-up. The cover-up started there. The health department was covering up.

I talked to a guy who was in charge

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of landfills for Stark County, he was not concerned about what was going into our dump. He wanted to keep Stark out -- the IEL open because he had no place to put garbage in Stark County, that's all he cared about. He told me, and I believe he's in the audience today, he told me that all's he cared about was where the garbage was going to go.

So they came back and here was this man that had been violating all sorts of rules and they gave him an additional permit to dump garbage, yet when we called the Ohio E -- the Stark County Health Department and asked if there was problems with the water supply, if there was any chemicals going into the dump, they knew that, there was internal memos, they knew it was going in there, but if you called them they denied it.

So once they're in there we have -- the guy who was on the Ohio EPA went to work for the tire and rubber companies, and you wonder what kind of advice and help is he giving us if he goes and works for the rubber company the next week. We -- you -- once they -- once we start accusing them of covering up, of lying to us,

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it's like a wolverine, although I hate to mention the guys being a Buckeye fan, they back up in a corner and they're defending themselves.

And I think it's just one lie after another builds up onto another lie that it became an antagonistic thing, Chris Borello's group, myself, more Chris than me because she's a much smarter lady than I am, but it become an antagonistic atmosphere where it was more like, I'll be damned if I'll do a thing for you, you know, and it was just like -- we don't care about -- it's a -- it's a pissing match between different people, excuse my French, but that's what it turned into, and that's how a cover-up came around.

You talk about other sites like that, I think this evolved because it started at such a low level, it went through every stinking organization that we dealt with, we got stonewalled, you know, from the Stark County Health Department to the Ohio EPA to the U.S. EPA. We kept catching them in lies and they'd back up to cover themselves up. So that's how it happened and that's why no one here trusts anybody, because we've never been dealt with

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straight.
And if you ask me if there's a cover-up, I have no doubt in my mind there's a cover-up at all levels of the government, and it is about money as the last person said, it is about money because at the first place it was money for a place -- because the tire and rubber companies, they wanted a place close to their dumps because they figured the cost per mile of dumping that trash and we were the closest place so they brought it here, and that's all I got to say.
MR. KAUFMAN: Thank you, sir. Joe Mosyjowski.
MR. MOSYJOWSKI: Used to be Smith, I had it changed. My name's Joe Mosyjowski, 2615 Swartz Road. I'll try to be very brief, I know it's been a long evening. I'll just try to use a little simple logic here.
The EPA is a regulatory agency of the federal government as everyone's aware. It's funded by the tax paying citizens -- partially funded at least by the tax paying citizens many of which are in this room. Unfortunately to date that has been its only real connection with the

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concerns of these same citizens.
Now, we've heard a lot of talk over the years about erosions of our freedoms bit by bit. The time has come after all these years to take back our government and our freedoms person by person. The time has come to fully disclose and identify all the pollutants at IEL. It's time to quantify them and then it's time to remove them. It's time, in effect, to protect these citizens of Uniontown, they deserve it.
So, Mr. Martin, and, Mr. Kaufman, we're asking you to please represent these good people of Uniontown, please go to bat for them and please help them get to the bottom of this mess. Thank you very much.
MR. KAUFMAN: Thanks. Finally, Mark Nixon.
MR. NIXON: My name is Mark Nixon. I live at 10524 Newbury Avenue, Northwest. I have only lived in the Uniontown area less than three years.
When we were looking at a brand-new home we were concerned about things we had heard about IEL, and so we did some research, got some EPA reports off the Internet, information like

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that, which told us at the time that all of the concern about pollution from the IEL landfill was to the north and northwest of the landfill. The house we purchased at the time was an existing home, been there about 20 years south of the landfill, we felt that was a safe place.
Since that time we have read reports and got information that tells us that actually the groundwater flows in all directions from that point. The report we got that said everything was going north and northwest was an EPA report.
Do you ask do I think there's a cover-up? How can there not be.
MR. KAUFMAN: Before Bob Martin gives some -- a closing perspective on the next steps, again, Denise Gawlinski from our Region 5 office was here all night to listen to your concerns also in the audience, and I know she wanted to make a comment about the hearing coming up in March, I believe, Denise?
MS. GAWLINSKI: Yes. Thank you. I know you mentioned it in the beginning, but I wanted to take a minute to reintroduce myself. My name is Denise Gawlinski, I'm U.S. based community involvement at neighboring sites, and

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as Mr. Kaufman here I was listening to your concerns that you shared with our national ombudsman, and I will bring those back to my technical team back in Chicago.
And I would also like to mention that Patrick Galloway from Ohio EPA is here as well, and he's serving in a similar capacity.
I just wanted to mention again that U.S. EPA is holding its public meeting on the proposed plan on Tuesday, March 2nd. And this was just confirmed on Friday, we just mentioned this on Friday, so I quickly printed up a flyer, which is at the front of the room. But we will be doing a separate mailing to everyone on our mailing list so you will be notified directly of the meeting, and of course we'll be placing ads in both the Canton Repository and Beacon Journal announcing it as well.
If you all received our fax a few weeks ago, which spelled out the new proposal, that means you're on our mailing list and you'll get additional information. If there's someone here that didn't receive it by mail, please see me after and I'll be sure you are put on our mailing list. Thanks.

MR. KAUFMAN: Okay. I would just like to thank everybody who came forward. We have a Court Reporter, obviously I'm going to have a number of copies of this made. And I found this to be, and I'm going to enjoy reading it, one of the more detailed and comprehensive hearings where substantive information has been put on the record, and I think it will go a long way in helping Bob's job in looking at everything that has been done and will be done.

And so without further ado, I'd like to reintroduce, since he introduced me, Bob Martin, EPA's national ombudsman for some closing remarks.

MR. MARTIN: I have no prepared statement, okay. I wanted to come and see and I have. I thought that was very important before I make any final judgments about the kind of preliminary recommendations I will be making to our management officials in the Chicago Region 5 office and in Washington, D.C. as well and EPA.

Thank you for sharing your lives with me and for speaking from your hearts about your experiences here in Uniontown living next to this toxic waste site. I was very moved by what all

of you had to say. It means a great deal to me to have been here tonight with you to have shared this with you.

I don't live in Montana, I live just outside of Washington, D.C. I don't know, I haven't read yet the newspaper accounts which have described me or what I've done or who I am. I will do my job, okay, and that job is to help protect human health and the environment, not only here but in every community in which we have a responsibility to do that throughout the United States. I believe that will be done by EPA, by ATSDR and by the State of Ohio.

My preliminary recommendations will be made very soon, okay. As I said, it was important for me to get here first, and thank you for having me. Good night.

- - -

(Hearing concluded at 10:15 o'clock p.m.)

- - -

CERTIFICATE

STATE OF OHIO,)) SS:
SUMMIT COUNTY,)

I, Cynthia Holderbaum, and RPR and Notary Public within and for the State of Ohio, duly commissioned and qualified, do hereby certify that the proceedings were by me reduced to Stenotypy, afterwards transcribed upon a computer; and that the foregoing is a true and correct transcription of the proceedings so given as aforesaid.

I do further certify that these proceedings were taken at the time and place in the foregoing caption specified, and were completed without adjournment.

I do further certify that I am not a relative, counsel or attorney of any party, or otherwise interested in the event of this action.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my seal of office at Akron, Ohio, on this 2nd day of February, 1999.

Cynthia Holderbaum

Cynthia Holderbaum, RPR and Notary Public in and for the State of Ohio.

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ORIGINAL

INDUSTRIAL EXCESS LANDFILL SUPERFUND SITE

PUBLIC MEETING

MARCH 2, 1999

7:00 p.m.

- - -

BE IT REMEMBERED that upon the hearing of the above-entitled matter held at Uniontown Community Center, 3696 Apollo Street, Uniontown, Ohio, and commencing on Tuesday the 2nd day of March, 1999, at 7:00 o'clock p.m., the following proceedings were had.

COMPUTERIZED TRANSCRIPTION BY

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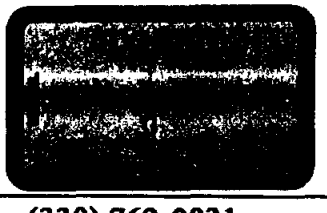
Larry Antonelli, Project Manager
Ohio EPA

Louise Fabinski
Senior Regional Representative
ATSDR

Tim Thurlow, Regional Counsel
U.S. EPA

- - -



MR. DOZIER: Good evening, ladies and gentlemen, and welcome. My name is Dan Dozier, and I am an environmental mediator and facilitator. I do not work with EPA, I am here to facilitate this meeting tonight, which is a public hearing -- can everybody hear me? In the back, can you hear me? Good. -- which is a public meeting to discuss the Industrial Excess Landfill and an amendment to the ROD the EPA is proposing.

I'd like to talk to you a little bit about how I propose to conduct the meeting tonight as a facilitator, talk to you about an agenda, and then I'm going to turn it over to Denise Gawlinski who is going to introduce the EPA people and what they're going to talk about.

First, I would ask that you help me with this meeting tonight, that we try to keep any kinds of interruptions to a minimum and that we try to respect the Court Reporter and everybody else in the room, and so if people speak, if they would give us and her your name, spell it if it's unusual, or even if it's not, to help her and your address when you speak.

The bulk of this evening will be

spent hearing from you, answering questions or listening to comments that you might have regarding this landfill and the site and EPA's proposed remedy.

The first period of time, and I told people that I would commit to them to keep it under an hour and hopefully closer to 45 minutes, I'm looking at the EPA people to remind them, will be presentation by various people from EPA about the site.

We think it's important to do this because there may be people here -- I know many of you certainly know a heck of a lot more about this landfill than certainly I do, but there may be people here for whom this information would be very useful. And so we want to have a quick brief overview of this, and I guarantee you that by 8:00, even if they're not finished, and probably a little before 8:00 we will have then time for you to ask questions or to submit comments.

The way I would like to conduct the comment period is this: As you may know, there is a sign-up sheet in the back of the room. Can you hold the sign-up sheet up? It's for

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speakers. Some people have already signed up, and those sheets are going to be back there for you to sign up during the presentation, but especially at the end of the government presentations, at around eight or a little bit before, we'll take a five minute break. I would really like to keep it to five minutes for anybody who wishes to sign up to speak to do so, also to give you a chance to walk around and go to the bathroom, but we'd like to have that a relatively brief five minute break.

At the end of that break I'm going to get those lists of names of people who wish to speak, and I'm going to call on you. You're going to have an opportunity, we'll give you a microphone, there will be one out there, there's one up here to speak.

There's not going to be a hard and fast time limit. This is not going to be auctioning three minute blocks of time off to everybody. And so -- but I do want to run the meeting so that everybody that signed up to speak has an opportunity to do that. And so I can't tell you how long that's going to be, some may want to speak longer than others and I will

Page 6

attempt to accommodate that but accommodate that consistent with giving everybody the opportunity to speak.

I'd like to ask, does that make sense? Are people comfortable with that? Does anybody think that's a problem?

Okay. Hearing none I think we'll go forward on that basis, and to that effect I'm going to ask Denise Gawlinski, who is EPA's public affairs coordinator, to come up and present the agenda and talk a little bit about the site and introduce some other people. Thank you.

MS. GAWLINSKI: Thanks, Dan. As Dan said, my name is Denise Gawlinski, I'm the community involvement coordinator for the IEL site, and I want to do three quick things.

First is to introduce the other people from my agency and two other agencies that are present here tonight. And the second is to just briefly go over tonight's agenda in a little more detail. And third, to tell you a little bit more about the public involvement process.

We have Ross del Rosario, U.S. EPA's remedial project manager. Luanne Vanderpool, who

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is U.S. EPA's technical groundwater expert. Luanne has a Ph.D. in geology from Stamford. And also Tim Thurlow, who is U.S. EPA's regional counsel, our attorney for this site. Also Ken Tindall, who is Superfund branch chief for Region 5.

From Ohio EPA we have Larry Antonelli. He is the project manager, Ross' counterpart on the state level. And in the back of the room, many of you saw Patrick Gallaway as he walked in, he's my counterpart from Ohio EPA.

Also from the Agency for Toxic Substances & Disease Registry or ATSDR Louise Fabinski, who is the senior regional representative based in Chicago, and Cate McKinney, who is my counterpart from that agency.

Also I'd like to point out that we have three people from Tetra Tech, which is U.S. EPA's contractor, and they've done a lot of work on this site for us, and I just wanted to point them out, John Grabs, Bhupen Gandhi and Harry Ellis.

So as you know, we're here to talk about the Industrial Excess Landfill site and

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specifically to describe to you in more detail the proposed changes to the cleanup plan that we are making.

In a minute I'll turn it over to Ross who will go through in more detail the proposed changes and also give you a little bit of background for those people who may be new to the Uniontown area and talk about the last round of sample results as well.

After that Larry Antonelli from Ohio EPA will give a statement from his agency's perspective, and Louise Fabinski will do the same from her agency. And after that Tim Thurlow will make some closing remarks before we take a quick break and then come back and listen to your concerns and answer as many of your questions as we can.

The comment period for this, this time around closes April 11th, so that's a little over a month from now. It started back on January 11th. So the total length of the comment period is 90 days, which is three times the length of a normal comment period under Superfund.

Once April 11th comes and goes, we

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will take all of the comments that we hear tonight orally and those that we receive in writing up until April 11th and consider them and evaluate them and answer them in writing.

We'll publish that in a document called a responsiveness summary, which we will make available to everyone when we sign the final record of decision, the final document which outlines the cleanup plan for the site.

At that time we will also place ads in both the Canton Repository and the Akron Beacon Journal and issue a news release to the media to help spread the word once a decision -- that a decision has been made.

We also are committed to keeping you, the general public, as informed as possible and involved -- and as involved as possible throughout this whole process. And to that end we plan to come back into the community in the next couple of months or before the start of any cleanup and talk to as many of you as possible to hear your suggestions and ideas for involving you.

That could mean holding regular informal meetings. We also would be willing to

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come to township meetings, maybe to just be on the agenda for one of the township meetings, coming to the Lion's Club meeting and speaking to that group. Just really any, any suggestions that you have I would appreciate.

And also we do plan in the very near future to organize a meeting of the Technical Information Committee or TIC, and this is a group that was formed back in I believe 1989 to help give input on the design of the remedy that was in place at that time. So we do plan to reconvene that group and work with them as well.

And I guess at this point I'll turn it over to Ross for the majority of the presentation. Ross.

MR. del ROSARIO: Thank you, Denise. Could everybody hear me without the microphone? Is that okay? Is that a yes?

MR. DOZIER: I think you better use the mike.

MR. del ROSARIO: Good evening, ladies and gentlemen. As Denise said, my name is Ross del Rosario, I'm the U.S. EPA regional project manager responsible for overseeing the remedy of the Industrial Excess Landfill site,

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IEL for short. IEL is located on Cleveland Avenue, a little bit north of this site on the eastern side.

Let me start things by -- let me start things by -- let me start this presentation by saying that I'd like to basically set up my, my talk to describe what those changes that the agency is proposing.

Is this microphone working? Can you hear me?

AUDIENCE: No.

MS. GAWLINSKI: Put it on.

MR. del ROSARIO: Can you hear me now?

AUDIENCE: Yes.

MR. del ROSARIO: I'm sorry, I thought my voice was loud enough.

Start things off, I would like to describe the changes that the agency is proposing for the changes on the original record of decision that was signed in July of 1989. I also want to go over the reasons why the agency is making these changes and also discuss the measures that the agency will be taking to ensure that the remedy is protective of human health and

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environment in the future as this -- as it is implemented.

To start things off I'd like to just briefly describe what the original remedy is and what the proposal is, just to go over it quickly. The original remedy in 1989 basically required a pump-and-treat system, basically you're removing -- pumping water out of the landfill and treating it and putting it back in again.

We're also requiring a cap or a cover of a certain design to be placed over the landfill. There's going to be some enlargement, there's going to be some sort of institutional control such as deem restrictions. We're going to put a fence around the area, and we are going to monitor this site on a regular basis.

Now, what we're proposing is basically a change, that is, on the pump-and-treat system based on the site conditions that we know today. We are planning to eliminate the pump-and-treat system essentially, and also we're going to be replacing the prescribed cap with a more simplified design based on experience that we gained in the past.

Why are we doing this? Well, site conditions have changed, and I'll go over everything and show you why. Just like the original remedy, the proposal is protective of human health and environment, and the proposal that we had here for IEL is also consistent with existing -- with current agency decisions on other Superfund sites.

Now, for the benefit of those who are not too familiar with the landfill itself, let me just give you a few brief facts. This is a privately owned landfill. It's about 30 acres. It was licensed to operate as a landfill in 1966, continued to operate till 1980. It accepted a whole range of wastes, you got municipal wastes, commercial wastes, industrial wastes. You got about 780,000 tons of wastes, and basically that's the same number that you folks have over there.

Approximately we think -- we believe that there's about a million gallons of liquid wastes that were also disposed of at the site. The predominant types of industrial wastes that we know are disposed at the site are fly ash from the rubber operations, from the rubber industries

and the latex type wastes.

The landfill closed in 1980, and basically the landfill owners covered the site with about one or two feet of soil.

The agency conducted a remedial investigation in 1985. What we found was a plume or a body of contaminated groundwater and it was coming out of the landfill in the direction of groundwater flow. Denise will probably show that later.

The major concerns that we had that we found was basically you had landfill gases that were primarily methane in content migrating off-site in the westerly direction. You also had the situation where you had unacceptable vinyl chloride levels in the residential wells adjacent to the homes.

Some of you may remember there was about a dozen homes and a couple of businesses that were living close to that landfill, so those were the most -- those residents were in immediate danger, and this is what I'm showing -- this is what I'm describing.

You have -- I wish I had my pointer, but I guess I can use this new high-tech thing

here. Well, it probably doesn't work. But you have in this body of groundwater contamination, this red, which basically showed the extent of metals contamination that we found in 1986, 1987 when we were conducting the remedial investigation.

Now, this blue outline over here shows the extent of the contamination that we believe existed during that time period for VOCs or organics such as benzene, ethyl benzene, toluene, chloroethane, those types of organic compounds. This, for your information, is -- was the old landfill boundary, this area.

Okay. Denise, would you go to the next overhead, please. The EPA recognized there was some immediate dangers on the homes -- well, there were some immediate problems that were posed by the landfill conditions on the homes that were living nearby.

What we did in -- somewhere -- in 1985, '86, '87 was to install some air strippers in about six homes. We installed some methane alarms, make sure that, you know, we would -- those alarms would turn on if there was any dangers about landfill gases coming in the

basement of the homes.

We've also constructed a landfill gas system basically to capture any landfill gases that could possibly migrate out of the landfill, and I think this was -- this third little item is an internal decision on the part of the agency in 1987 during -- in the middle of a remedial investigation the agency decided to install an alternate water supply system, which is basically located directly west of the landfill, west of Cleveland Avenue.

As a result of the findings of the remedial investigation in July of 1989, the agency signed a record of decision which basically outlined what the remedy was and which I described earlier.

We received extensive amount of comments in 19 -- during that time period, and what we basically decided, in order to address those comments, was to conduct additional studies and basically -- just in summary, those studies included landfill gas studies, off-site violation gas. We installed 30 new wells. We basically doubled the amount of wells that were originally on the landfill.

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We conducted pure economic groundwater monitoring from 1990 to '93. I think there were seven, seven or eight groundwater monitoring service which included radiation work.

We also conducted other hydrogeological studies. We used some rather modern equipment such as electromagnetic surveys, groundwater treatment to detect any drums or other metallic objects down there.

We also looked at the ponds in the areas around here, we looked at the sediments in Metzger's Ditch, we looked at the soils. So there was an extensive amount of study that was conducted by the agency after the record of decision was made.

Now, in 1997 the responsible parties with approval and oversight from the agency decided to do another round of sampling. What we found after reviewing the data was that we couldn't find any organics outside of the landfill boundary.

Basically we did find that there was some benzene in the middle -- on the northern half the landfill, somewhere around here, which

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is the location of an evaporation pond that the landfill owners constructed when the landfill was in operation. So we had hits of organics in this particular area over here.

Now, as far as metals, we did see some metals in concentrations above the federal drinking water standards outside of the landfill boundaries, but based on the review of our groundwater experts we couldn't find any evidence of a plume. So we came to these conclusions in -- sometime around 1998.

We found while we don't have evidence of a metal plume, residential wells, all the tests that we did basically is showing that drinking water wells were below drinking water standards.

We saw evidence that not water quality is improving, and we were probably going to be conducting some more water monitoring for as long as -- for future remedy. As a result of some of these conclusions we said, well, we don't need a pump-and-treat system.

Now, the order change that we made concerned the cap. Now, the cap that we suggested in 1989 was a cap that involved clay

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soil. We believe that with experience the agency has gained in the ten years in employing different types of caps we have come up with a more simplified design for a cap which, based on the studies that we've made and the experience that we have gained over the past ten years, we think would be the same performance levels as the original closed cap at a significance savings, it's going to be less costly.

And the other benefit about this cap is that you are going to be reducing the amount of truckloads of soil being delivered to the landfill. Our original estimate says we were going to be delivering about 27,000 truckloads of soil where our new cap is going to be -- probably going to be delivering about 12,000, 13,000 truckloads of soils. And the probability of an accident occurring at Cleveland Avenue is reduced because of that.

Now, we believed that the March '97 results were adequate enough to make -- to justify the decisions that we made in 1998, but in September of 1998 the responsible parties petitioned the agency to do another round of sampling.

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Well, the agency believes that more data is good so we conducted the -- the PRPs conducted another round of sampling from 1989 with approval of the agency.

In this particular case the agency collected its own set of samples. We collected out of the 52 available wells 23 from that, from that universe. Now, out of -- based on the results that we gathered we saw that generally the down loader was quality -- the quality was basically similar to what we saw in 1997, that is, organics below the drinking water standards.

You still have some hints of metals off-site, but we don't see that, that plume, that classic plume. And overall the metals were generally lower than previous samples of it, and we believe that because of the fact that we were employing a more accurate technique, which we generally refer to as low-flow sampling, that these lower metal results are a more accurate presentation of what the groundwater is down underneath the IEL.

We also sampled six residential wells, and here are the results. We really did not detect any organics to metals except for two

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constituents, which is arsenic and barium, and those metals were detected at significantly below the drinking water standards. I believe they were like an order of magnitude below the standards.

We believe that those results are probably -- the differences between the concentration of -- found in residential wells are probably going to be lower than in the nearby monitoring wells because of the fact there's differences in the way these residential wells are constructed.

Any remedy that the agency will implement will have a monitoring program. Now, we don't have a final monitoring program right now. I think what we're probably going to be soliciting input using, using the Technical Information Committee, but conceptually we have an idea of what this plan will be.

It's going to be at least five years, this monitoring program. We're going to be installing new monitoring wells including background wells. We do realize that there is a need for new background wells, and it's generally consistent with what the Science Advisory Board

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recommended, so we will install new background wells.

We are indeed installing new off-site wells possibly near the county line. We're also going to keep open the possibility of doing radiation testing.

Now, if these monitoring programs, if this thing is implemented and we do find some problems with regards to, well, there's some contamination with certain monitoring wells, there's going to be contingencies built into that thing.

It depends on the level that we find, the level of concern that we find in the, in the contamination. If we find that the monitoring program -- you know, a contingency could be like we could do more for monitoring or we could do some additional studies, you know, putting some residents on bottled water, these are such contingencies.

So in conclusion, the proposal that the agency is putting forward is protective of the human health environment. It's based on existing site conditions, and we think it's implementable. Thank you very much.

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MR. DOZIER: Our next speaker is Larry Antonelli from Ohio EPA. Larry.

MR. ANTONELLI: Good evening, ladies and gentlemen. I'd like to introduce myself. My name is Lawrence Antonelli, I'm with the Ohio Environmental Protection Agency, division of emergency and remedial response.

I've been the site coordinator representing Ohio EPA for just over four years now with our main role in the process to ensure that the state's interests are met throughout the remedial process at Superfund sites in Ohio such as the IEL.

I would like to indicate that the Ohio EPA does support the proposed remedy modifications in principle, meaning that final details specifically with respect to the long-term groundwater monitoring plan as well as management of landfill gases will need to be acceptable before Ohio EPA fully concurs.

With respect to the landfill cap, Ohio EPA does believe that adequate evaluations have determined that the modified cap will meet performance standards and eliminate infiltration. Also, the modified cap meets

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substantive requirements of Ohio regulations.

With respect to treatment of groundwater through monitored natural attenuation, our review of the data collected over the past ten years does demonstrate reductions in most contaminants of concern with respect to metals as well as organics in wells located on the site as well as wells located downgradient of the site.

Ohio EPA does support a comprehensive and long-term groundwater monitoring plan for which details have not been finalized. The monitoring plan should be designed such that accurate and thorough assessments of groundwater quality can be made as well as an evaluation of any potential exposure to human health.

The Ohio EPA intends on playing an active role in the first five year review period to evaluate the effectiveness of monitored natural attenuation at this site.

Ohio EPA does support the installation of additional downgrade monitoring detection wells in residential areas as well as new background wells to better assess contaminant trends when comparing upgrading water quality

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versus down-grading water quality.
The Ohio EPA will recommend and does support the inclusion of gross alpha and gross beta into the regular monitoring network so both background as well as site specific levels can be determined for those parameters. Those parameters are fundamental parameters which indicate gross radiation activity.
With respect to the expansion of the methane venting system, Ohio EPA does support the design and functional requirements of a gas system which is consistent with the monitoring and treatment requirements as specified in the original record of decision.
The gas system will be designed such that it will be capable of collecting both methane as well as nonmethane volatile organic compounds. Thank you.
MR. DOZIER: Thanks, Larry. Now, on behalf of the Agency for Toxic Substances & Disease Registry I'd like to introduce Louise Fabinski.
Louise, I think you've probably been involved in this more than any -- for a longer period than anybody, so, Louise.

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MS. FABINSKI: I don't want to admit to that. This is on, right?
MR. DOZIER: Yes.
MS. FABINSKI: Okay. I have been coming to this community since 1984, and I'm not a technical person, but what I do is listen to what the people in the community are saying and also try to make sure that our agency is communicating with U.S. EPA, Ohio EPA, the local health department, the state health department and community people. So we listen to the interests that you have and we bring them back to our technical folks in Atlanta.
Our role as a public health agency is a nonregulatory role, and what we do is we evaluate the data that EPA or Ohio EPA or PRPs have provided and try to determine whether or not there will an impact on public health.
We've done a number of daily evaluations since the 1980s. All these evaluations have been written, they've been provided to U.S. EPA, the other agencies, the Technical Information Committee and they've been put into the repositories in this community.
ATSDR right now is preparing two

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documents that are called health consultations, and what health consultations are are documents that provide written response to specific questions and it provides to the community, again, to the involved agencies and are put into the repositories.
The two consultations that we've agreed to prepare is a health consultation evaluating the proposal by U.S. EPA to modify the selected remedy. The consultation will evaluate EPA's proposal in light of our previous findings and the additional environmental sampling made available to ATSDR since the last time we prepared a document for the site.
The other health consultation, and is being prepared cooperatively with the Ohio Department of Health and with our agency, will specifically evaluate the September 1998 environmental groundwater -- or water sampling that was made available to us.
They're currently -- the staff in Atlanta are currently working on those two documents, and although I can't report the findings at this meeting tonight they expect to complete the work and make their findings

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publicly available by the end of March of 1999. That would be before the close of the comment period, so that you will have the opportunity to have a public health opinion prior to the close of that public comment period.
We will provide copies of these documents to the local repositories. We also will have our staff publicly available to answer community questions. In other words, they will be coming to town and meeting with you in this kind of a setting so that they can discuss what their findings are as far as the impact on public health.
We also would make sure that we do public grievances. We have our community involvement person here, we will make sure that public notices are placed in the newspapers and also to coordinate our public meeting. Thank you.
MR. DOZIER: I think we're going to make it in the time that I said we would.
Our next speaker is Tim Thurlow. He is the associate regional counsel, Region 5, U.S. EPA. Tim. Keep us on time.
MR. THURLOW: Believe me, I will not

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talk for 25 minutes.
Hello everybody. I am Tim Thurlow, I've been the site attorney for U.S. EPA at this site for 12 years. In fact, I think my first experience with IEL was in this very building, it was 12 years ago, summer of 1987. We were I think that night proposing to put in an alternate water supply out here, and maybe some of you have city water as a result of that decision that EPA made way back then.
Can everybody hear me now?
Okay. What I'm up here to talk about right now is the process here. I would like to talk a little bit about what's going to happen in the future at this site both in short-term and long-term. I especially want to talk about what opportunities in the future there will be for public involvement at this site and for public information.
Well, as Denise said at the beginning of this meeting, there is a public comment period that's underway right now. It will end on April 11th. We've already received many comments from people in this area, and we're collecting them in Chicago.

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Tonight when we finish there will be an opportunity for people to come up here and make oral statements, and they will be taken by the Court Reporter. Those, too, will be added to the record that we're collecting in Chicago.
And finally, if things occur to people between now and April 11th, you're free to send those on into the agency, and those, too, will be added to the public record which will not close until April 11th.
Okay. Once the public comment period is over, EPA will then set out to evaluate those public comments, and the purpose of the evaluation is to decide whether on the basis of the things that we're seeing and hearing changes need to be made in the proposal that EPA would forward to us here. So we will be spending quite a bit of time evaluating those public comments.
Now, ultimately EPA will issue a final decision. When will that be? I can't tell you how soon it will be because that will depend upon how long it takes EPA to address the public comments. We would like to go forward with the decision as soon as we can, but I won't know until the end of the public comment period what

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the number of comments we get, the number of issues that we're going to have to deal with, okay.
Now, assuming, assuming that EPA, when all is said and done and we look at the public comments, decides to go forward with the proposals that we put forward, and I say that's an assumption because we won't make the final decision until after the public comments period is over, assuming that would go forward, what happens next? What's the next step?
The next thing that will happen is EPA will proceed to do design work on the parts of the remedy that we've chosen. That is, we will be doing design work on the new cap, we'll be doing design work on the monitoring plan that we've spoken about.
Now, with the cap, we expect that that could go forward pretty quickly because we were already well along with a cap design in the original remedy and what we're proposing to do now isn't that different than the original ones, and we figured we could go forward with that cap design pretty well -- pretty quickly.
And if we were to do that and if all

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went well, that means that some construction could go forward at the site as early as the summer, and it's conceivable that we could finish the cap on the landfill by the summer of 2000. So that's the cap site of the design.
The other side of the design is going to be with respect to the monitoring drawing. The EPA will set out designing the final specifications for what kind of monitoring is going to take place from here on out at the landfill, and that would involve things like exactly how many new wells will there be? We know we're going to have a fair number of new wells, exactly how many, where will they go, we have not selected places for these monitoring wells.
What will be the exact list of constituents and chemicals we will be looking for when we do the monitoring? Those kind of things will be worked out during the design.
Now, the question is who is going to be doing this design work? The answer is U.S. EPA will be doing the design. We'll still be in charge of doing the design, and we'll be doing it with the assistance of the Ohio EPA.

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Now, what about opportunity for public involvement? I mean, if you're sitting here and thinking, well, okay, this is fine for EPA to come on in here and have this remedy presented to us and we'll have some comments on that, but what about this monitoring plan? Looks to me like there are some important things that are going to be worked out during the design, and I think that's important to the public, will there be an opportunity for public input on it? And the answer is, yes, there will be because, as Denise Gawlinski said, we're going to be reconvening what's called a Technical Information Committee.

This was a committee that was formed in response to the 1989 ROD and was an attempt to inform the group, which included citizen representatives, members from local government, from Ohio EPA, from the peer groups, and the purpose was to allow people to review and comment on design work as it was going forward so that you didn't have one of these situations in which, well, EPA comes in and out with remedy decisions and then you get some fact sheets maybe later on but you don't have any idea of what's going on

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with the essential design work that takes place.

So that Technical Information Committee did review and comment on the design work that went forward on the original design -- the original remedy until we stopped the original remedy, and we would expect that the Technical Information Committee would once again perform that function as we go forward with designing the new remedy.

In addition to having a Technical Information Committee involved, one of the other things that EPA would expect to be doing is putting out fact sheets, because we will be collecting a lot of additional data as part of your monitoring program that we will want to be getting out information to the public as what we're finding.

Okay. So that's the first step that happens after EPA makes a decision. That is, we do the design work and we have an opportunity for the public to be involved in that design work through the Technical Information Committee.

Okay. Once the design is done, then what happens? Once the design is done EPA would propose to go forward with construction or

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implementation of the remedy. Who does that? Who would be building the cap, for example? Well, it would be EPA's preference to see the responsible parties doing that because we would rather have responsible parties using their money to pay for what needs to be done outside rather than take it out of the fund, the Superfund.

So EPA will certainly be making efforts to try to get potentially responsible parties to construct the remedy of the site. If for one reason or another, however, we don't succeed in that we would expect that we would go forward to build this remedy using Superfund.

Okay. One thing that I wanted to emphasize here is that, in any event, whether EPA funds it, whether the PRPs do it, EPA's involvement at this site does not end with this decision. It does not end with construction of the remedy. There is no walking away from this site for U.S. EPA. We're in this with this site for the long haul, and you won't be seeing less of us around here, you'll be seeing more of us around here because we'll be involved in this monitoring program which is going to step up the presence of U.S. EPA in the short run around here

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quite a bit.

The other reason why EPA will be involved for the long-term is because of the requirement that we do five year reviews. When you have a remedy -- that at least contamination on-site like you do at IEL and practically every other landfill in the United States, the Superfund law requires that EPA reconsider and evaluate that remedy every five years to make sure that it's continuing to protect human health and the environment.

What that means is that if we started work at the remedy in 1999 we'd be revisiting it in 2004, 2009, 2014, you keep adding fives on to it until you get tired. In any event, that's what EPA's commitment is under the law to return to this site and reevaluate it.

Now, what happens if you find something? I mean, some people sometimes get the impression that, well, when EPA makes a decision that's the end of it. I mean, does that mean that's all there is, it's written in stone, it cannot be changed? Well, I should think that the example of why we're here tonight shows the Superfund remedy needs to be changed. We're

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proposing to change one tonight and we propose to change it in the future when conditions warrant it.

So if it turns out that certain things pop up and it appears that the remedy that we've chosen isn't sufficient to protect human health and the environment, EPA always has the ability to go in and require more work to be done.

So in sum, to sum up, ten years ago EPA chose to remedy this site and it was based on what we were seeing then, it was based on the picture of the groundwater that we had drawn that day, and that was a point that was some ten years after the landfill had closed.

Tonight we're here to make some changes based on what we're seeing now, some 20 years after the landfill closed and ten years since the last remedy was proposed. And I'm saying to you, too, that in the future we will be continuing to look at what the groundwater does out at this site, and if there appears that we need to make further changes in the future we will do that.

I am now going to turn the microphone

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back to Dan, and I think we'll probably be taking a short break and then we'll return for questions and comments.

MR. DOZIER: That's right. What I'd like to ask now is -- it's about a quarter till according to my watch, ten till according to the clock in the back, if you will come by that clock back and sit down and give your attention up here at five minutes to eight, that is five minutes.

So if anybody wants to go sign up and submit a comment or to ask a question -- let me, let me explain why you're going to sign up, how questions will work.

Somebody asks a question, if you tell me if you want an answer for that, I will turn to the people over here from the government and ask them if they can answer that, and I'll put them right on the spot right now, can you answer that now? Now, they may or may not be able to answer that. They may have the information, they may not, their given right, like all of us, they may not know everything.

If they can answer tonight, under the law they have to submit, they have to submit written answers as part of their response to the

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comment period, but I would like to try to see at least if we could get preliminary or a response from EPA people here tonight as well.

So five minutes to sign up if any of you want to sign up and then if somebody would bring the sheet up here and I will go down the sheet calling people by name one by one. We'll give you the microphone so you can speak and be heard.

(Short recess was taken.)

MR. DOZIER: All right. Ladies and gentlemen, I hate to interrupt anything, but I think we need to get back. I want to give you as much time as possible for the comments.

All right. I want to try to make as much time for the comment period as possible for all of you. In order to do that I'm going to crack the whip, let's get going here.

Okay. We have that I know of 19 people who have signed up, we may get a few more, but at ten minutes apiece, that's three hours. As I said, I'm not going to hold you to a strict time limit, but I would hope that within a ten minute period you can say pretty much all of what you want to say, and three hours is not

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unreasonable, that's 11:00, that's pretty good.

So our first presenter is Terry Witsaman, and I'm just going to turn over here. Terry, if you will spell your name for the Court Reporter and your address if you wish. Thank you.

MR. WITSAMAN: My name is Terry Witsaman, W-I-T-S-A-M-A-N, 1785 Spotswood, Uniontown.

I'd like to direct your attention to that pile of boxes in the back of the room. If you look at the biggest pile of boxes, that's all information that was developed at the landfill from its inception when U.S. EPA started and Ohio EPA started to investigate the landfill up until the present time when this monitored natural attenuation remedy has been proposed by U.S. EPA. If you have noticed there's -- I think there's about ten boxes of information.

U.S. EPA and the PRPs, the companies that dumped at this site, they want to institute monitored natural attenuation, which is basically doing nothing at the site, letting the little microbes and bacteria break down a million gallons of toxic chemicals, 780,000 tons.

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That one box -- see the box in the trash can? I've been doing a lot of investigation of U.S. EPA and what information they have. They have one box, all the information they have on this site to justify this new remedy of monitored natural attenuation will fit in that one box.

I belong to CCLT. I've been looking at all information from U.S. EPA. Most of what I'm going to tell you tonight is based on U.S. EPA's own guidance documents.

You have to understand that U.S. EPA Region 5 is not the same as U.S. EPA in Washington. U.S. EPA in Washington gives directives and guidance to the regions. The regions are supposed to use this guidance to carry out their investigations at Superfund sites and other activities they have in the region.

Now, I listened to Ross del Rosario tonight, and what he had to say was sort of truthful but it was only half the truth because he left out a lot of information that he has available and Ohio EPA also has available and they're not telling you. And so what I'm going to do here, I don't want your eyes to glaze over

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while I'm doing this, but in order to respond to all the points that Ross has made and U.S. EPA has made to Region 5 at this site I'm going to have to talk some technical stuff, but I think you'll be able to understand it.

You don't have to be a rocket scientist to understand that one box of information back there should not change all the investigation that has taken place from 15 years ago. When this thing started I was 35, I'm 50 now. I don't want to be 80 when this ends or dead.

So what we're looking at here and what's most important here is time frame. You've already waited 15 years at this site to get any kind of activity, which none has taken place, nothing productive. So we went something to happen very quickly, and I don't think monitored natural attenuation is going to happen real quickly.

We are here tonight to comment on U.S. EPA's proposal to implement monitored natural attenuation at the IEL site. This is ironic since EPA has forced its remedy on you, the citizens, for the last 15 years without your

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advice or consent.

During that time many of us who do not have the benefit of alternate water supply may have been filtering toxic chemicals through our bodies because U.S. EPA has dragged its feet by not practicing, in my opinion, good science in a reasonable time frame.

Unfortunately for us U.S. EPA Region 5 is tonight proposing to continue, in my opinion, its legacy of mishandling this site by agreeing to try to implement monitored natural attenuation even though they are not following their agency's own guidelines by implementing this type of remedy.

The change in the clay cap in the 1989 record of decision and natural attenuation should not be implemented at this site because of the following reasons.

Number one, U.S. EPA is using flawed information to characterize this site. Natural attenuation as a remedy, according to their own agency, requires a higher level of understanding of the mechanics of the toxic plume than needed for other remediation techniques. This basically means you need to collect more information on the

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toxic plume in the site to use natural attenuation.

The latest technology which U.S. EPA should have used, according to their own seminar on monitored natural attenuation from September to December of 1998, which was provided to every single region -- and I want to show you how much information they had on where, when and how they should use this. This is what I downloaded from my computer. This information, what Ross is telling you, he must not have gone to that seminar or if he did he forget everything he learned.

The latest technology which U.S. EPA should have used, according to their seminar, is by the use of push technology, which essentially is installing one inch to one and a half inch diameter casing, steel pipes instead of traditional monitoring wells.

These geo-probes are half the cost of traditional monitoring wells and can be used to draw water samples, determine water flow direction and rate as well as contaminant flux and geochemical distribution. It can also be used for core sampling of the site as they are

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installed.
You could put 60 of these probes for every 20 traditional monitoring wells. They should be installed using transects and along the southern line of the plume after it is defined. By doing transects you will use technology that is possible to reveal the characteristics of a cross-section of the contaminant plume and to find it three-dimensionally. And that's what U.S. EPA in Washington wants them to do, define this site three-dimensionally, which they can using the 28 monitoring wells that were put in 15 years ago.
Once the push technology is used to reveal three-dimensional site characterization, then permanent monitoring well transects can be installed and you would then have an accurate site characterizations as relying exclusively on monitoring wells or site characterization as U.S. EPA Region 5 has done is unreliable according to Washington's own information.
Traditional monitoring wells can miss horizontal and vertical plumes of contamination as stated by U.S. EPA at their own seminar on natural attenuation in the fall of 1998.

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Number two, Region 5 has not characterized this site adequately. They are using data from a database, i.e., the RI, the original remedial investigation feasibility study, and old monitoring wells that were never intended to be used to meet the extensive information requirements that are needed to justify natural attenuation according to U.S. EPA guidance documents.
Even using the old monitoring wells for new sampling is not adequate because these wells do not have -- do not -- have not defined the contamination on-site or off-site in a comprehensive three-dimensional manner as suggested by U.S. EPA Washington.
They are currently estimating flux because there is not an adequate number of these wells at different depths to quantify the toxic plume horizontally or vertically.
Three, U.S. EPA's computer model is flawed because it is only as good as the information put into it according to Washington. And that information is flawed as described previously.
Four, Region 5 has given no estimate

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on how long natural attenuation will take to return the aquifer to its beneficial use, although they said in their own literature that they sent to you it would be an operable unit in 30 years. I'll be 80.
The 1989 record of decision recommended -- recommendation of pump-and-treat would take only three years according to U.S. EPA's Region 5 1998 remedy comparison document for this site that's in the information repository at the library. Obviously natural attenuation cannot be completed in a reasonable time frame and that's what Washington requires.
Without continuous pumping of the water table, at some time intercept toxic wastes from decomposing barrels continue to contaminate the aquifer over time sporadically and in spite.
The natural contingency plan states that EPA must not just act on releases of toxics but also on the threat of releases. So when you have all these buried rusting barrels of toxic waste at the site -- and U.S. EPA knows where the hot spots are because they drug a -- they had ground penetrating radar at this site, and I think they used proton magnetometers and they

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know where there's an accumulation of barrels, and those barrels should be taken care of, excavated, remediated, but they have done nothing at this site.
Number six, Dr. Mary Randolph and Ross del Rosario, both of U.S. EPA, and Larry Antonelli of Ohio EPA have all questioned whether there was ample evidence of natural attenuation of certain specific volatile organic chemicals and metals at this site and have called on their region and the PRPs to perform at least five more rounds of testing to justify selecting the natural attenuation remedy.
According to the U.S. EPA in Washington the burden of proof should be on the proponents of natural attenuation, not on U.S. EPA.
Number seven, natural attenuation has been used in conjunction with active remediation, that means taking the toxic chemicals out of the site, at all but six sites where U.S. EPA has chosen natural attenuation in this country. No active remediation has taken place at this site of any kind, to my knowledge, even though EPA has identified hot spots, why not? Region 5 has not

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even recently mentioned that the evaluation of contaminant source control at this site other than a cap, and Washington also requires that.

Number eight, because of future seepage from the site significant contamination migration with the potential for impacts on receptors could take place.

Regarding the proposed change in the design of the cap, Region 5 wants to change the cap design from a hazardous waste cap -- which this is a hazardous waste site. They didn't dump cardboard up there. That wasn't the only thing they dumped up there according to some rubber companies, they were dumping toxic waste up there.

Region 5 wants to change the cap designed from a hazardous waste cap to a regular nonhazardous cap site, frost damage concerns, cost and threatening truck traffic accidents.

There's a memo in the information repository, and that memo is from U.S. EPA technical support and site assessment to Region 1 dated September 1997. It's from Dennis P. Gagney, chief of that section, and he states that the type of cap already selected for this site

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and the record of decision would have a better long-term minimization of rainwater infiltration, which is the purpose of a cap, than the cap now being proposed by Region 5.

This is very important since natural attenuation is the chosen remedy -- if this is the chosen remedy since this approach takes much longer and in most cases than an active remedy.

I don't believe that being 30 miles from the clay source for the 1989 cap is a prohibitive distance. Could U.S. EPA give us examples from ten sites where a clay cap was implemented by U.S. EPA and how far was their clay source? According to the U.S. EPA documents the frost damage concern of a clay cap can be minimized by adding additional cover to it, it's that simple.

Concerned about the 27,000 vehicles? It sounds pretty big, doesn't it, ladies and gentlemen? Well, they're unwarranted. In my opinion State Route 619 already has 14 to 15,000 vehicles a day. How do I know this? I lived on that route, and this new truck traffic would be spread over a long period of time. Cleveland Avenue is not a narrow road as U.S. EPA thinks

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but a four lane highway, and don't forget, these two roads had no problem carrying the toxic chemicals produced by PRP dumpers from Akron to this site for 20 years, why worry now?

Number ten, natural attenuation does not mitigate the actual or potential threat to receptors because of the increased time needed for natural attenuation to be successful.

Many residents in Uniontown who are within a half mile to a mile or more of IEL still depend on groundwater for their source of drinking water. Even some who have alternate water available are unable for financial or personal reasons to hook up to this supply so they are now and always have been at risk.

In addition, many ponds west of the landfill are actual or potential receptors since they are recharged by groundwater according to remedial investigation and feasibility study from around 1987, '88.

Number 11, I would like to submit Linda Kern's, the former on-site project manager for U.S. EPA at this site, and she was pretty sharp, I'd like to submit her response to the position paper and comments that were submitted

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by the rubber companies on the 60 percent remedial design work and related documents from July 1985 as one of my public comments. I would like you to respond to her responses to the rubber companies the same as if they were my own comments to you because, ladies and gentlemen, in that report Linda Kern disagrees with everything Ross del Rosario just told you.

In closing, the public comment period is the only time that residents who live in this community and are affected by this site will have to legally comment on U.S. EPA's proposed remedy, a remedy that if it is the wrong choice would have dire consequences for your health, your welfare, your property values and the local environment of the community.

We don't have scientists and lawyers or public relations people working for our benefit, for our benefit -- we don't have scientists, lawyers or public relations people working for our benefit like the companies who dumped here or U.S. EPA Region 5 to control this site, however, we do have a very knowledgeable local citizens group that for the last 15 years fought for you at this site, and I am very proud

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to be a member of that group.
How many times did any of the residents get to talk to anyone from U.S. EPA on a daily basis like the polluters do? For example, the polluters were in Cleveland behind closed doors months on end and for the last three years with U.S. EPA, the judge and a gag community representative from the township who didn't even have any input into the discussions taking place. Who was looking out for your welfare then?
This process was outrageous. The people have been violated over the years by this site and ridiculous process, had no control or say over their own destiny. Those like U.S. EPA who control our destiny will determine what that destiny will be if we let them by our own inaction. If you don't want the dumpers to win, then stand up with us in fighting this possible reckless remedy that U.S. EPA is proposing for this site.
In my opinion, what is happening at this site is based on money, not so much good science. U.S. EPA constantly emphasizes how much money this new remedy will save. Those are costs

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that will ultimately be paid by the dumpers at this site. Natural attenuation is just a cheap remedy for this site. I have to question whether U.S. EPA doesn't think we aren't worth a better remedy that uses active remediation and an accurate site characterization to clean up this site in just a few years, not decades.
I know that all our families are worth more than a lousy eight or 12 million dollars that it's going to save the polluters at this site if natural attenuation is implemented.
One more thing.
AUDIENCE: Hey, you've been up there 20 minutes.
MR. WITSAMAN: There's a bottle of water here. It's got benzene, it's got vinyl chloride, it's got metals in it. It represents for the companies, said that the water in the landfill was just peachy keen and really good to drink, probably be all right to drink. Well, if you want to come up and get it, here it is.
And one other thing, this is my opinion of what's happened -- this is my opinion of what's been taking place at this site for the last 15 years, (indicating). Thank you.

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MR. DOZIER: Okay. I'm going to try to cut the applause down so we can spend the time communicating. Thank you, Terry.
Our next speaker that signed up is Rex Shover. Rex, if you'll come up.
MR. SHOVER: My name is Rex Shover, I live at 3707 Edison Street here in Uniontown.
I'm here to read a letter that was sent to me by my brother who lives in Garden Grove, California. This letter was submitted to Bob Martin, EPA in Washington.
Dear Mr. Martin: I'm writing this letter to inform you of my personal knowledge concerning the IEL site in Uniontown, Ohio.
I was born in Akron, Ohio on March 31st, 1948 and resided with my parents and brothers at 467 Stetler Avenue. In 1952 we moved to Uniontown, and at that time Uniontown population was less than 500 people. I soon discovered that many families there were related to each other through one degree or another.
Every house in Uniontown was supplied with water by their own well with the exception of the Madroo farm where my three great-aunts lived. Their land was located west of Old State

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Route 8, now Cleveland Avenue, across from the IEL site and was about 27 acres in size.
Their drinking water came out of the ground from a natural spring located northeast of the present day farmhouse and flowed down the creek in a north to south direction where it ran into a pond. A pipe delivered this water from the creek to a cistern in the basement.
The public health department monitored this water on a yearly basis and was considered to be the cleanness and purest water in Uniontown according to my three aunts. My brothers and I drank water directly from this creek many times during our youth without any danger of any kind.
During the years that I was growing up in Uniontown I never once have heard of anyone with cancer, leukemia or having any kind of birth defects. Most people died of old age, natural causes or accidents. Old age being defined as early 80s to mid 90s.
Now I hear that the cancer and leukemia levels are about the national average or above the national average and one child was born without a brain.

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The IEL was originally a sand and gravel pit until sometime between 1959 and 1961 at which time trash and junk started to appear at this site.

During the summer of 1964 I met and started dating Melissa (Missy) Kittinger. Her father, Charles Kittinger, I soon found out was the owner/operator of Kittinger Trucking Company and was leasing a three acre IEL site.

During the winter of 1964 and '65 Mr. Kittinger employed me part-time as a mechanic's helper to assist in repairs of his trucks at the IEL site. I was told by Mr. Kittinger at one time that I was not to walk beyond a certain point behind the maintenance building because there was hazardous material there and he didn't want anyone exposed to it.

On many occasions I rode along with the dump truck drivers to pick up waste materials from Seiberling Rubber, Firestone, Goodrich, General and Goodyear Tire & Rubber Companies in Akron. This waste material was then driven to the IEL site in Uniontown and dumped.

In 1966 I enlisted in the United States Navy, which started a 25 year career both

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in the military and in Civil Service with the Department of Navy. While stationed at the navel air station in Norfolk, Virginia I received formal training in nuclear, biological and chemical warfare and served as a member of the NBC rapid response team.

In June of 1970 I returned to Uniontown after my first enlistment and can remember that on several occasions from 1966 to 1971 observing U.S. Army tanker trucks with radioactive material placards affixed to them both coming and going from the IEL site.

It must be understood that during my first enlistment that I would routinely return to Uniontown on weekend liberty and military leave. My knowledge today is that the Army trucks that I observed were especially designed double-lined tankers designed to transport liquid radioactive waste material.

I reenlisted in the United States Navy in August of 1971 for four more years during which time I received formal training as an industrial radiologist -- radiographer. This schooling increased my knowledge of radiation, radioactive materials and associated health

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problems on humans and the nuclear regulatory requirements as specified in Title 10.

On February 28th, 1977 I was hired at the Philadelphia Navel Shipyard as an industrial radiographer and transferred to the Long Beach Naval Shipyard in California in July of 1981 to continue my career in the same capacity.

From 1977 to 1994, at which time I retired as a GS-11 quality assurance specialist in ship building, I received extensive training and experience concerning radioactive materials, radiation safety, the health effects associated with radioactive materials and ionization radiation and the Nuclear Regulatory Commission requirements as specified in CFR Title 10.

During my career I have worked with high energy x-ray machines, Cesium 137, Iridium 192 and Cobalt 60. I was properly trained in safe handling thereof.

Today I'm employed as a nondestructive testing inspector for a company in Garden Grove, California. In December 1988 we were contracted to perform inspections at the San Onofre Nuclear Generation Station (S.O.N.G.S.) located in San Diego County, California at which

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time I received training in nuclear safety, security, hazardous materials, hazardous waste and et cetera prior to performing our required inspection during the outage phase and refueling of unit two.

I will return there again in March of this year for more training prior to inspecting unit number three during its outage phase for repairs and refueling and will require more training.

This basically sums up my knowledge and experience in the aforementioned topics. I will now focus on the problems at the IEL site in Uniontown.

I find that the presence of so many types of radioactive materials and the energy levels being emitted at the IEL site and in the surrounding groundwater to be a very serious problem and could create long-term health problems.

Now referring to an article written by Bob Downing, a staff writer for the Akron Beacon Journal that was published on Saturday, January 23rd, 1999, "Toxic Heavy Metals That Appeared to be a Puzzle Based on 1997 Test

Results were Reanalyzed Using a Different Testing Method." His question is this, what testing method was used, the magic wand technique?

Joseph Towarnicky of the Columbus-based Sharp & Associates made the statement, "Metals do not seem to be an issue." Really? Now, Mr. Towarnicky is either a bona fide idiot or he's been taking lying lessons from President Clinton.

Cobalt, uranium, thorium, plutonium, strontium, cadmium and radium are heavy metals and have been found in the groundwater in and around the IEL site. Mr. Towarnicky states that heavy metals do not seem to be an issue.

Now, Mr. Martin, I have some serious questions concerning the IEL site. Is the Nuclear Regulatory Commission involved in any of the cleanup and monitoring of the IEL site? If not, why?

The U.S. N.R.C. is responsible for the licensing requirements for anyone manufacturing, handling, shipping, receiving, disposing and storage of radioactive materials and waste by-products including monitoring requirements, training and the associated records

thereof.

Did the U.S. Army hold an N.R.C. license to transport and dispose the radioactive material at the IEL site? Did Kittinger Trucking Company and the owner of the IEL site have an N.R.C. license to receive and store radioactive material? To my knowledge they did not.

Did the IEL site meet the requirements of a disposal site for radioactive materials as specified in U.S.C. Title 10? To my knowledge the answer is no.

MR. DOZIER: Okay. Thank you. I want to ask you all to help me because I wanted to make sure that everybody will have an opportunity to speak tonight and I'm not worried about time. Again, I'm not going to try to cut people off, but I would ask that you make these presentations consistent with what you want to say as brief as possible so we can give everybody a chance to speak.

Our next speaker is Sue Ruley.

MS. RULEY: You can scratch my fellow trustee off there, he's just loaned me his three minutes.

MR. DOZIER: No, we're not doing

three minutes, and I'll call him out and if he wants to speak out he can.

MS. RULEY: Okay. All right. Okay. My name is Sue Ruley, I'm a Lake Township trustee.

We have come here tonight with the hope that our input will be taken seriously and this meeting will turn out to be more than just an obligatory hearing to comply with legal requirements.

It should have come as no surprise to anyone that this site has become so controversial because it's located in the middle of a town. This IEL has become a cancer on the landscape of the township, I think we'll all agree on that.

As citizens what do we know? Well, for one thing we know what the EPA's own experts have said in the past. As recent as 1995, Linda Kern, U.S. EPA, wrote a very detailed report refuting the PRP's statements that nothing need be done at this site.

This report is very explicit that data, up to 1995 at least, made it clear that this was a dangerous Superfund site; that a one to two foot separation between the waste and the

water was not acceptable; that the site came under RECRA Subtitle C with regard to requirements; that the PRPs were wrong when they stated the maximum contamination levels had gone down when, in fact, many instances they had gone up; and one full year of quarterly testing needs to be done to accurately assess groundwater conditions and on and on.

Anyone reading the current report must agree that up to 1995 certain serious factors were being taken into consideration and answers to very important questions had to be given before the record of decision would be changed.

Now, we jump ahead to March of 1999. One round of testing done by the PRPs and sent to a noncertified lab has changed everything that happened before. The PRP's request has remained constant, nothing need be done, and we can expect that. What we cannot expect is now that the EPA has agreed. Is this March '97 test the new information referred to in the fact sheet that was sent out to the public?

In 1992 the EPA commissioned Clean Sites to make an independent study of the site.

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This report states clearly that in all testing, especially at a controversial site, split samples must be taken and blind sampling must be done.

The Scientific Advisory Board in their report also stated verification of a lab should be done by a pre-award audit and by submitting blind samples to test the lab's reliability. Having the polluters sample and send it to a lab of their own choice, which is noncertified, is hardly my idea of a blind testing.

On December 17th, 1997 Dr. -- Mr. del Rosario wrote to the PRP's laboratory saying, and I quote, In order to estimate the rates of natural attenuation to a degree suitable for assessing its contribution for achieving site goals, pertinent data must be collected in a time series of at least five significant time points at a number of sampling stations. Again, such comments from EPA hardly condone the one shot testing that is now being proposed.

This letter also casts serious doubts on the PRP's conclusions that there is no problem with the maximum contaminant levels. This letter states in part, and I quote, The tables show

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steady increases in concentrations from 1988 to 1997 for benzene and chloroethane in shallow wells, 1,1-dichloroethane, 1,2-dichloroethane and benzene in intermediate wells, 1,1-dichloroethane and 1,2-dichloroethane in bedrock wells.

Quote, It is noted that these compounds are intermediate degradation products, not end products, and in some cases these compounds are more toxic to human health than are the parent compounds.

Quote, Cadmium, lead, arsenic, antimony, thallium, nickels are reported at concentrations higher than monitoring MCLs in every monitoring well and again on and on.

In March of '98 Dr. Mary Randolph stated in a letter that data suggests that the contamination plume could further expand resulting in contamination of groundwater downgradient and that, quote, Natural attenuation appears to be incompetent to reduce some toxic metals below the MCL in groundwater.

Interestingly, in Mr. del Rosario's instructions to both Dr. Mary Randolph and Dr. Luanne Vanderpool, he gave instructions that monitoring wells 12 and 20 were to be considered

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as background wells. You will also notice in the fact sheets that came out to your homes these wells are pointed out as background wells.

He went so far as to state regarding those same wells that they, quote, Suggest that certain metals occur naturally at elevated levels.

What he does not mention is that the Science Advisory Board's report, which seemingly has become the EPA's bible, clearly states that these two wells, 12 and 20, would not be adequate to characterize the mean and variability of background radionuclide concentrations, quote, given the radial nature of groundwater flow at the IEL site, these two wells are clearly inadequate for characterizing background.

Data from monitoring well 20 is particularly suspect given the site flow patterns, however, this would still be true if the pattern was simple, east to west. Yet here we are years later with everyone being told that these wells are to be used as background. Well, what are we missing here? We are told not to worry folks because more monitoring wells are going to be done to determine future

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contamination problems. However, this whole issue is going to press right now using those same suspect wells that the SAB clearly stated are inadequate for such use. A monitoring well dug sometime in the future is not going to help us now.

In December of '97 in a critique of the 1997 water test Mr. Lawrence Antonelli, the site coordinator, wrote to Mr. del Rosario and said, quote, Ohio EPA does not have any reason to believe that future releases of heavy metals will not occur.

Quote, Metallics were found and varied by concentration in nearly all of the off-site monitoring wells. Quote, Historical groundwater data does not entirely demonstrate trends of decreasing contaminant concentrations over time for all monitoring points. Not only was the data called into question but so was the cap cover. Mr. Antonelli seems to have changed his mind.

The EPA publication entitled, A Citizen's Guide to Natural Attenuation states, Because the ability of natural attenuation to be an effective cleanup method depends on a variety

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of conditions, the site needs to be well characterized to determine if natural attenuation is occurring or will occur.

Speaking of characterization of wastes, early in the program both TAG grant experts repeatedly called for core samples in this site. In the SAB report cores were referred to throughout the entire report. The report states, quote, The scientific studies used by the agency to support their selection of a groundwater monitoring program and not a soil core sampling program are summarized, and it goes on in two letters.

And the co -- the SAB report goes on and, quote, again, Both of these reports include technical flaws and provide no clear evidence that groundwater monitoring is more sensitive in detecting the presence of radioactive material than would be a solid core sampling program.

For years CCLT has been calling for cores to be done. Now, after all these years again we hear from Mr. Kern of the Ohio Attorney General's office who asks, What do you mean by cores?

When Mr. del Rosario came into the

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township office I asked him why haven't cores been done? His response, What do you mean by cores? Perhaps they could ask the TAG consultants or maybe the SAB panel for their answer.

So we have reports dated '95, '97 and '98 from EPA's own technical people added to what past TAG grant experts and others have said, and I believe that the inconsistencies are enough to warrant a rethinking of the new proposed remedy.

These years have been exhausting and frustrating for township officials and community leaders. No one desires a healing of this environmental cancer more than we do. Our hope is that you will seriously consider our concerns and render a proper verdict. And we will be turning in something for the administrative record.

MR. DOZIER: Thank you, ma'am. I appreciate it.

Don Myers.

MR. MYERS: I yield my time to Sue Ruley.

MR. DOZIER: As I said, okay. I

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would call next on Chris Borello.

MS. BORELLO: Good evening.

MR. DOZIER: Hold it closer to your mouth.

MS. BORELLO: This okay?

MR. DOZIER: Yeah.

MS. BORELLO: First of all, for the record, I want to state the CCLT has written U.S. EPA administrator Carol Browner asking that she put an immediate halt to this entire process because it is such a sham. I stand by my earlier statements in the Akron Beacon Journal when I called it corrupt, sick and as evil as you can get.

We base this request in part on the technical letters that we just obtained that were written by both the state and federal EPAs. Both letters raise numerous concerns regarding attenuation at IEL, and indeed preponderance of evidence stated in these letters appeared to go clearly against implementing attenuation at this site at least until far more data is collected including better characterization of waste material buried at IEL.

We were outraged that these

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particular letters, both written in December of 1997, were deliberately withheld from the public until just recently. One letter was even described to me as being classified by its author. That was Dr. Mary Randolph.

I contacted her in Ada, Oklahoma. She said, How did you get it? How did you get it? I was told by Mr. del Rosario it was to be classified, how did you get it?

One letter was even -- excuse me. It was very obvious that we were never meant to know about this internal disagreement at EPA regarding attenuation issue. Had the township lawyer not written a formal request to obtain this, I am convinced that we would still be in the dark regarding central concerns listed by a scientist at U.S. EPA in Oklahoma.

In fact, the reason we got a 30 day extension to this comment period we're now entered in was because the EPA letters had also been withheld from us until the comment period was nearly halfway over. This stated letter was even more damning against the polluters' plan calling for attenuation than the one written by the scientist at U.S. EPA.

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Furthermore, at this point I still have yet to figure out exactly how both the state and federal EPAs have managed to dodge and ignore U.S. EPA's own 1995 legal written response to the polluters' attorneys that took EPA six months to write which stated in numerous ways, both legal and technical, that this plan should not be implemented characterizing it as a no action scenario.

This 1995 report states -- stresses, among other things, that the, quote, significant threat of release is enough in itself to continue to call for active -- to continue to call for an active remediation of the IEL site versus this passive do nothing proposal despite the fact that IEL contains millions of gallons of hazardous waste and high levels of toxic gases.

If this is legally true just a few years ago in 1995, what in the world has changed? Is EPA suggesting that millions of gallons have suddenly disappeared over the last three and a half years or what? Did EPA remove those barrels, thousands of barrels that lie silently within IEL as ticking time bombs when we weren't looking?

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The only thing close to an explanation I have received from an EPA official recently is that it doesn't matter that all those tons of toxins are sitting there perched a few feet away from the water table because the proposed monitoring of the site will miraculously catch anything leaking from IEL with those monitoring wells.

I guess the state and regional EPA haven't heard about the most recent information disseminated at U.S. EPA's seminars in the fall and winter regarding attenuation which calls for its push technology program to be implemented stating that monitoring wells may, in fact, miss migrating contamination. Golly gee.

Given the high rate of flow at IEL according to USGS is up to six feet a day. Will EPA be willing to put it in writing to all of you that it will be testing those wells daily or weekly, indefinitely to pick up contaminants that may break loose from a barrel at any given time?

We're sitting here, you know, a few thousand yards from IEL right now. What may be breaking loose now? They haven't monitored this site in the last five years and they're saying,

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oh, but trust us, we'll monitor in the future for you, we'll protect you. Right.

And if high levels would be found in those wells, they don't have anything active to stop it from going out, what then? What if the barrels or canisters are just now starting to leak?

Oh, wait a minute, I just remembered what happened. I said I didn't know what could have been the cause for them to change their mind after the 1995 report I'm just citing, I just remembered, it was those closed-door secret negotiations that took place for the last three and a half years. That's what happened, that's what made the difference

And, you know, we all yelled and screamed. The township finally got in on the 11th hour, my group still never got in. We were backed by the papers, but, you know, too bad, you know, you're only the people that will have to live with the results of this for the rest of their lives, doesn't matter.

Once again, I can only conclude as with the radiation scandal that there is absolutely no real science going on at IEL but

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just pure politics. What amazes me is how EPA continues to creatively finesse its way into claiming that a trend regarding contamination is somehow miraculously emerged even though only two rounds of testing have taken place since March of '93.

And its own in-house experts, as you've heard again from Sue Ruley and myself here, have stated at least five more rounds are needed to make any really definitive statements, but, again, if there is no science going on anything is possible, I guess. All that matters is how good the spin is.

Okay. It's put out there for public consumption and manipulating the data and the statistics. I've heard it often said that you can make numbers say just about anything you want them to say, and I believe this has been the case for a long time at IEL, particularly on the radiation issue.

While most people are only interested in groundwater rather than exposure aspects of the cleanup, that's the most popular and the most thing that you think of first, I have spent most of the last 15 and a half years learning about

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insidious effects regarding soil ground migration, and I have spoken with some of the nation's leading experts to learn about some positive and proactive solutions to protect the health of our community residents.

I would like to ask the EPA once again to comply with the NCP as was done at the OII site in Monterey Park, California where polluters were legally required by U.S. EPA to control lateral migrating toxic and carcinogenic vapors down to health state standards below parts per billion.

Why is it that Region 5 attorneys are only legally requiring the IEL polluters to keep the methane gas -- you keep hearing methane venting system. There's 150 tons of toxic gases not including methane generated yearly, and that's a low-ball estimate according to our technical experts than we had more than a few years ago.

You don't hear any mention of toxins and we would just -- it would be nice if they would not control them. They say, Oh, we will. One time I heard them say they would control them to zero. I sat at one of the EPA meetings, We'll

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control it to zero. Well, I want the proof, I want to see it legally designated like the OII to pay for that, PRPs are required, they must monitor and they must control it down to low parts per billion.

You hear they're only right now proposing our polluters to keep the methane only to 50,000 parts per million, not PPB, parts per million. Is this also being done I suspect to save the polluters money? If it isn't legally enforceable could it be possible -- I'm hearing recent statements from the PRPs, They really care about you folks, they really do, they care about the citizens, they care about the employees.

Well, if they really care, and even though if Mr. Thurlow here in turn just legally can't enforce it, maybe our PRPs would like to sit down with my group and we'll go over the OII legal ROD, which we have copies of from California. U.S. EPA Region 9 provided them to us and the state EPA, and I would really like, and I would like this to be on the record, I would like to sit down with Mr. Leo Tsosi, Mr. Thurlow, Mr. Kerns and let's dissect that California case and see if we can't achieve those

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low parts per billion with monitoring the site here at IEL.

Given the vagueness of your current statements regarding gases, we have no way of knowing what actually remains in this critical aspect, but I assume it's been gutted because we see everything else gutted.

Finally, EPA is once again sweeping all of our previously identified compounds under the rug. Given that I have been told by the scientists that worked on the plans for the Beltz case that we have top secret Army nuclear weapons and many waste material buried at IEL. It greatly concerns me that EPA and the polluters completely dismiss TICs and unknown compounds, which you all have copies of, examples of from the latest round in '98, and they have routinely shown up in the wells at IEL for year after year after year. Indeed, it was the vast majority of compounds that we saw in the groundwater everywhere.

I will never forget the day in December of 1992 when U.S. EPA radiation expert Dr. John Broadway from Montgomery, Alabama called me two weeks after a public meeting was held

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right here in this room, and he acknowledged to me that indeed plutonium 239 that I had questioned him about at the meeting two weeks earlier, he says, It is valid, Chris, and we are concerned because it shouldn't be showing up at 92 feet down on top of bedrock under the landfill.

When I questioned him wasn't this very dangerous substances, Dr. Broadway agreed that it was, and he said it was actually one of the most dangerous substances known to man.

EPA proceeded in months to come to blow off this plutonium finding just as being a trace level, oh, well, along with some other samples also contained and found in other locations.

Nevertheless, I am still horrified and appalled that EPA and polluters can continue to forge ahead with this plan to legalize this attenuation at IEL. Like Terry stated, it's been going on for the last 15 years, you know, anyways, but if they want to make it legal.

When such compounds of unknown quantities gets to be discovered and put our residents at further risk, it is beyond

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comprehension that you are willing -- if you aren't willing to act on the side of caution, I'm referring to the EPA here and the polluters, when you don't really know what all is buried in IEL and what could be released.

In closing, I resubmit to you your own words from your own experts regarding attenuation and ask that you heed them.

And I have one more thing that I recently obtained since today or yesterday. We just obtained the company's -- copy of the company's fact sheets stating that they disseminated to hundreds of their employees in the area and so they -- you've heard that they want to scrap even the cap, okay, and that's part our old blue light special from 1989, our proposal is to sit down and reopen and direct the radiation count, you know, and have a much better cleanup.

But, here's a little picture -- instead of -- the PRPs are proposing poplar trees, get rid of the cap and we'll plant like poplar trees with long tap roots and they'll suck the chemicals up.

No, I'm serious, that's what your

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companies have proposed to their employees and they're going to propose it to Mr. Thurlow before this comment period is over. While you're commenting against all this they're going to -- they're working to even downgrade the cleanup further.

Now, here's my proposal. If they're going to propose poplar trees, I want to propose sunflowers. No, wait a minute. I have this article I received from the Beacon Journal, got it from some expert in Pittsburgh, they're always getting information, Bob passed it along to me a few weeks ago. It says, "Sunflowers Bred to Absorb Strontium Cesium Blooms on Pond at Nearby Chernobyl," okay.

So, you know, I think sunflowers -- I'm a gardener, I think sunflowers would look much nicer if we're going to do this instead of poplar trees, and maybe they know something about the sunflowers obviously have some affect on the radiation so let's put something that might be a little proactive for the rad. Thank you.

MR. DOZIER: Okay. Our next speaker is Reggie, Reggie Witsaman, is she here? Oh, okay. Great, thanks.

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I keep repeating this to little effect, but I really do want to try to give everybody a chance to speak here before we finish. We're not leaving until everybody gets on the record, and that means if we have to stay here until 2:00 the record will be open until then. And so I will give you people plenty of time, but I would like you to try to take consideration for the people that are last on the list. Thanks. It's on.

MS. WITSAMAN: I won't be as long as the others, they had more knowledge about this site than I have.

I really wasn't going to submit any kind of a written comment on the proposed new remedy at the IEL until I picked up the Akron Beacon Journal this morning and read the front page story about the remedy proposed by the rubber companies in planting trees, vegetative, vegetables and stuff. I didn't know whether to laugh or cry at this ridiculous proposal.

I have been actively involved in the IEL problem, or lack of depending on your point of view, of this site since it first made Superfund about 14 years ago.

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I became involved when my daughter attended the day care that used to exist on Cleveland Avenue. And I went there one day to find the Uniontown Fire Department evacuating the children because it reached explosive methane levels at the site and they had to evacuate the kids. So I was just shocked then to learn that the undeveloped land behind the day care was a dangerous toxic dump.

Well, I was really naive back then because I thought once we got on the Superfund list that the EPA would be our knights in white, you know, shining armor and would come to our rescue and do all the right things that they should be doing but they hadn't.

I mean, they have found toxins in our groundwater and toxic gases that are migrating off, and this has been going on for 15 years.

Oh, yeah, they'll tell that they gave alternate water, that they brought it in, but don't forget, they only give it to a few people, homes, and the rest of us had to pay out of our own pocket to hook up, and there are still people unable to pay that are at risk.

But looking back over 14 years, the

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hindsight being better than foresight, it has become clear to me that this site was never about good science in trying to protect the health of the residents. It appears to me that it is more about how the polluters use the EPA as a shield to hide behind so that all the heat and anger from the citizens is directed at them.

Now, don't feel sorry for them because I believe the suits of U.S. EPA are active participants in this game. My opinion is that U.S. EPA puts up a pretense in trying to protect their residents by performing mediocre science in an effort to keep liability and cleanup cost down for the polluters, in exchange U.S. EPA gets credit proclaiming that they got a cleanup decree and then they would put it on their official record as a successful completion and they get raises and promotions. The PRPs win, the EPA wins but we lose.

I believe they have drawn the whole process out with the hopes of wearing down the citizens groups and the residents. I believe U.S. EPA's lack of action over the past 15 years has been more hazardous to our health than the toxic site.

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It appears to me that the rubber companies have always been concerned about their image and portrayal as good citizens of the community. The time has come now for them to cough up the money and clean up the mess that has been made in our back yards, but all they think about is their bottom line.

What do I think is going on? I believe Uniontown is becoming the poster child for all future cleanups in the country where a scientifically bankrupt U.S. EPA is only concerned about another beat on the jar and kisses the bottom line of these corporations.

What do I want? I want the best possible cleanup for this site based on proper scientific testing. I want this site cleaned up in less than three years. I want alternate water provided to everyone in this town that has not yet been able to hook up.

In addition, I want what the citizens of Woburn, Massachusetts want, I want the executives of these firms as cited by the PRPs to stop hiding behind their attorneys and come to this community and apologize for the mess they've created. I want them to see our bottom line, which is the health of our children.

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MR. DOZIER: Thank you. Our next speaker is Norma Bolt. Thank you, ma'am.

MS. BOLT: Hi. This is short and sweet. I'd like to respond to your March 1999 EPA fact sheet and the proposed cleanup in general.

First let me tell you I am a 30 year resident living just northwest of the dump. I am also a major cancer surgery survivor, a vulvectomy so far. I still require yearly biopsies. Several of my children have had unusual tumors, and this last week my husband has been diagnosed with a form of lymphoma cancer. These in families with no history of cancer, not even one case.

Let me give you several reasons why I'm not so foolish as to believe your agency or the companies. In reading the March 1999 EPA public fact sheet and the results reported from the monitoring wells, two things stood out for me. The VOC organics detected in this statement lower than their maximum historical concentrations, and, two, the inorganics and their sporadic exceedances for federal drinking

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water standards.

Put these two facts together with the stupid statement from the companies that a cap would/could squeeze out thousands of gallons of contaminated liquid, but natural attenuation of unidentified toxins by planting poplar trees will surely take care of the problem.

Red flags everything you're trying to impose upon us, particularly since a recent report of the companies showed 8,300 parts per billion of benzene or 1,600 percent higher than the cut-off percentage. We know and you can't dispute how much was dumped on us. The thousands of barrels yet to break down and rust, sporadic is a great word, your choice.

This is not going to go away with dewdrops and tree roots. It's laying there insidiously seeping out because you refuse to seriously clean it up. And will you be there sporadically monitoring as it sporadically seeps?

The technology is available, and if this town could handle the trucks bringing in this payload I'm sure we can handle the trucks taking treated wastes out.

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I started out 15 years ago respecting my congressman and my government entity, EPA included, and now instead most of those involved look to me to be culpable and protecting of government and business rather than Uniontown and her residents.

They talk of good public gain and I'm sure they'll race to win for us, but I'm not going to hold my breath. Apparently money and/or pressure talks and ethic walks, and I think we're getting stomped on.

MR. DOZIER: Thank you, ma'am. Our next speaker is Greg Coleridge.

Yes, the Court Reporter is asking a reminder, and I haven't been doing it, for people to spell their names.

MR. COLERIDGE: My name is Greg Coleridge spelled C-O-L-E-R-I-D-G-E. I'm the director of economic justice program of the Northeast Ohio American Friends Service Committee, which is a Quaker social action organization.

The first thing I would like to enter into the public record, if I might, the transcripts -- transcript of the hearing, public

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hearing that was held January 25th in Uniontown, many of you attended, that was sponsored by EPA, the ombudsman Bob Martin and Hugh Kaufman. This is the full transcript, and I'd like to pass that along.

Many people we work with and support our work live in or near Uniontown and the IEL. For the past two and a half years we have tried to support the Concerned Citizens of Lake Township and Lake Township Trustees in their experience to learn the truth of what is there literally at the IEL and then take appropriate actions to remove the dangers to the community.

I stand here this evening to voice my opposition to the proposed changes to the IEL cleanup plan. While it may be technically correct to say these changes are proposed by EPA Region 5, it is probably more of a reality to say that these proposals originated with the polluting corporations. It was, after all, reiterated what has already been said several times this evening.

Representatives of the polluters who took the lead in both the 1997 and 1998 testing rounds, EPA Region 5 permitted, in fact, the

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polluters in 1997 to send water samples to their own noncertified labs but would not provide samples to the community.

The 1998 tests were also lead by the polluters with minimal direct oversight by EPA employees. I believe Mr. del Rosario was present for a whole two or three days of the two weeks. There were no core samples, no testing for radiation, no double blind tests.

Letting polluting corporations take the lead in testing to determine contamination at IEL which will affect cleanup plans and the cost of those plans is like letting the tobacco corporations test and determine whether smoking causes cancer. It makes no sense.

It is a fundamental conflict of interests, it provides no checks and balances. It violates the public trust and threatens the public interests.

When did the people turn over our authority to protect public health to private corporations? When did the public give permission to public agencies like EPA to lay down and allow private interests of corporations to be superior to the public interests of

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citizens?

Given this public unaccountability over corporations, it is no surprise that test results contradict earlier findings of those who have already been mentioned this evening.

EPA's own staff like Linda Kern in 1995, EPA scientific internal experts like Mary Randolph in 1998, it's too bad she couldn't be here this evening, and Ohio EPA staff Larry Antonelli, who concluded that natural attenuation together -- all of these individuals concluded that natural attenuation is either not happening or should not be considered as a cleanup remedy.

What is unclear to me in all of this, the puzzling fact is to what extent up to this point EPA Region 5 leadership has fronted for the interests of the polluting corporations and what extent it has fronted for the U.S. military.

A recent FOIA, meaning Freedom of Information Act Request, that I've been receiving information regarding dumping at the IEL produced a packet of materials, not from the Army, they had seemed to route everything through EPA, containing evidence that the Army did dump something, at least something at the IEL in

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1970.
The packet also showed that the region sent requests for information on radiation to only five agencies nationwide, only five out of what are invariably hundreds of branches of the U.S. Army nationwide.
How hard did EPA really try to get to the bottom of what may be at IEL concerning radiation? This is to us significant. Since we have heard eyewitness testimony both a couple of months ago at the hearing sponsored by Bob Martin and Hugh Kaufman as well as this evening that vehicles bearing radioactive markings entered the landfill after hours or during hours.
If there is radiation here, can it naturally attenuate? If so, how many years, decades or centuries will it take given the half-life of some of these materials? And what do residents do in the meantime?
There is something called the precautionary principle that I believe is relative to this situation. This means that when human health is in doubt the appropriate response is precaution, not risk. If one is unsure of what to do, one doesn't risk an action or series

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of actions that will jeopardize human health in the long-term.
As has been mentioned this evening, the burden of proof falls on polluters and all others who claim that the toxins at IEL have just disappeared, which even their '98 data results for benzene and other chemicals simply do not show.
Finally, I would like to present a letter. It is actually a Freedom of Information Act Request. I kindly ask for it be forwarded to Michael Shumaker, the Freedom of Information Act officer at Region 5. I would like to present this letter to Mr. Thurlow.
It requests a document that a Region 5 staff person, who spoke to you a couple of weeks ago, said Mr. Thurlow, who is the Region 5 attorney over IEL, now possesses. From what I was told the document shows that the Army sought guidance from U.S. EPA to release information it had on radiation at IEL. This EPA staff person in Chicago said that the U.S. EPA forwarded the request to Mr. Thurlow.
This EPA staff person also said the document made reference of some sort by the Army

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to withhold a portion of what it had on this topic at the IEL, that being radiation.
I'm certain that the public here would very much like to know about this and any noted related documents.
We look forward to response by Region 5 within the next two weeks as the law deems us. Thank you.
(Short recess was taken.)
MR. DOZIER: Again, our next speaker is Marcia Zawacky.
MS. ZAWACKY: Good evening. I've been watching this for a long, long time from down at Canton, Ohio.
My name is Marcia Zawacky, M-A-R-C-I-A, Z-A-W-A-C-K-Y. I live on Harrison Avenue, Northwest in Canton.
Extremely concerned about this. I have a few brief comments. I hope that it strikes some people's hearts, I really do.
Dejavu all over again. You see in parallels here. Does anyone remember the Love Canal? Okay. I think the government finally bought that, right? How about the cigarette companies that deny their product was harmful

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until someone on the inside gave out the critical information that was needed to bring the cigarette companies to task.
Do the recent closed-door meetings with the polluters and the ultimate decision by the U.S. EPA remind you of the Olympic committee? Right.
Here's the punch lines guys: Remember all these entities were ultimately exposed and an extreme remedy occurred or is occurring? Give up the denial and the stonewalling, okay, and get busy and fix this situation for the citizens that are being affected now and so the future generations for whom we are role models, all right, will learn to act in a responsible way.
MR. DOZIER: Thank you. Our next speaker is J.E. Farley.
MR. FARLEY: I'll pass on any comments, just a question.
MR. DOZIER: Well, wait, if we're going to -- I want to make sure that we get on the record, please. State your name.
MR. FARLEY: James E. Farley, 8832 Cupid Circle in North Canton.

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I'll pass on the comments, but I have a question. Will --

MR. DOZIER: Address it.

MR. FARLEY: Will we receive a specific answer to this great discrepancy in view of the condition of the site?

MR. DOZIER: Question was are they going to get answers to the comments that were submitted tonight?

MS. GAWLINSKI: The answer is a definite yes. And as I mentioned at the beginning of the presentation, all the comments that we receive tonight and in writing through April 11th will be answered in writing in a document called the responsiveness summary, and that will be made public along with the record of decision. So the answer is, is a definite yes.

MR. DOZIER: Just a follow-up, will that be mailed to people or will they have to write and ask for a copy of it?

MS. GAWLINSKI: Well, we put copies in both of the repositories. If anyone would like an individual copy, I will send that to you directly. And I guess what I can do is start a sheet in the back of the room and as you exit --

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or actually I'll have you put a check mark next to your name on the sign-in sheet if you would like a copy of the full responsiveness summary, and when that is prepared I will send each of you a full, a full copy of that. Does that sound good to everyone?

AUDIENCE: Yes.

MS. GAWLINSKI: Okay.

MR. DOZIER: That may be a fairly voluminous document so maybe not all of you want to get it.

Our next person who signed up is Dave Martin. Mr. Martin.

MR. MARTIN: Dave Martin, no relationship to Bob. I'm actually from Columbus, Ohio, and I'm not affiliated with any group there, but I think I speak for a lot of people in the central Ohio area.

And the reason why I came up here was to see exactly firsthand what was going on with all the people concerned and the area residents.

We had a three hour talk show about three weeks ago on one of the most popular and most listened to radio stations in the whole state, WTBN. And it was all about the

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environmental problems all around the state and even, in fact, all around the country, and it was -- I experienced it here, people calling in around the state with all kinds of different questions and different problems and a lot of cases unaddressed.

Now, I've attended a lot of different EPA hearings concerning different issues around the state, and I know that the Ohio EPA has a lot of fine people working for it so when I criticize them, I don't want to be taken personally because I'm the speaker in that regards, but the Ohio EPA in the past eight years under Governor Voinovich has been an absolute disgrace. And when you make a statement like that, you got to be able to back it up.

Well, I have some stuff here that I think will back it up, and this all relates to my questions and I think a lot of people's questions on what's going on here today.

When I say it's been a disgrace, why is that? Well, when you read articles around the state like this one from the Cleveland Plain Dealer, Sunday, December 28th, 1997, "Ohio Relies on Factory Inspections. More than 1,000

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Companies Operate Without Air Permits." This is the type of thing that the Ohio EPA has let go on for a number of years. This is just one instance.

You start looking at these articles, "Pollution Permits Overwhelm Ohio EPA." It's the same thing, "U.S. EPA Has to Look at Elyria Plant Let Go By Ohio." This is all about companies spewing out pollution in unbelievable amounts, whether it's air pollution or water pollution.

"U.S. EPA Says Air Polluters Lacked Permits." Well, we know that. If you go over these articles, time and time again it's all these companies, especially in the northeastern part of the state, right up in your area, that are at fault. And when you come and do a little bit of research you find out there's been a lot of controversy involving the Ohio EPA and the conditions that are supposed to monitor things.

Now, I've got an article right here from December 3rd of 1998, "U.S.," which is United States, "EPA Sues LTV Over Repeated Violations." So, I mean, this is all current stuff and things that are affecting everybody,

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and the reason why I bring it up is because I think it shows a pattern.

The Ohio EPA has been very lax in monitoring big pollutants, and when the Ohio EPA says they're going to be involved and they're going to monitor the situation up here, I think everybody has the right to question that, what exactly does that mean? If you go by the past track record for the last six, seven, eight years, it hasn't been diddly squat, I can tell you that.

Now, some other things to document exactly what I'm saying when I criticize Ohio EPA, the corporate dispatch did a real in-depth study just about the problems around the state. This is from October 10th, 1998, front page, "Poor and Powerless, Ohio EPA Finds Pollution but Rarely Cleans It Up."

Now, I mean, this is all documented facts. And I think when you start to look and see, you talk about here, "Toxic Chemicals Removed From a Sandusky Marsh Despite a 17 Year Study." How long do you have to say something before you finally decide it has to be cleaned up?

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And, of course, they've got pictures to go along with these articles, and believe me, when you read these things it's an absolute disgrace. In the meantime you've got kids in families all around the state that's dealing with leukemia, okay, and cancer, which you guys are well aware of right here in the state.

And you read an article like this, "Ohio's Toxic Tally, Ten Cleaned Up, 1,192 To Go." Yeah, it's mind-boggling.

So, you know, like I say, I have real problems when the Ohio EPA says they're going to monitor something because we see their past record. Well, that's enough about the Ohio EPA.

And I won't even mention the fact that -- well, I guess I will mention it, that now we're finding out where they've been nailing people that supposedly have been falsifying reports to the EPA, jury actually convicted a guy, this is concerning water pollution. So, like I say, I could go into more details, but I think I pretty much made the point on Ohio EPA.

Now, when you start talking about the federal EPA, and, you know, the people I've met up here have been real classy people and they've

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been real nice and I met with them yesterday to try to find some information and I have no problem with them, but when you start to look and see what's going on around the country, it's mind-boggling.

And when I find some articles like this one I'm looking at right now, this is from the Boston Globe, January 17th, 1999, "Air Survey Cites Toxicity, EPA Shelves Data Release." Well, why do they shelf the release of this document that is talking about just how bad the air is, et cetera, et cetera? Well, because the U.S. Conference of Mayors gave the EPA second thoughts.

So the bottom line is that you give some people some power or influence, all of a sudden things start to get swept up under the rug and things start to get covered up, and that's a pattern that's real documented.

Now, when you start to look and see little stories that to me are mind-boggling -- I've got a story right here from the Houston Chronicle, and this is right in your back yard, front page of the Houston Chronicle, November 29th, 1998, "A Cancer On The Land." Now, guess

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who in the heck they're talking about? They're talking about your friends right up here in your back yard, B.F. Goodrich, General Corporation, et cetera, and they're talking about this PVC resins that is afflicting pain and suffering on this Ohio town. They're talking about the number of people that work at these places and how they're getting cancer and sick, et cetera, et cetera.

Now, I do know that some of these former companies, now they're hightailing out of Ohio and heading down to North Carolina to set up their new corporations, whatever, and that's not surprising.

But I've done a lot of research now, and this is on the federal level, you find out that there's all kinds of groups just like you guys that are fighting pollution and what all it's doing to them.

I've got a story right here out of the U.S.A. Today, "Tribe Fights Toxic Giant." It's the same thing, people coming down sick, dying, et cetera, et cetera, and the U.S. EPA, these other agencies have done just about very little to help them out.

And, you know, I got an article here,

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"Nuclear Plant's Neighbors Lose Patience With Cleanup." It's the same story. Now, why is this a problem I should be worried about? Okay. Well, when you find out now that doctors are starting to report this thing -- and here's an article from the Tennessee paper, "Agencies to Discuss Illnesses."

Now you've got reported details of illnesses nationwide, and this is all about the hundreds and hundreds of people, documented cases of people who are coming down sick from these nuclear weapons depot sites.

And like I say, I've got the articles right here, and it's the same old pattern where, you know, they're saying, we'll do more testing, more studies and more this and that, and in the meantime a lot of people are going down the tubes and I think that's crucial.

I want to try to bring it on into how it really affects the people here. I have problems where there's any type of closed-door, back room deal being cut. It's saving the big money boys a lot of cash, and we see that all the time out here.

And when you know that the big

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corporations are joined at the hip and the politicians, I mean, it's the same guy that's giving them all their campaign money to run for office, whether it's the senator or governor or you name it. You start to see how things are done on a scale that's kind of scary.

Now, when I see an article like this right here, and I think this really kind of brings it here at home, "Professor Detects Radiation in Sediment on Ashtabula River." The EPA claimed there wasn't any radiation there.

In fact, they had the plans about 90 percent complete on a dredging, and this professor on his own got out on his kayak and done his own testing and guess what he came up with? He found radiation.

Now, if you read this article, I mean, the one lady is pounding her head on the table and she's all shook up and of course they're all shook up, but this threw a big bone wrench in their plans. It's going to cost them, you know, between 35 and 40 million, they don't know how much more, to clean up this problem.

That's when I have problems because you have a toxic waste site like this and they're

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trying to tell everybody and me or whatever this thing is going to clean up by itself. You know, I find that just mind-boggling.

I mean, a lot of times you think we're stupid out here in public but we're not. So I will just say that what I think needs to be done, I think there has to be a lot more in-depth investigation done probably headed by Bob Martin, no relation. And, you know, let's take some of that money that these corporations want to save, put that money in Bob Martin's hand, let him do a first-class investigation and maybe then we'll have some answers and get this problem cleared up. Thank you.

MR. DOZIER: Thank you. Our next speaker is Rebecca Adelman.

MS. ADELMAN: Hi, Rebecca Adelman, A-D-E-L-M-A-N. Do I sound all right on this? I'm nervous. I live at 12022 Lagoona, L-A-G-O-O-N-A, Circle.

I have a father who was a former CEO for Goodyear, a sister of the Department of Defense. I have a brother-in-law in military intelligence, a mother -- sorry. A mother who was working with NEOUCOM and facilitates students

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with cancer.

I was 18 when I bought my house, I'm 23 now. In '90 I asked about the water, What is the water like in Uniontown? I was told by an EPA employee, actually Linda Kern specifically, said the water was okay. Residents in my area that worked for rubber companies then took a glass of water into the company lab and said behind closed doors, I personally need to know what is in my water. They told her, the company, the PRP lab told her specifically the water is dangerous. It is toxic. Move. This is what the company said to her.

They also said, which I'll never forget, is that no one will test for this stuff. I didn't believe -- I believe the water helps us, I truly honestly believe this water is a health risk to our community.

I put a petition together in the back, it's on the table, against the natural attenuation process. Those of you feel free to sign it.

Also last but not least, correct me if I am wrong, I have the studies on the actual health effects that the landfill has been on the

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citizens. I'm sorry, but I have a one and a half year old son waking up looking like he's been burned. When I wake up looking like that -- it's not you guys going to the doctors, it's me, but do you know what's scary, it's not just us, it's a whole community. What you're doing is not working. I'm sorry.

I put a health data survey together to take up on my own. I will be walking around every night speaking with the citizens of Uniontown talking with them about the owners. I have a write-up up sheet here that provides sufficient data that there are classical illness clusters within the community that require attention by all parties involved. If this is the case avenues will be explored on how to provide optimum health options meaning grants and whatnot.

My mother, who worked at NEOUCOM, also worked for the health department, stated she would be more than happy to help us obtain grants. All information on this issue will be made public. I will personally see to it that everyone in Uniontown has a copy of this because it's, it's scary. It's scary. It's scaring me.

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One morning my son woke up, his whole side was red. It looked like it had been burned, blisters, blisters, peeled. The next day I woke up the same way. We went to the doctor, this is a doctor who worked for Akron Community Health Resources who has gotten Akron grants in Kaiser Permanente, this doctor, Dr. Powell, who also signed the petition back there after, after just reading your letter, not the information I had, Dr. Powell willingly signed this petition from reading the EPA's letter that they sent out.

He willingly signed it. Do you know why? Because he said if this is happening, if it is above federal water standards and you are -- here, do you want to look at it? Right here, see the 1998 results, that will ruin our standards.

Dr. Powell, who works for the City of Akron, stated if this is within a couple miles vicinity of your house this is a great concern. He wants me to bring my son in to do some blood tests. He encouraged me to go to a toxicologist, Dr. Drucker, up at University Hospital. This is serious guys, and I'm not against you, but I really hope you'll be seeing him.

When I have a sick baby and I can't

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find a shirt to put on his one and a half year old baby, and the doctors look at it and they look my way and they said, Oh, my God, it looks like you've been burned. I have never in my life seen anything like this.

I mean, I'm an adult, I can handle it but see, my baby doesn't. I can't do that to my babies.

So I will provide the results of the data report, our health data survey, to everyone including EPA, the attorney, including the companies and Bob's attorneys if they're interested in this case.

Thank you very much, and please, please, I can't see my family hurt. By the way, I drink the well water, I can't afford city water.

MR. DOZIER: Thank you. All right. Our next speaker is Kathy Magel, M-A-G-E-L. Did I pronounce that completely off base?

MS. MAGEL: It's pretty good, Magel.

MR. DOZIER: Magel.

MS. MAGEL: Yes. I am Kathy Magel, M-A-G-E-L. I'm from North Canton. I'm not a member of CCLT, I've never met anyone before.

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I'd just like to provide some information. I contacted Miss Borello as a fellow band parent from North Canton, and I asked her if she could supply me with any specific information of which chemicals were suspect in the dump that she was concerned about and at what levels. She provided me with an abundance of information.

My family drove this material to the very man who had a hand in the man-made plutonium isotopes that's in question, plutonium 239, and, yes, he was involved in the toxic nuclear test.

So after, he noted from this that plutonium 239 was somehow 92 feet deep in Uniontown, Ohio. He knew it was a nuclear waste dump, either that or Dr. Oppenheimer and Dr. Einstein should not have asked him to invent this plutonium 239, they should have said, Go up to Uniontown, they have it in their soil. If plutonium 239, which it appears is in Uniontown, it is a nuclear dump, it is. There's no other way it got in there.

So for proof I offer you this. This is a publication from Los Alamos concerning the plutonium -- the Manhattan Project, and you'll

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see Dr. Magel's name all through this book, and it will attribute plutonium 239.

Okay. You're free to discuss this, how it was invented and how his name's all over it, you're free to copy that.

Dr. Magel upon his inspection of the CEP report was alarmed that this particular mix of chemicals lead to a nuclear waste, which, of course, he knew it was, and he demanded to know why EPA disavowed the CEP's results.

Independently of CCLT, which I am not a member of, I contacted CEP, got a hold of Mr. Mohler, M-O-H-L-E-R, and I asked him to contact Dr. Magel from scientist to scientist.

The two of them directly spoke via phone. The subject matter centered on the testing procedures that Mohler used that the EPA men said that they didn't -- they threw out his results. Mohler strenuously defined -- defending his representation and insisted that the nuclear material, which he had said nobody would ever test for, it was in Uniontown, and Mohler said he was framed.

Dr. Magel asked not only for the results of the CEP but he wanted the workup, he

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wanted to know the test procedures used, and Dr. Magel wanted to have his own viewpoint of issues and results that had been thrown out.

It turned out Mohler indicated that all the workup material was unaccessible and it was in a judge's office. Dr. Magel was worried of a cover-up since logically wouldn't EPA flaunt any errors in the workup rather than allow them to be hidden?

Mohler admitted the error of one technician that did not subtract background on a few of the specific tests, but, then again, background should be minimal.

Knowing how serious disposing of all the chemicals at the Manhattan Project was the scientists provided proper methods of disposal prior to even inventing these materials.

My father-in-law will assure you that one of the methods from the Manhattan Project did not involve dumping in Uniontown, Ohio, which is five miles from where his granddaughters were brought up.

This scenario was very -- he was concerned and he drove to Uniontown and he met with Chris Borello personally for a personal tour

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of the dump. He saw the barrels, he saw where the gas was. I was not involved on it, the two of them went. And he knew that this was a dump site.

He went back and reviewed the material from the CEP report and now suspected a core uranium source found in Africa and is highly dangerous, which is not found in Ohio.

At his yearly medical physical Dr. Magel brought in copies of this material to the current nuclear scientists at Los Alamos laboratories, and they also agreed, concurred with Dr. Magel's recommendation that he wrote a letter to Senator Glenn, number one, no cap; two, absolute removal of this, removal; three, at least have core samples so you know what you're dealing with.

So he also warned that the residents of Uniontown, if this happens we're in grave trouble, and I don't know who in the back said that they drink this water, but I will tell you I'm his daughter-in-law and along with his son and his two granddaughters absolutely told me never drink that water.

All right. You said something about

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-- I think you did, like I said, I don't know, that if you feel that in five years you saw something -- oh, okay. If you saw something in five years you might take a look at it. Okay. Well, he sees something now. He agrees with whatever his brother, whatever that man's brother saw, that's what my father-in-law, he says this needs to be -- no cap removed, it's dangerous right as it is right now.

Now, Dr. Magel is available to advise the EPA of the dangers of this chemical mix and can provide you names of an unbiased laboratory where you can get your water tested. Please contact CCLT or me or the -- what is it? This is Lake, Lake Trustees and they can get a hold of me, but we'll make sure you get this water test properly in unbiased true results. This is simple and not costly.

His work was so valuable it was not released to the public until the 50 year Freedom of Information Act was applied, and I swear to you his son wasn't even -- his son didn't even know of his contributions. And by the way, it's irony that all Dr. Magel's kids were born in Woburn, Massachusetts.

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Okay. They both -- he and his partner, both Dr. Magel and his partner are still very active. They sign autographs, they still lecture, and if Dr. Oppenheimer and Einstein can reject them, I think you should.

I think that maybe -- he is available to speak to any and all of you, and he'll tell you about what chemicals are in there and what they're doing, he'll take the time, I don't think he would charge you. He'll let you know what you're dealing with, and I'm not drinking this water.

So, again, if they think it is good enough I think you should, and he does not have a political agenda but he does have a strong technical support you were talking about.

I was wondering, Mr. del Rosario, you were talking about the Technical Information Committee, I was wondering if Dr. Magel could be part of that and if he could monitor it so we would know what was going on?

MR. del ROSARIO: We'll definitely take that into consideration, ma'am.

MS. MAGEL: All right. Thank you very much. The only reason why I ask is this is

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because Mr. Antonelli, which I agree with him, I know what he's saying, he said that the Ohio EPA represents the state's interests and I'm sure you do, but I think Dr. Magel would be representing his granddaughters' health issues and I would like you to honor it. Thank you very much.

MR. DOZIER: Let me just say in front of everybody so, EPA has asked me to ask Miss Magel if they could take the book and Xerox a copy and then return the original to you, is that all right?

MS. MAGEL: I'll discuss that with them.

MR. DOZIER: Okay. You can talk to them.

Okay. Our next speaker is Mark Nixon.

MR. NIXON: My name is Mark Nixon, N-I-X-O-N, I live at 10525 Newbury, Northwest in Uniontown.

I have a question for anyone in the government representatives before I make my comment. Can, can anyone tell me the dates or approximate dates when the testing was done that showed that there was radial water flow from the

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landfill?

MR. DOZIER: Can anybody answer that or can anyone respond for the record?

MS. VANDERPOOL: My name is Luanne Vanderpool, I work for U.S. EPA in Chicago. I'm a geologist on this site.

I cannot give you a specific date off the top of my head. I can certainly look those up, however, every time a water sampling event has occurred, which has happened a number of times, water levels were measured and the radial flow was probably seen. Every time I've looked at the data that's what I seen. I know additional times water levels have been taken independent of the sampling events.

MS. FABINSKI: Luanne, there was also the --

MR. WITSAMAN: One second, can I answer your question specifically?

MR. DOZIER: From the back of the room there's an offer to answer your question specifically.

MR. WITSAMAN: I have the report from the United States Department of Interior, Water Resources Division, and this is from Barron

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Norris. Let's see, it's 1989.

MR. DOZIER: Okay. 1989 from the cite of U.S. Interior Department, USGS report. We have more information from Ross.

MR. del ROSARIO: My name is Ross del Rosario. There is an updated report from the U.S. EPA, I think it was dated 1994. I will be glad to give you copies if you need it.

MR. DOZIER: So in addition to the 1989 USGS report there's a 1994 one.

MR. NIXON: I believe this is worth it to me because in 1995 we were making plans to move, and we wrote to the EPA to see if we could get a copy of the EPA report because we knew about the landfill. We were actually from Canton, we knew about the landfill, and we were concerned about possible contamination of well water.

So we got a report from the EPA which told us that the flow from the landfill was north and northwest. We bought a house two miles south of the landfill assuming that our water would be safe based on that report from the EPA.

Now we are aware that the flow is radial. If I lie to my government on my tax

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report I can go to jail, but my government can lie to me.

MR. DOZIER: The next person who is signed up is William Franks. William Franks. He has left. Is there a William Franks here?

Hearing no one, the person after that is either Marlen or Harlan, I can't tell if that's an M or an H, I think it's an M, Marlen Coleridge. Is it Marlen or --

MR. COLERIDGE: Harlan.

MR. DOZIER: Harlan, H. Will you state your name and spell it for the Court Reporter.

MR. COLERIDGE: Yeah, Harlen, H-A-R-L-A-N, Coleridge, C-O-L-E-R-I-D-G-E.

Well, folks, I don't have any prepared text, I'm just a common citizen. I live seven -- no, I'm sorry, 9.73 to 9.76 miles from the dump site. See, I measure every time I come through Uniontown.

I was looking at this chart over here and it was interesting, the gentleman over here from Chicago had mentioned about the cleanup site, and nobody addressed the thing about the barrels.

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And another thing is I have well water. Now, I've lived where I live down behind the airport for 14 -- about 14 years, and I'm scared to death every time I drink water, because I have well water, not knowing for sure. And it boggles the imagination that this has been addressed in the papers a couple times, it's been addressed here, why tests can't be taken, five or six different tests. I personally would pay money out of my own pocket to have a test taken anywhere in Uniontown, and I'm sure other people here would do the same thing. Five or six different tests at five or six different independent accredited testing labs and to see what they come up with.

Now, you won't find cadmium or radium and plutonium if you're not looking for it, but if you look for it, according to what the lady just said there, you'll find them, but you see, that's the worst thing the corporations want to happen because if they find that then they're liable, and we're talking about hundreds of millions of dollars in liability. And that's what it all comes down to, I don't care what anybody says, that's what it all comes down to.

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So the point is, what do we do about it? Everybody's sick here and we talk about it, and everybody's going to go home, these people are going to get in their cars and planes and go back home, nothing's going to happen. Well, I'll tell you what I'm going to do about it. I'm in the process of writing a couple of letters, it might not do any good, I'm going to send one to 20/20, I'm going to send one to Dateline, I'm going to send one to 48 Hours.

Now, everybody else has done it, nothing will happen, but maybe if enough stink is put up maybe somebody will come out here and see what's going on and put some heat on where it belongs because just talking about it doesn't do any good.

If you look back in the history of the labor union, unfortunately when things are done it's unusual things, violent things like riots, I'm not condoning them, riots and things like this, but then people do something because people don't want to sit on their rear end.

They're forced to make a decision. Unless somebody's forced to make a decision nothing's going to happen. I can almost

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guarantee it, nothing's going to happen.

This thing about attenuation is a colossal farce. You know, if there is plutonium over there, plutonium only has a half-life of 240,000 years, that's all, just 240,000 years. So if some of that is irradiating in the soil and in the water we're all getting it. It won't kill you now but 20 years down the road it will kill you or your kids or somebody else.

So I don't know what the answer is, but I feel like at least I can say something, do something, make a little bit of difference. Maybe it might make a difference, probably won't, but you got to try somehow. That's all I got to say.

MR. DOZIER: Thank you. Our next person to sign up is John Ondick.

MR. ONDICK: Yes. my name is John Ondick, O-N-D-I-C-K. Do you need the address? 1144 Scenicrest Street in Uniontown.

I've lived in Uniontown since 1974. I've watched all this and haven't said much, but periodically for some reason I've just got to mouth off.

First I would ask the facilitator of

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the meeting a better way to select speakers would be to draw names from the hat and pull at random. I listened to all the long-term, long-winded people and they've left. I feel somewhat slighted that they didn't stay and listen to me.

I have a series of short questions. I don't want to spend much time, but I would sure like some answers. Did the so-called, quote, polluters, unquote, to anything illegal during the time they were dumping at the dump? Were they in compliance with the federal, the state, the county, the township laws and regulations?

MR. DOZIER: I think he wants to answer that.

MR. THURLOW: Let's just say I don't know that they did anything illegal. I mean --

MR. ONDICK: Were they dumping legally?

MR. THURLOW: I don't know everything that has been dumped however, but I'd say -- the point you're making is there weren't standards at that time that we have now and that's right, so maybe it may have been perfectly legal to do things then that it would not be legal to do now.

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MR. ONDICK: I wish someone would put that in the newspaper. I worked for one of the companies at one time, I have no affiliation with them now. I object strongly to calling them polluters, they were doing it legally. The township, the county were probably dumping in there. I lived in Tallmadge, I know my trash was going in there from my hauler.

I think I read somewhere that there were in excess of 3,000 people that can be proven or 3,000 companies that could be proven that dumped there.

For what it's worth, I drove here on tires tonight. Unless some of you people walked you all came on tires. They're made by these rubber companies, your neighbors.

You're buying a product and making a product, and they have to create this stuff. They had to do something with it. Unfortunately it was in our back yard, but it was going to go somewhere and today we're taking care of it in different ways, maybe, maybe not.

My next question would be based on the new recommendation with the new type cap, can anybody tell me the weight of the soil that's

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going to be used for this cap in probably tons I guess would be easier or give me a close estimate?

MR. DOZIER: How much does the -- do you have an estimate on weight or maybe yards of soil for the new cap? If not, we can get some facts on it.

MR. del ROSARIO: I probably would like to defer that question to the contractor who is designing the cap, Bhupen Gandhi.

MR. GANDHI: My name is Bhupen Gandhi. We are talking about a device cap that is going to have a 12-inch base that will have a flexible member lining and 8 inches of soil cover and six inches of topsoil. All together we are looking at about 450 to 500 pounds per cubic foot.

MR. DOZIER: And how many cubic feet?

MR. GANDHI: Pardon me?

MR. DOZIER: And how many cubic feet?

MR. GANDHI: One cubic foot -- at least one cubic foot total weight we're looking at in one square feet area, one square feet area

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with the height we'll get about 500 pounds of weight.

MR. ONDICK: Like maybe a quarter million tons or --

MR. GANDHI: Well, we don't have the exact volume we're looking at. There is a substantial amount of volume so all the landfill will have substantial weight, but what you have to look for is, like I said, 500 pounds in one square foot area.

MR. ONDICK: Okay. If everybody can hear me, I think I have another question that he'll want to answer. It's what I call, because I'm not technically versed, what's the squeeze factor? If we put these hundreds of thousands of tons on top of this and weight it down, what happens to this so-called plume that shrunk? Is this thing going to mushroom out?

MR. GANDHI: There has been some allegations by some of the publications that we have read that it is going to be squeezed out.

We are looking at 500 pounds of weight additional over the -- anywhere from 30 feet to 60 to 80 feet depth of soil monitors, which is not as heavy as the regular soil, but

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there is already that much weight and on top of it we are putting 400 to 500 pounds. That's not a lot of weight over the entire landfill that we consider per square foot.

MR. ONDICK: Well, I probably occupy maybe six square feet, so if you're going to put 3,000 pounds on me I'm going to squish. Enough with that.

When we do all this, if you believe in natural attenuation you believe in microbes, will this block the water and the oxygen that what I'll call the caps plugs need to live and keep gobbling this stuff up?

MS. VANDERPOOL: Luanne Vanderpool again. The simple answer is, no, it will not. There is groundwater flowing into the landfill from the north which will bring water and bring oxygen, and the truth of the matter is many of the processes in the natural attenuation, in fact, do not need oxygen, do not want oxygen.

MR. ONDICK: Okay. Can any one of you tell me how much methane currently is being vented? If you could give it to me and like how many houses could I heat tonight with it.

MR. ANTONELLI: Larry Antonelli of

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the Ohio EPA. We currently operate the active methane venting system out at the site, it kicks on about every two hours for about 15 minutes.

And the parameter wells are monitored, I can't give you an estimate on the generation, however, the concentrations that are detected are in the range from one to four to we have seen as high as nine percent of methane by volume.

MR. ONDICK: Is there enough coming out that you can heat a house with it?

MR. ANTONELLI: I can't answer that question, I don't know.

MR. ONDICK: So we don't know whether it's giving off as much as a herd of cows up on Route 43?

MR. ANTONELLI: Correct.

MR. ONDICK: Okay. Well, I guess I won't worry about the methane.

Okay. I would also just like to point out a few facts, and I'll get out of everybody's hair. The Exxon Valdez, that poor company spent billions of dollars on a cleanup that was basically worthless, nature is taking care of it now. Somebody mentioned the Love

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Canal, they're building houses on top of the Love Canal now.

I personally if I was a PRP I'd refuse to pay for anything else. I don't know what or how involved the four companies are supposed to be stuck with this whole thing. As a taxpayer I take offense at having to have our local companies that have a lot of employees here on the payroll bear the burden of this, whereas a taxpayer contributing to the federal blue dial that pays for removing and cleanup and everything else in the United States, let's let the people in the rest of the country help pay for this.

And my last point, and I guess I feel pretty strong about this because I've wrestled with this, people in this room, I'm sure there are some that smoke, I'm sure that there are some that drink, there's some that ride motorcycles, a lot of people probably drink bottled water. Puree was trying to kill half the world a couple years ago.

Bottled water would be worse than whatever this other jug was up here. I know that for a fact, I've had rangers out west tell me don't drink the river water. There's no such

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thing as pristine river water. It may not have heavy metals but it's loaded with bacteria because bears piss upstream, those were his exact words, and there is no pure water.

If you ever went to Lake Rockwell, I've heard the Akron water facilities, if you saw what came through that lake before it went in to be purified as drinking water you'd probably stop drinking city water, too.

But take a good look at yourself in the mirror in the morning when you get up and ask yourself if I really believe half of what I've heard tonight and it really bothers me and I'm committed to doing something about it and look in that mirror and ask yourself, Why the hell am I living here?

MR. DOZIER: Okay. Our next speaker is Jeff and I can't read it, maybe Prichard, P -- yeah, Prichard, I believe. You coming, Jeff?

Okay. Then the last speaker is Darleen Lansing.

AUDIENCE: Can we add a speaker?

MR. DOZIER: Yes.

MS. LANSING: Can you hear me? Okay. My name is Darleen Lansing,

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L-A-N-S-I-N-G.
I first moved to Uniontown in the '70s, and I lived in Hidden Knolls at that time, which was a mile and a half southwest of the landfill.
After living there five or six years I heard reports, like Ms. Adelman did, of a baby up on the corner of that allotment whose skin was burned, of a baby who was a few months old that got melanoma, of people that had lived there about ten years started developing cancer.
I moved away, sir, but I developed cancer after I moved after living there 10 or 15 years. I've come back and now the same thing has happened again. Mrs. Adelman lives up the street from where I live, and she has the same problems in her house as we had in our house. My children were at the doctors every six months, and that's documentable.
Getting back to the water standards. Drinking water standards that have been released in the newsletter that I reviewed the other day, they're talking about drinking water, one chemical, they're talking about adults, they're not talking about children, they're not talking

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about babies, they're not talking about chemicals mixing together and being drunk or they're not talking about bathing, they're not talking about chemicals aerating and getting into the body other than through drinking.
They're not talking about radiation, making chemicals worse by synergy or making the health problems worse when we've had a chemical radiation mix.
I don't understand, if I went to a doctor and he told me I had a disease and he ran a test and said I had X, Y, Z, I went to another doctor to get a second opinion and he ran a test but he didn't test the same organ, he tested something else and said, You don't have X, Y, Z, are we going to leave it alone? No, I'd get a third opinion.
I'm very unhappy with how they've handled the radiation specifically. I don't understand why it takes 15 years of testing and we're still back where we were when I started looking into this in 1970 -- or 1980.
The other thing is, if there's really 780,000 tons in that thing, that thing's a chemical plant. It's not a landfill, it's a

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chemical plant. By law we would test a chemical plant, its gases, its influence every so many months. This thing has been tested, I don't know, not for two years now?
There's a flare there that bleeds gases off the top of that landfill, not just methane, other gases. Has there ever been any ambient air test done? When was the last one done? Once a year?
MS. BORELLO: One time in 15 years.
MS. LANSING: One time in 15 years. That garbage burner down in Akron which was burning and also had precipitators, this thing doesn't have precipitators, it's just burning, nothing to keep the chemicals down. That thing got shut down because it was re-forming chemicals and dioxin was going toward the Akron Beacon Journal so they got upset and they got it shut down. So we got to live out here where this stuff keeps coming and coming. I don't understand.
15 years we're back where we started from and nothing's been done. Natural attenuation doesn't work, we just proved it.
MR. DOZIER: Okay. This ended our

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formal request, but I want to make sure that we have every person who wants to speak have an opportunity to do that.
I also don't want to beat up our Court Reporter too much, so could you give her five minutes. I think it would only be fair to give her five minutes, and then we'll come back and continue taking comments until everybody here has had a chance to speak if they wish.
Okay. So we're going to take a five minute break.
(Short recess was taken.)
MR. DOZIER: All right. Thank you very much. We're going to go back on the record now. We have three more people who have signed up and requested to speak tonight. As soon as the noise dies down a bit we're going to have the first person come up.
Could I ask the people in the back of the room -- thank you. Okay. Joe, come on up. We have Joe Mosyjowski. Did I get it right?
MR. MOSYJOWSKI: It's close enough.
MR. DOZIER: And, Joe, if you could spell your name and your address for the record.
MR. MOSYJOWSKI: Yeah, my name is Joe

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Mosyjowski, M-O-S-Y-J-O-W-S-K-I, something like that. My address, 2615 Swartz Road, Hartville.

I think, you know, we've sat through this whole thing this evening, and I don't think anybody in this room would want to be in the seat of the EPA here representing from Chicago and Twinsburg. They certainly are in the hot seat, it's just the way it is, I guess it's their job, but this is addressed to them.

They still have a chance to go back to Chicago and Twinsburg, pretty impressive lawsuit, they've done a nice job and they should get their, you know, pat on the back. They can do this by, number one, raising them to the same accessibility to your technical staff or that the polluters have had. You can let them sit at a table when the cleanup plan is worked out. You can bring them the same accessibilities of the site as the polluters have had. You can bring them the blind core samples that they have been requesting for years.

You can represent the citizens of Uniontown first and foremost to your boss. You can work to identify what pollutes IEL. You can quantify them, especially the dangerous ones, and

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you can order them removed. If you do this you will really impress your boss and you will also be true American heroes. Thank you.

MR. DOZIER: Thank you. Thank you. Okay. Our next speaker is Lee Yoder. Thank you.

MR. YODER: My name is Lee Yoder at 9388 Market Avenue, Hartville.

My -- we've heard a lot of things said this evening, a lot of facts and figures, but my comments are more directed to the staff over here. And this is not personal, but I think it's become very -- one has become very angry and outraged at what is taking place here over the last number of years.

You people represent a system that we're paying for. Our money is going to Columbus and to Washington, and we expect a little more than this. We don't want to be insulted with these foolish solutions to deep problems.

Anybody with any intelligence can tell that these chemicals aren't going to leave with these poplar trees. That's an insult, and I think they should realize that the only solution is to get this out of here. Somehow we have got

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to -- you have got to convey this to your organizations that we want something done here.

There's people living here, there's properties that have been devalued through this, and we're not, we're not stupid enough to believe that this foolish solution is going to work. It will only get much worse when this gets into the soil, into the water and spreads far beyond here.

MR. DOZIER: Thank you, sir. Okay. The last person that I have on the list who has requested to speak is Tom Shalala. Tom, do you want to come up here.

MR. SHALALA: My name is Tom Shalala, S-H-A-L-A-L-A. I have lived in Uniontown here on Shawnee Street and I --

MR. DOZIER: Keep it close to your mouth.

MR. SHALALA: Okay. I practice environmental as my -- that's what I do for a living, and I've been in the field for about 15 years. I'm a certified professional with the Ohio Environmental Protection Agency and a certified professional geologist, and I'm involved with groundwater remediation projects as

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well as landfills -- landfill investigations here currently.

I don't come to you with an emotional speech. Most people do because they've lived here. I haven't lived here long. I am appealing to the EPA to evaluate the investigation before they put a final remedy to it, and once you cap the site you can say that you can revisit it but once a cap is on it's going to be hard to revisit the actual site.

If you want to put in monitoring wells, how are you going to put in monitoring wells on a site that's capped? Or if you want to put in recovery wells if that is a solution down the line, how are you going to do that when there's a cap in place? You'll destroy the integrity of the cap.

All I'm saying and all I'm appealing to you to do is complete the investigation. There's questions on the lateral extent of the contamination. There hasn't been any pump tests performed, and that is a critical way of determining the hydraulic and transquicities of the aquifer. You can do slug tests all day, but professionals, professionals in this room on both

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sides know that slug tests are debateable on the basis of history. Pump tests give you much more viable alternative, and that has not been done for whatever reason.

And if I went to my client and I told them, Look, I'm ready to clean up a site and they said, Great, great. It's going to cost you 13 million dollars but we're going to investigate it a little bit further. I think my client would throw me out of the room. They would say, Before you're going to spend my money you need to make sure that the selection that you choose better work.

And the PRPs, if they're going to foot this bill I would go to the EPA if I was them and say, If you're going -- if we're going to foot this bill you better make sure this thing is going to work.

And so I am asking that you all revisit the assessment to make sure that the site is adequately -- the extent of the problem is adequately defined.

As for monitoring, there's been a question by some of the folks, there's a question on very little monitoring that's done to

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determine the fate of the transport of the volatile on-site and the metals, and that is also something that should be done.

And then as for the cap, as I had mentioned, that will prevent water from infiltrating from the top but you already have contaminated groundwater that is going to flow through the site downgradient, and I'm wondering if any monitoring was done to determine what the new groundwater flow direction is once that cap is in place and there's no longer infiltration on-site itself, where is the groundwater going to flow after the cap has been placed?

So -- and then lastly, the issue of natural attenuation being the selective remedial method when very little studies have been done to show whether the bac -- number one, if there's any bacterial microbes present, whether those microbes have been affected by any kind of heavy metal contamination, which in high concentrations could be toxic to the microbes, and whether those microbes are effective in dealing with the certain type of contamination that's there.

So I guess my appeal to you is to fill in the data gaps in completing the

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assessment, then if that's what you come up with and you can present that without any doubt that is the best solution to protect the health and human environment, the environment, then great, but there's so many data gaps right now. That's all I have.

MR. DOZIER: Okay. Unless we have anybody of whom I am not aware who wants to speak, I'm going to turn this over to Denise Gawlinski for one last thing, and then we're going to close the record for tonight. Denise.

MS. GAWLINSKI: Thanks, Dan. Actually this was a question or maybe not a question but a request of Tom. When you were up here describing your background, it sounded like you were -- you worked for Ohio EPA, and I just wanted to clarify that --

MR. SHALALA: No, that's not --

MS. GAWLINSKI: -- you are not an Ohio EPA employee.

MR. SHALALA: That's correct, I work for a private company.

MS. GAWLINSKI: Okay. You work for a private company. I just -- maybe I just misunderstood you, but I just wanted to make that

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clear to everyone. Thanks.

MR. DOZIER: Okay. Thank you very much for coming. We're off the record. The record is closed. Thank you for everything everybody, you were very helpful.

- - -

(Hearing concluded at 10:25 o'clock p.m.)

- - -

CERTIFICATE

STATE OF OHIO,)
) SS:
SUMMIT COUNTY,)

I, Cynthia Holderbaum, and RPR and Notary Public within and for the State of Ohio, duly commissioned and qualified, do hereby certify that the proceedings were by me reduced to Stenotypy, afterwards transcribed upon a computer; and that the foregoing is a true and correct transcription of the proceedings so given as aforesaid.

I do further certify that these proceedings were taken at the time and place in the foregoing caption specified, and were completed without adjournment.

I do further certify that I am not a relative, counsel or attorney of any party, or otherwise interested in the event of this action.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my seal of office at Akron, Ohio, on this 10th day of March, 1995.

Cynthia Holderbaum

Cynthia Holderbaum, RPR and Notary Public in and for the State of Ohio.

FORM 123 WARRANTY DEED (To a Corporation) 98028064 FALLS LAW PRINT COMPANY

Know all Men by these Presents

That LUTHER J. PRICE AND BONNIE L. PRICE, HUSBAND AND WIFE

the Grantors,

for the consideration of ONE----------Dollars,

($ 1.00) received to the full satisfaction of

A. R. LOCKHART DEVELOPMENT CO., the Grantee do give, grant, bargain, sell and convey unto the said Grantee, its successors and assigns, the following described premises, situated in the Township of Lake, County of Stark and State of Ohio:

See Attached Exhibit "A"

RECORDED THIS DATE
JANE VICHOS
STARK COUNTY RECORDER
98 MAY -1 PM 3:10
FEE 18.00

INDEX	6
DESCRIPTION	Y
CROSS REF	

JANET WEIR CREIGHTON
Stark County Auditor
FEE 57.10

MAY 01 1998
TRANSFERRED 56
TRANSFER NOT NECESSARY
DEPUTY
IN COMPLIANCE WITH ORC 319.202

be the same more or less but subject to all legal highways.

EXHIBIT 1

98005322

98-0350 TR A JDF 5-1-98

To Have and to Hold *the above granted and bargained premises, with the appurtenances thereof, unto the said Grantee, its successors and assigns forever. And* we *, the said Grantors, do for* ourselves *and* our *heirs, executors and administrators, covenant with the said Grantee, its successors and assigns, that at and until the ensealing of these presents* we are *well seized of the above described premises, as a good and indefeasible estate in FEE SIMPLE, and have good right to bargain and sell the same in manner and form as above written, and that the same are free from all incumbrances whatsoever* except taxes and assessments not yet due and payable.

and that we *will* **Warrant and Defend** *said premises, with the appurtenances thereunto belonging, to the said Grantee, its successors and assigns, against all lawful claims and demands whatsoever*

And for valuable consideration LUTHER J. PRICE AND BONNIE L. PRICE, HUSBAND AND WIFE,

do hereby remise, release and forever quit-claim unto the said Grantee, its successors and assigns, all our *right and expectancy of* **Dower** *in the above described premises.*

In Witness Whereof, we *have hereunto set* our *hands, the* 27th *day of* April *, 1998, in the year of our Lord one thousand nine hundred and* ninety-eight

Signed and acknowledged in the presence of

Luther J. Price
LUTHER J. PRICE

Bonnie L. Price
BONNIE L. PRICE

State of Ohio,
~~XXXXXX~~ STARK *County, ss* } *Before me, a notary public, in and for said County, personally appeared the above named* LUTHER J. PRICE AND BONNIE L. PRICE, HUSBAND AND WIFE

who acknowledged that they *did sign the foregoing instrument, and that the same is* their *free act and deed.*

In Testimony Whereof, *I have hereunto set my hand and official seal, at* Akron, Ohio *this* 27th *day of* April *A. D.* 1998

This instrument prepared by

E. A. WIGLEY, ATTORNEY
511 N. Main Street
Akron, Ohio 44310

TIMOTHY J. WIGLEY, Notary Public
Residence - Summit County
State Wide Jurisdiction, Ohio
My Commission Expires Feb. 2, 2000

Warranty Deed

LUTHER J. PRICE
BONNIE L. PRICE

TO

A. R. LOCKHART

Transferred ____ 19 ____
COUNTY AUDITOR

State of Ohio
County of ____ } ss
Received for Record on the ____ day of ____ at ____ o'clock ____ M. and Recorded ____ 19 ____
Deed Book ____ Page ____

COUNTY RECORDER
Recorders Fee $ ____

EXHIBIT "A"

TKS From Par SPLIT 85W 5.11A TKS ACC 1/23/97

Situated in the State of Ohio, County of Stark, Township of Lake (T-12, R-8) and Southwest Quarter of Section 8 and being part of a 100.268 acre parcel now or formerly owned by F.A. & V.M. Price, the deed of which is recorded in Volume 4166, Page 11 of the Stark County Deed Records and more fully bounded and described as follows:

Commencing for reference at a 3 inch outside diameter steel pipe found at the northwest corner of the Southwest Quarter of Section 8; Thence S02°07'18"W, along the westerly line of said Quarter Section, for a distance of 1351.48 feet to the most southwest corner of said 100.268 acre parent parcel; Thence S88°00'40"E, along the most southerly line of the 100.268 acre parcel, for a distance of 1629.90 feet to a P.K. nail set in the centerline of Mogadore Avenue (60 feet wide) and being the <u>true point of beginning</u> of the parcel herein described;

1. Thence N03°57'37"E, along the centerline of Mogadore Avenue, for a distance of 320.00 feet to a P.K. nail set;

2. Thence S88°00'40"E, along a new division line, passing over a steel rebar set 30.02 feet from the centerline, for a distance of 777.87 feet to a steel rebar set;

3. Thence S03°57'37"W, along a new division line, for a distance of 320.00 feet to a steel rebar set;

4. Thence N88°00'40"W, along the most southerly line of said 100.268 acre parent parcel, passing over a steel rebar set 30.02 feet from the centerline of Mogadore Avenue, for a distance of 777.87 feet to the true point of beginning and containing 5.711 acres.

This description is based upon a survey performed by Broemsen Surveying, Inc. in Hartville, Ohio, David R. Broemsen, Surveyor No. 6595, on April 14, 1984 and April 18, 1996. All steel rebars set are 5/8 inch diameter with cap stamped "Broemsen Surveying". The basis of bearings for this survey is S88°00'40"E for the most southerly line of the 100.268 acre Price parcel, Deed Volume 4166, Page 11.

28-05800

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CROSS REF	

97001318

MAR-25-1999 17:00 HERBERT BENSON

Form 033-Quit Claim Deed-Dower

97021132

Know all Men by these Presents

That, Luther J. Price, a married man

, the Grantor ,

for divers good causes and considerations thereunto moving, and especially for the sum of Ten and 00/100---------- Dollars ($ 10.00) received to his full satisfaction of

Heidi Michel, Trustee of

, the Grantee ,

The Price Family Trust dated 12/12/96 do by these presents absolutely give, grant, remise, release and forever quit-claim unto the said grantee , it's heirs and assigns forever, all such right and title as he , the said grantor , have or ought to have in and to the following described piece or parcel of land, situated in the Township of Lake County of Stark and State of Ohio:

Given, Granted, Remised, Released and Forever Quit-Claimed,

See legal description attached hereto as Exhibit "A" and made a part hereof by this reference.

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DESCRIPTION	
CROSS REF	

RECORDED THIS DATE
JANE VIGNOS
STARK COUNTY RECORDER
97 APR 23 AM 9:08
FEE 22.00

97004491

in process 8 NE 12.59A, 8 SW 72.08A, 8 SE 10.40A Hks all FSM 3/03/97

Situated in the State of Ohio, County of Stark, Township of Lake (T-12,R-8) and Northeast, Southeast and Southwest Quarters of Section 8 and being the remainder of a 100.268 acre parcel now or formerly owned by F.A. & V.M. Price, the deed of which is recorded in Volume 4166, Page 11 of the Stark County Deed Records and more fully bounded and described as follows:

Beginning at a 1 inch outside diameter steel pipe found at the northwest corner of the Southwest Quarter of Section 8;

1. Thence S87°56'19"E, along the northerly line of the Southwest Quarter of Section 8, for a distance of 1506.20 feet to a steel rebar set in the centerline of Mogadore Avenue (60 feet wide) at the northwest corner of a 5.711 acre parcel now or formerly owned by J. & P. Kettering, Volume 4050, Page 120;

2. Thence S12°06'54"E, along the centerline of Mogadore Avenue, passing over a 1 inch steel bar found at 3.86 feet, for a distance of 318.82 feet to a 1 inch steel bar found;

3. Thence S88°07'08"E, along the southerly line of the 5.711 acre parcel, passing over a 1 inch steel bar found at 30.97 feet, for a distance of 774.38 feet to a 1 inch steel bar found;

4. Thence N02°17'37"E, along the easterly line of the 5.711 acre parcel, passing over a 1 inch steel bar found 1.33 feet from the northeast corner, for a distance of 306.67 feet to a steel rebar set at the northeast corner of the 5.711 acre parcel;

5. Thence S87°56'19"E, along the northerly line of the Southwest Quarter, for a distance of 337.83 feet to a 1 inch steel bar found at the center of Section 8;

6. Thence N02°15'41"E, along the westerly line of the Northeast Quarter of Section 8, for a distance of 645.92 feet to a steel rebar set at the southwest corner of Lot 56 in Jamestown Village No. 3, Plat Book 36, Page 39;

7. Thence S87°59'30"E, along the southerly line of Lots 56 thru 62 in Jamestown Village No. 3, for a distance of 848.23 feet to a 1 inch outside diameter steel pipe found;

8. Thence S02°11'51"W, along the westerly line of a 10.772 acre parcel now or formerly owned by D. & M. Miller, O.R. Volume 41, Page 609, for a distance of 1170.96 feet to a 3/4 inch outside diameter steel pipe found;

JANET WEIR CREIGHTON
Stark County Auditor
FEE $5.00

APR 23 1997

TRANSFERRED
TRANSFER NOT NECESSARY
DEPUTY

IN COMPLIANCE WITH SEC 319.202

MAR-20-1997 11:08 HERBERT BENSON

To Have and to Hold the premises aforesaid, with the appurtenances thereunto belonging to the said grantee, its heirs and assigns, so that neither the said grantor, nor his heirs, nor any other persons claiming title through or under him, shall or will hereafter claim or demand any right or title to the premises, or any part thereof; but they and every one of them shall by these presents be excluded and forever barred.

And for valuable consideration

Bonnie L. Price, wife of the Grantor do hereby remise, release and forever quit-claim unto the said grantee, its heirs and assigns, all her right and expectancy of Dower in the above described premises.

In Witness Whereof, We have hereunto set our hand, the 31st day of January, in the year of our Lord one thousand nine hundred and ninety-seven

Signed and acknowledged in presence of

Sandra K. Klatt
Sandra K. Klatt

Luther J. Price
Luther J. Price

Sherry Schaadt
Sherry Schaadt

Bonnie L. Price
Bonnie L. Price

The State of Ohio, Stark County, } ss. Before me, a notary public, in and for said County and State, personally appeared the above named

Luther J. Price & Bonnie L. Price

who acknowledged that they did sign the foregoing instrument and that the same is their free act and deed.

In Testimony Whereof, I have hereunto set my hand and official seal, at Uniontown, Ohio this 31st day of January A. D. 1997

Sandra K. Klatt
Notary Public

This instrument prepared by
Robert F. McNamara #0011829
McNamara & Freeman Co., L.P.A.
~~(330)699-6703~~

SANDRA K. KLATT, Notary Public
STATE OF OHIO
Resident Stark County
My Commission Expires June 8, 1997

Quit-Claim Deed

Luther J. Price, a married man

TO

The Price Family Trust dated

December 12, 1996

Transferred ____ 19__
COUNTY AUDITOR

State of Ohio
County of ____ } ss.
Received for Record on the ____ day of ____ 19__ at ____ o'clock ____ M. and Recorded ____ 19__ in Deed Book ____ Page ____

Recorders Fee $ ____
COUNTY RECORDER

9. Thence N87°47'00"W, along the northerly line of a 62.644 acre parcel, now or formerly owned by D. & P. Smith, Trustees, Instrument No. 96050162, for a distance of 849.49 feet to the northwest corner of the Smith property, as witnessed by a 3/4 inch outside diameter steel pipe found 0.24 foot N87°47'00"W of the corner;

10. Thence S02°15'26"W, along the easterly line of the Southwest Quarter, for a distance of 826.12 feet to a northeast corner of the D. & A. Miller property, Volume 3231, Page 635, as witnessed by a 1-3/4 inch outside diameter steel pipe found 0.09 foot S88°00'40"E of the corner;

11. Thence N88°00'40"W, along the most northerly line of said Miller property, for a distance of 286.78 feet to a steel rebar found at the southeast corner of a 5.711 acre parcel now or formerly owned by L.J. Price, Instrument No. 97005841-42;

12. Thence N03°57'37"E, along the easterly line of the 5.711 acre parcel, for a distance of 320.00 feet to a steel rebar found;

13. Thence N88°00'40"W, along the northerly line of the 5.711 acre parcel, passing over a steel rebar found 30.02 feet from the centerline, for a distance of 777.87 feet to the centerline of Mogadore Avenue;

14. Thence S03°57'37"W, along the centerline of Mogadore Avenue, for a distance of 320.00 feet to the southwest corner of the 5.711 acre parcel;

15. Thence N88°00'40"W, along the most northerly line of said Miller property, passing over a steel rebar found 30.02 feet from the centerline, for a distance of 1629.90 feet to a steel rebar set in the westerly line of the Southwest Quarter;

16. Thence N02°07'18"E, along the westerly line of the Southwest Quarter, for a distance of 1351.48 feet to the point of beginning and containing 94.867 acres, of which approximately 12.591 acres are in the Northeast Quarter, approximately 10.198 acres are in the Southeast Quarter and 72.078 acres are in the Southwest Quarter of Section 8;

This description is based upon a survey performed by Broemsen Surveying, Inc. in Hartville, Ohio, David R. Broemsen, Surveyor No. 8595, in March of 1997. All steel rebars set and found are 5/8 inch diameter with cap stamped "Broemsen Surveying". The basis of bearings for this survey is S88°00'40"E for the most southerly line of the 100.268 acre Price parcel, Deed Volume 4166, Page 11.

Subject to all legal highways and easements of record.

037921 VOL 864 PAGE 515

WARRANTY DEED

KNOW ALL MEN BY THESE PRESENTS THAT, LUTHER J. PRICE AND BONNIE L. PRICE, HUSBAND AND WIFE, the Grantors, for the consideration of One Dollar and Other Valuable Consideration ($1.00 & OVC) received of JAMES D. HOFFMAN, the Grantee, whose tax mailing address will be,, do give, grant, bargain, sell and convey unto the said Grantee, his heirs and assigns, the following described premises:

Situated in the City of North Canton, County of Stark, and State of Ohio: Known as and being Lot Number Four Thousand Four Hundred Eighty One (4481) in said City.

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C.REF	
COMPD	21

SUBJECT TO THE FOLLOWING:

Conditions and restrictions as set forth in a deed received for record January 5, 1957, and recorded in Volume 2472, Page 703, Stark County Records.

Amended Conditions and restrictions as set forth in an instrument received for record December 1, 1958, and recorded in Volume 2565, Page 43, Stark County Records.

Amended Conditions and restrictions as set forth in an instrument received for record September 25, 1961, and recorded in Volume 2750, Page 78, Stark County Records.

Subject to all matters set forth on the Plat of Chatham Hills No. 2, received for record July 25, Page 56, and recorded in Plat Book 32, Page 85, Stark County Plat Records.

Driveway Agreement set forth in an instrument, received for record May 13, 1943, and recorded in Volume 1356, Page 497, Stark County Records.

Easement to The East Ohio Gas Company, received for record November 13, 1964, and recorded in Volume 3034, Page 462, Stark County Records.

Easement to The Ohio Power Company, received for record August 12, 1955, and recorded in Volume 2320, Page 448, Stark County Records.

Easement to The Ohio Power Company, received for record March 15, 1957, and recorded in Volume 2478, Page 319, Stark County Records.

Easement to The Ohio Power Company, received for record December 15, 1938, and recorded in Volume 1236, Page 147, Stark County Records.

Easement to The Ohio Power Company, received for record

December 17, 1952, and recorded in Volume 2081, Page 5, Stark County Records.

Easement to The Ohio Power Company, received for record December 19, 1952, and recorded in Volume 2081, Page 12, Stark County Records.

Right of Way to The East Ohio Gas Company, received for record December 30, 1939, and recorded in Volume 1241, Page 215, Stark County Records.

TO HAVE AND TO HOLD the above granted and bargained premises with the appurtenances thereunto belonging, unto the said Grantee, his heirs and assigns forever.

And we, the said Grantors, do for ourselves and our heirs and assigns covenant with the Grantee, his heirs and assigns, that at and until the ensealing of these presents, we are well seized of the above described premises as a good and indefeasible estate in FEE SIMPLE, and have good right bargain and sell the same in manner and form as above written, and that the same is free from all encumbrances whatsoever, except those stated herein and legal highways and real estate taxes and assessments which are assumed by Grantee(s) from date of closing, and that they will warrant and defend said premises, with the appurtenances thereunto belonging, to the said Grantee, his heirs and assigns, against all lawful claims and demands whatsoever, except as stated above.

Prior Deed Volume 412, Page 95, STARK County Records.

IN WITNESS WHEREOF, we have hereunto set our hands, the 12th day of March, 1999.

Signed and acknowledged
in presence of:

Gloria L. Valerio — Luther J. Price
LUTHER J. PRICE

Mary Ann Hay — Bonnie L. Price
BONNIE L. PRICE

STATE OF OHIO, STARK COUNTY: SS:

Before me, a Notary Public in and for said County and State, personally appeared the above named LUTHER J. PRICE AND BONNIE L. PRICE, HUSBAND AND WIFE, who acknowledged that they did sign the foregoing instrument and that the same is their free act and deed.

VOL 864 PAGE 517

IN TESTIMONY WHEREOF, I have hereunto set my hand and official seal, at Canton, Ohio, this 12th day of October, 1989.

Notary Public
No expiration date

This instrument prepared by:
Arnold R. Shifman, Esquire
1000 United Bank Plaza
220 Market Avenue South
Canton, Ohio 44702
(216) 456-8341

IMPORTANT
TITLE EVIDENCE
Be issued with
American Title Associates Agency, Inc.
970 United National Bank Plaza
Canton, Ohio 44702
Phone: (216) 456-8900
Title File No. is 89-964

RECORDED THIS DATE
JANET WEIR CREIGHTON
STARK COUNTY RECORDER
89 OCT 13 PM 3:03
FEE 12.00

IN COMPLIANCE
WITH ORC 319.202
OCT 13 1989
WILLIAM B. BOWMAN
STARK COUNTY AUDITOR
85.50 FEE DC DEPUTY

TRANSFERRED
OCT 13 1989 SCT
WILLIAM B. BOWMAN
STARK COUNTY, AUDITOR
SC DEPUTY

VOL 394 PAGE 704 86003010

WARRANTY DEED

KNOW ALL MEN BY THESE PRESENTS THAT

Luther J. Price and Bonnie L. Price, husband and wife,

the Grantors,

who claim title by or through the instrument recorded in Volume 3101, Page 35, of the Stark County Records, for the consideration of One Dollar and Other Valuable Consideration ($1.00 and O.V.C.) received to the satisfaction of

Peter W. Reynolds and Susan E. Reynolds, husband and wife,

the Grantees,

whose tax mailing address will be:
6071 Redford NW, N. Canton, Ohio 44720.

Give, Grant, Bargain, Sell and Convey unto the said Grantees, their heirs and assigns, the following described premises:

Situated in the Township of Lake, County of Stark and State of Ohio: And Known as and being part of the northwest quarter of section number 20, Township number 12 (Lake), Range number 8, described as follows: Beginning at the southwest corner of said quarter; thence north 1° 30' east, 242.53 feet to an iron pin; thence south 88° 39' east, 179.6 feet; thence south 1° 24' west 242.53 feet to a point in the South line of said quarter section; thence north 88° 46' west, 179.6 feet to the place of beginning, containing 1 acre of land.

RECEIVED FOR RECORD AND RECORDED
FEB 4 1986.
at 3:46 o'clock
In Stark County
OFFICIAL RECORDS
Vol. 394 Page 704
ET WEIR CREIGHTON
Recorder Fee 10.00

INDEX	
DESCP	
CREF	
COMPD	

IN COMPLIANCE
WITH ORC 319.202

FEB 4 1986

WILLIAM B. BOWMAN
STARK COUNTY, AUDITOR
53.00 FEE DEPUTY

TRANSFERRED
FEB 4 1986
WILLIAM B. BOWMAN
AUDITOR STARK COUNTY
Deputy

0988

"Deed checked for tract description only"
JAN 28 1986
STARK COUNTY ENGINEER
Deputy

subject to all legal highways.

TO HAVE AND TO HOLD the above granted and bargained premises, with the appurtenances thereof, unto the said Grantees, their heirs and assigns forever.

And Luther J. Price and Bonnie L. Price, husband and wife, the said Grantors do for themselves and their heirs, executors and administrators, covenant with the said Grantees, their heirs and assigns, that at and until the ensealing of these presents, that they are well seized of the above described premises, as a good and indefeasible estate in FEE SIMPLE, and have good right to bargain and sell the same in manner and form as above written, and the same are free from all incumbrances whatsoever except for taxes and assessments of record, if any, and that they will Warrant and Defend said premises, with the appurtenances thereunto belonging, to the said Grantees, their heirs and assigns, against all lawful claims and demands whatsoever subject to the above noted exceptions.

And for valuable consideration

Luther J. Price and Bonnie L. Price, husband and wife,

do hereby remise, release and forever quit-claim unto the said Grantees, their heirs and assigns, all their right and expectancy of DOWER in the above described premises.

WITNESS their hands this 4TH day of February, 1986.

Signed and acknowledged in the presence of:

Luther J. Price
Luther J. Price

Bonnie L. Price
Bonnie L. Price

ACKNOWLEDGEMENT

State of Ohio)
) ss
County of Stark)

Be it remembered, That on the 4TH day of February, 1986 before me a Notary Public in and for said county, personally came

Luther J. Price and Bonnie L. Price husband and wife,

the Grantors in the foregoing Deed, and acknowledged the signing thereof to be their voluntary free act and deed.

In Testimony Whereof, I have hereunto set my hand and official seal, at Canton, Ohio, this 4TH day, of February, 1986.

Notary Public

My Commission expires:

JAY L. CUTLER
Notary Public, State of Ohio
Continuing Commission ORC 147.03

This instrument prepared by:

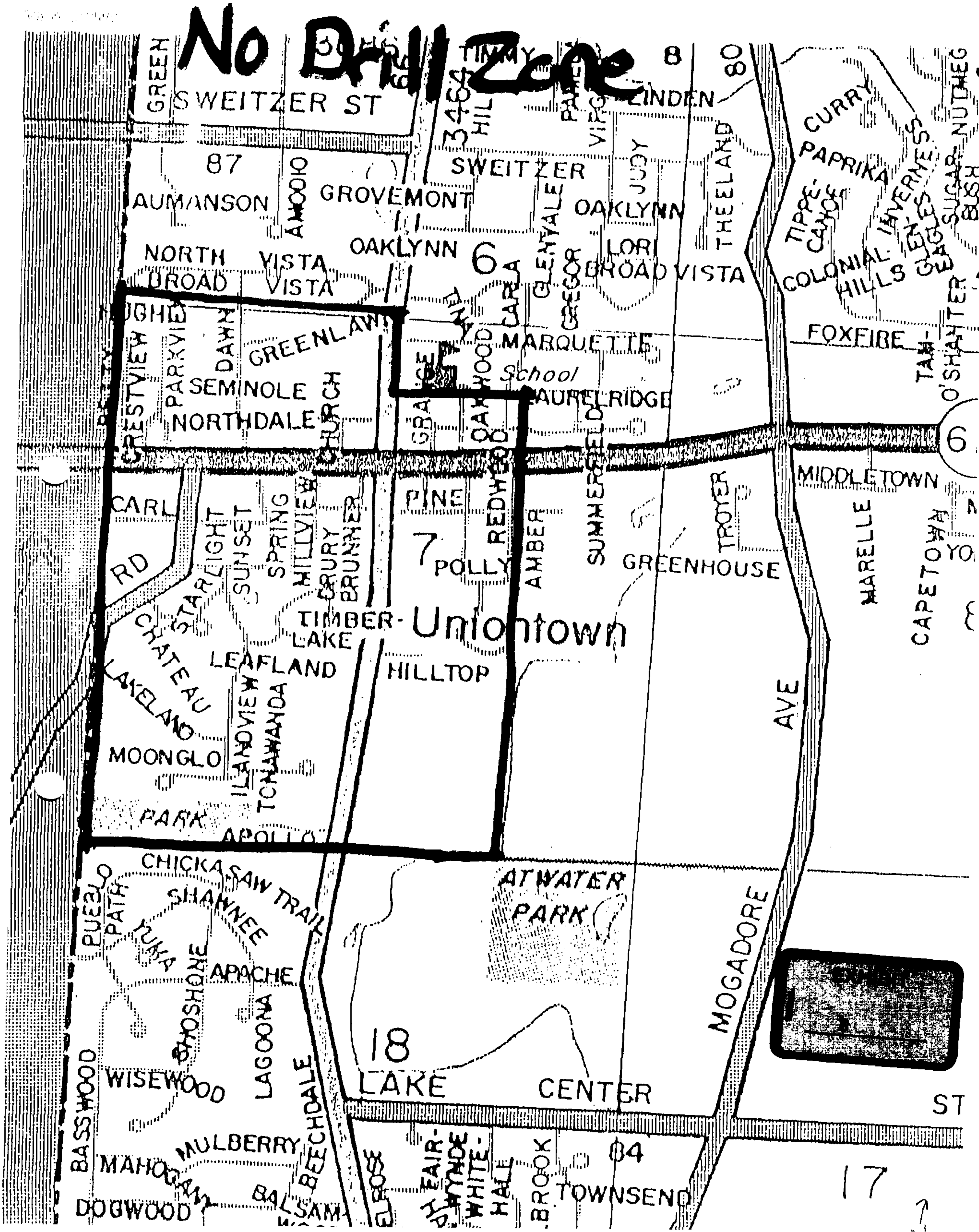
Jay L. Cutler, Attorney at Law
North Canton, Ohio

Fidlar and Chambers Corp
Stark County Ohio

User Name: 0231
Document: 98028064
Pages: 3
Copies: 1
Total Pages: 3
Thu 3/25/99 10:39:04 AM

0231

Please slip this to Julie JJ for #3 od


No Drill Zone
SWEITZER ST
LINDEN
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SWEITZER
AUMANSON
GROVEMONT
OAKLYNN
NORTH
VISTA
BROAD
VISTA
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6
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BROAD VISTA
THEELAND
JUDY
CURRY
PAPRIKA
TIPPE-CANOE
COLONIAL
HILLS
FOXFIRE
TAM-O'SHANTER
GREENLAWN
MARQUETTE
School
LAURELRIDGE
CRESTVIEW
PARKVIEW
DAWN
SEMINOLE
NORTHDALE
CHURCH
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MIDDLETOWN
CARL
RD
PINE
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POLLY
REDWOOD
AMBER
SUMMERFIELD
TROTER
GREENHOUSE
MARELLE
CAPETOWN
STARLIGHT
SUNSET
SPRING
HILLVIEW
DRURY
BRUNNER
TIMBER-LAKE
Uniontown
CHATEAU
LEAFLAND
HILLTOP
LAKELAND
MOONGLO
TONAWANDA
PARK
APOLLO
AVE
CHICKASAW TRAIL
ATWATER
PARK
PUEBLO PATH
SHAWNEE
APACHE
SHOSHONE
LAGOONA
MOGADORE
18
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CENTER
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WISEWOOD
BASSWOOD
BEECHDALE
MULBERRY
MAHOGANY
DOGWOOD
BALSAM
84
TOWNSEND
17

KAUFMAN & CUMBERLAND
CO. L.P.A. COUNSELORS AT LAW

FRANK J. CUMBERLAND
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FRANK R. DESANTIS
ROBERT A BLATTNER
GAIL E. SINDELL
WILLIAM W. JACOBS
MITCHELL EHRENBERG
THOMAS L. FEHER

SUSAN L. BELMAN
CHARLES P. ROYER
CRAIG P. KVALE
ROBIN M. WILSON
ROBERT J. PATTON

OF COUNSEL

JACK G. DAY
ANTHONY R. TROIA
EDDA SARA POST

January 20, 1999

VIA FACSIMILE (312-353-1120)

Mr. David A. Ullrich
Acting Regional Administrator
Region 5
United States Environmental Protection Agency
77 West Jackson Blvd.
Chicago, Illinois 60604

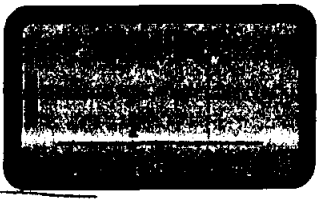
VIA FACSIMILE (312-353-1155)

Ms. Denise Gawlinski
Community Involvement Coordinator
Office of Public Affairs (P-19J)
United States Environmental Protection Agency
Region 5
77 West Jackson Blvd.
Chicago, Illinois 60604

Re: Industrial Excess Landfill, Uniontown
Lake Township, Stark County, Ohio
Request for Extension of Time in which to Provide Comments on Proposed Changes to the Record of Decision

Dear Mr. Ullrich and Ms. Gawlinski:

We represent the Board of Lake Township Trustees, the local elected governmental body of the Uniontown area, in the above referenced matter. On or about January 4, 1999, the United States Environmental Protection Agency announced a public comment period on the revised cleanup plan for the Industrial Excess Landfill Superfund Site located in Lake Township. The revised cleanup plan significantly changes the remedy selected in a Record of Decision issued by the United States Environmental Protection Agency in 1989.



(216) 861-0707 FAX: (216) 694-6883 TDD: (216) 694-6891

1500 REPUBLIC BUILDING, 25 PROSPECT AVENUE WEST, CLEVELAND, OHIO 44115-1000 E-MAIL: kclpa.com

As you are aware, this Site has many technical and procedural issues and a lengthy history associated with it. The revised cleanup plan, while rumored in the press, was unexpected, and presents a significant change in the remedy to be implemented at the Site. The documents filed by the USEPA at the public records repository in support of the revised cleanup plan are voluminous and present a point of view that until quite recently was not accepted by the USEPA. In addition, the revised cleanup plan is controversial. Reports in the local newspaper indicate that the Ohio EPA and the ATSDR, may not be in agreement with the proposed changes.

Last week, the Board of Lake Township Trustees learned that their request for technical outreach services from the Great Lakes Mid-Atlantic Center for Hazardous Substances Research was granted. The Board of Trustees does not have technical expertise in its ranks and we are pleased that we have been able to obtain the assistance of the Center. The experts assigned to the matter by the Center will be assisting us in providing constructive comments to USEPA; however, as the experts are brand new to the matter, the sixty days granted for public comment does not provide sufficient time for them to review all of the documents and prepare meaningful, comprehensive comments. In addition, the Board of Township Trustees will need additional time to accept comments of its constituents and include them in their written comments to the agency.

We know that the USEPA has been considering these changes for many, many months. Certainly it is reasonable for the public to have an extended time to review the many supporting documents, identify and understand the issues arising from the proposed changes to the cleanup plan and prepare cogent written comments. Public understanding of the issues and an opportunity for meaningful participation in the selection of a remedy is an essential requirement of the National Contingency Plan.

In addition, as you may be aware, the Office of the Ombudsman is currently completing an assessment of the Industrial Excess Landfill Site and will be making recommendations regarding the need for additional investigation and study of the Site prior to selection of a permanent remedy. If additional study and investigation is required, the public comments provided pursuant to the public comment period from January 11, 1999 to March 11, 1999 will be premature and based upon incomplete information. Indeed, conducting the public comment period prior to the Ombudsman's report of findings may actually deprive the public of the opportunity for meaningful comment.

Accordingly, the Lake Township Board of Trustees respectfully requests that the USEPA extend the public comment period for a period of ninety days, up to and including June 30, 1999, or sixty days after the release of the Ombudsman's report, whichever occurs later, in which to provide the comments to the revised cleanup plan.

Section 300.435(c)(2) of the National Contingency Plan (40 CFR Part 300) provides that upon timely request, the USEPA will extend the public comment period by a minimum of thirty additional days. Accordingly, our request for an extension of time of the comment period is clearly authorized by law.

If you have any questions, or would like to discuss this request further, please feel free to contact me at the telephone number listed above. We appreciate a prompt response to this request.

Respectfully,

Edda Sara Post

Edda Sara Post

ESP/jmp

cc: Frank J. Cumberland, Esq.
David Herbert, Esq.
Board of Trustees of Lake Township

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KAUFMAN & CUMBERLAND
CO., L.P.A. COUNSELORS AT LAW

FRANK J. CUMBERLAND
STEVEN S. KAUFMAN
FRANK R. DESANTIS
ROBERT A. BLATTNER
GAIL E. SINDELL
WILLIAM W. JACOBS
MITCHELL EHRENBERG
THOMAS L. FEHER

SUSAN L. BELMAN
CHARLES P. ROYER
CRAIG P. KVALE
ROBIN M. WILSON
ROBERT J. PATTON

OF COUNSEL

JACK G. DAY
ANTHONY R. TROIA
EDDA SARA POST

March 29, 1999

VIA FACSIMILE (312)353-1220)
Mr. David A. Ullrich
Acting Regional Administrator
Region 5
United States Environmental Protection Agency
77 West Jackson Blvd.
Chicago, Illinois 60604

VIA FACSIMILE (312)353-1155
Ms. Denise Gawlinski
Community Involvement Coordinator
Office of Pubic Affairs (P-19J)
United States Environmental Protection Agency
Region 5
77 West Jackson Blvd.
Chicago, Illinois 60604

RE: **Industrial Excess Landfill, Uniontown, Lake Township, Stark County, Ohio: request for Additional Extension of Time In which to Provide Comments on Proposed Changes to The Record of Decision**

Dear Mr. Ullrich and Ms. Gawlinski:

On or about January 4, 1999, the United States Environmental Protection Agency announced a public comment period on a revised cleanup plan for the Industrial Excess Landfill Superfund Site located in Lake Township, Stark County, Ohio ("IEL"). The revised plan significantly changes the capping and pump and treat remedy selected in the Record of Decision issued by the United States Environmental Protection Agency in 1989.

Despite USEPA's assertion to the contrary in its letter dated February 17, 1999, the IEL landfill is complex with locally intricate Ohio kettle and cam geology. That complexity must be recognized and addressed in selecting an appropriate remedy. Good science requires a complete understanding of the geological and hydrogeological setting of IEL to determine whether the proposed changes to

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1500 REPUBLIC BUILDING, 25 PROSPECT AVENUE WEST, CLEVELAND, OHIO 44115-1000 E-MAIL: kcips

the remedy are appropriate and protective of human health and safety and the environment. We and our experts' were startled to find during our review of the administrative record, ten years after the initial remedy selection, that basic hydrogeological work and analysis necessary to accurately characterize the IEL Site and locale, to determine the fate and transport of contaminants and to design a remedy protective of human health and safety as required by the National Contingency Plan (NCP), has not been completed. See the enclosed affidavit. Further, many of the data gaps that were acknowledged by the USEPA in the 1989 Record of Decision have yet to be filled.

The USEPA's failure to gather this information makes it impossible for anyone to evaluate what has happened to the hazardous substances that were disposed at IEL, and, more importantly, whether the proposed changes to the remedy are indicated. Is natural attenuation, in fact, occurring at IEL and its environs as suggested by the PRPs or is some other mechanism(s) at play? As Mr. Munro, Director of the Region's Superfund Division admitted in his letter dated February 17, 1999, other equally compelling theories explain the contaminant trends attributed to natural attenuation by the PRPs. To change and implement a remedy based upon the scant information and possibilities posited in the administrative record rather than good science based on complete and accurate data and an understanding of the fate of the gallons and tons of hazardous substances deposited at IEL will be arbitrary and capricious and contrary to the law.

The Board of Lake Township Trustees has engaged its own experts, at its own expense, to fill some of the large data gaps left by the agency over the life of this Superfund Site and to assess the newly proposed remedy at the Site. This work is underway; however, because the time needed to identify and appropriate funds, to find and engage appropriate expert assistance, and to complete the work the Board of Lake Township Trustees request an additional ninety days in which submit its comments on the proposed changes to the remedy. The Board of Lake Township Trustees will share all of the data it gathers and the conclusions it draws with the USEPA and the public upon its completion.

The Board of Lake Township Trustees has also been conducting its own investigation into the source of radioactivity found at IEL. This investigation was begun in the summer and fall of 1998 with a series of Freedom of Information Act Requests (FOIA) to various governmental agencies. Although the agencies are required by law to provide requested information within twenty days, they often miss that deadline. We only began receiving data from the Nuclear Regulatory Commission in response to our August 1998 request this month. Last week, the Board of Lake Township Trustees received a response to the NRC FOIA request stating, curiously, that the USEPA had only just received it and would not provide us an answer for another twenty days. We are at a loss as to why this FOIA request was routed to the USEPA and why it took so long to be routed to USEPA. We request that the USEPA extend the public comment period to enable the Lake Township Board of Trustees to review the information we receive from it and the NRC so that we may include our analysis of it in our comments, if appropriate.

The proposed changes to the remedy, including the timing, nature and installation of a cap is inextricably linked to a final resolution of the radioactivity issue. As you are aware, new information regarding the disposal of radioactive material at IEL was presented during the recent public hearings conducted by the Ombudsman Robert Martin and the USEPA. Once the cap is installed, additional investigation or remedial activity could easily compromise the cap's integrity. As demonstrated by the date of the FOIA request, the Board of Lake Township has not been dilatory in its investigation. It should be not deprived of its right to make public comments on an issue material and relevant to the proposed changes to the remedy by the government's failure to meet its FOIA obligations.

In addition, although the comment period may have opened on January 11, 1999, the administrative record and information in support of the ROD amendment was not complete. Because of the piecemeal manner in which the data was released and continues to be released, the public has not actually had ninety days in which to complete a comprehensive review of the administrative record and provide meaningful comments.

From January 11, 1999 to January 27, 1999, the documents in the Administrative Record were incomplete. Only one side of the double-sided documents was provided. Sixteen days were lost due to this clerical error. Similarly, the results of the 1998 water sampling have only been recently available to the public. The USEPA did not release their sampling results to the public until about March 2, 1999. Thus, the public will have only about thirty-nine days to review and comment on this data. The agency did not provide copies of the 1998 water sampling done by PRPs to the public until March 23, 1999; although we note that the data validation was sent to the PRPs on March 11, 1999. Why this data was not simultaneously provided to the public record repository and the PRPs is unknown to us. The public will have had fewer than thirty days in which to review and comment upon this relevant data. Finally, the ATSDR report on the proposed changes to the remedy is not due to be released until March 30, 1999. The public will have only eleven days to provide comments on that document.

As you are aware, the minimum comment period to be provided under the NCP is thirty days. The director is required to grant at least an additional thirty days when requested. Both requirements assume that all the supporting data is placed in the repository and available to the public at the time that the comment period opens. That has not been the case here. The Board of Lake Township Trustees and the public should be granted an additional ninety days in which to review and provide comments on all available data related to natural attenuation and the proposed changes to the remedy now that the administrative record had been brought up to date.

We recognize that the agency did not consider the 1998 data in proposing the amendments to the remedy; however, the information is clearly relevant and material to the question of whether natural attenuation is occurring at IEL and the propriety of the proposed changes to the remedy. We understand that the PRPs have submitted the information to the agency to support their hypothesis that natural attenuation is occurring there. Sound science dictates the use of more rather than less data to support a hypothesis as to the fate of hazardous substances dumped at IEL and remedy based on that hypothesis. The fact that the agency and the PRPs are relying on allegedly decreasing groundwater contaminant levels in offsite wells regardless of the reason for the trend (see p. 2 of Mr. Munros' February letter) to support the proposed changes to the remedy, dictates that the public should have a reasonable opportunity to review all relevant and material data, including the 1998 groundwater data, and provide comments upon it.

Why the USEPA rushed to begin the public comment period before the 1998 sampling information had been through the quality assurance and control review and could be released to the public is unknown to us. The agency knew that the samples had been taken and that the analytical results were on their way. Certainly, the information is relevant and material to the analysis of whether natural attenuation or flushing of the landfill has occurred and whether the proposed changes are appropriate and protective of public health and the environment. Ten years after the initial record of decision, the remedy has not been implemented by USEPA despite the fact that it clearly has the authority to do so without PRP participation. An extension of the public comment period for another ninety days will not appreciably further delay the implementation of the remedy or further endanger the risk to human health and the environment.

Information is power at the IEL Site. Only with sufficient high quality and scientific data and open public discussion will the USEPA be able to select and fashion a sound remedy there. The free and timely collection and flow of technical information to and from all interested parties and public discourse on it is the key to the proper selection and implementation of a final remedy protective of human health and safety and the environment at the IEL. Indeed, the NCP requires it. We do not know why gathering and sharing information regarding the Site has been an issue and continues to be an issue. (You may recall that it took the USEPA a year to release the 1997 groundwater data.) We do know that at this stage of the Superfund process, delaying or withholding information relevant and material to the proposed changes to the remedy is contrary to the spirit, if not the letter of the NCP. So, too, is an unnecessarily and artfully shortened public comment period. It certainly is arbitrary and capricious given the fact that community involvement in remedy selection is a cornerstone of the NCP and the Uniontown community has indicated an overwhelming interest in being kept apprised of all work completed at the Site and the final remedy.

For the foregoing reasons we request an additional ninety days in which to provide comments on the proposed changes to the remedy selected in the 1989 Record of Decision. Because of the shortness of time, we request an immediate notification as to whether the extension is granted. Please contact me at (216) 861-0707 to advise me of your decision.

Sincerely,

Edda Sara Post

Enclosure
cc: David Herbert, Esq.
Susan Ruley
Frank J. Cumberland, Esq.

ESP/psj
F:\SHARED\PENNIE\0002ltr.doc

STATE OF OHIO)
COUNTY OF Franklin) SS.
)

AFFIDAVIT

Comes now Julie Weatherington Rice and upon being duly sworn deposes and states:

1. I am over eighteen years of age and fully competent to make this affidavit. I make this affidavit of my own free will.

2. I am a certified professional geologist with the American Institute of Professional Geology. I am also a registered geologist in Kentucky. I have been working as a professional geologist in Ohio for over twenty years. I am experienced in investigating solid and hazardous waste landfills and their environs and have been involved in selecting and designing remedial actions for solid and hazardous waste landfills.

3. I have been engaged by the Board of Lake Township Trustees to review the Administrative Record for the Industrial Excess Landfill in Uniontown, Ohio (IEL) and to assist the Board in preparing comments on the proposed change in the remedy for IEL.

4. The documents I have reviewed in association with this work include but are not limited to the Remedial Investigation, the 1989 Record of Decision, documents placed in the public records repository by the United States Environmental Protection Agency in support of the proposed changes and other selected public records at Ohio Department of Natural Resources and the United States Geological Survey.

5. The information contained in the documents submitted by USEPA contractors and the PRPs and the governmental agencies' responses that I have reviewed are inadequate to accurately characterize the actual hydrogeological conditions at the IEL Site and in the area. Such characterization is necessary to determine whether natural attenuation is occurring at IEL or whether other mechanisms are also playing a role in the decreasing contaminant levels in the monitoring wells surrounding the IEL facility. In addition, no receptors or final resting places of the contaminants have been identified. Examples of essential information missing from the administrative record include: water budgets of the landfill and surrounding area, including local streams, springs, ponds and wetlands, both with and without pumping of the irrigation wells located on the adjacent sod farm, contaminant load budget of the landfill for both organics and metal contaminants and an identification and inventory of receptors for such contaminants. All this information is necessary to ensure that remedy, with the

proposed changes, will adequately protect human health and safety and the environment as required by CERCLA.

FURTHER AFFIANT SAYETH NAUGHT.

Julie Weatherington Rice

Julie Weatherington Rice

Before me, a Notary Public, appeared Julie Weatherington-Rice who acknowledged that he did execute the foregoing, and that the same is her free act and deed.

In testimony whereof, I have hereunto set my hand this 29th day of March, 1999.

My commission expires:

Dec 17, 2003

Notary Public

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NOTARIAL SEAL STATE OF OHIO

JEFFREY P. SEATON
NOTARY PUBLIC, STATE OF OHIO
My Commission Expires Dec. 17, 2003

Tetra Tech EM Inc.
1921 Rohlwing Road, Suite D ◆ Rolling Meadows, IL 60008 ◆ (847) 255-4166 ◆ FAX (847) 255-8528

February 18, 1999

Carolyn Casey
Lake Township Clerk's Office
12360 Market North
Hartville, OH 44652-9049

Subject: ***Industrial Excess Landfill (IEL) Proposed Plan Supporting Documents***
February 1999 Revision
Work Assignment No. 003-CRCR-05ZZ
Contract No. 68-W7-0003

Dear Ms. Casey:

Tetra Tech EM Inc. (Tetra Tech) requests your assistance in updating the above-referenced information repository with the enclosed documents, folders, and outline. All enclosed documents should be placed in the box with hanging file folders that was mailed to you in January 1999. Specifically, please

1. Remove the 17th document from its folder entitled "EPA Guidance Document Entitled, 'Use of Monitored Natural Attenuation at Superfund, RCRA Corrective Actions, and Underground Storage Tank Sites." Pages of the document are missing. **Please recycle the document and replace it with the enclosed document of the same name.**

2. Place the enclosed hanging folder, which contains three documents, in the back of the box. The documents are arranged chronologically. The last document in the box is "Report Entitled, 'Comparative Evaluation of Remedial Alternatives for the IEL Site Proposed Plan." The enclosed hanging folder should be placed behind this document.

3. Remove and recycle the blue folder in front of the box with the label entitled "Industrial Excess Landfill Proposed Plan Supporting Documents January 1999." Please replace it with the enclosed folder.

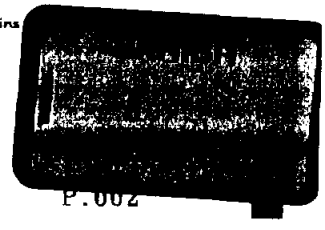
Please call me at (847) 818-7190 or Mary Frances Wendt at (847) 818-7193 with your questions or comments.

Sincerely,

Joi Ross
Project Manager

Enclosure

cc: Denise Gawlinski, EPA Community Involvement Coordinator (letter only)
Diane Spencer, EPA Project Officer (letter only)
Peggy Hendrixson, EPA Contract Officer (letter only)
Cheryl Allen, EPA Work Assignment Manager (letter only)
Majid Chaudhry, Tetra Tech Program Manager (letter only)
Mary Frances Wendt, Tetra Tech (letter only)



STATE OF OHIO)
) S.S.
COUNTY OF STARK)

AFFIDAVIT

I, Rex E. Shover, being first duly sworn according to law state:

1. I am over twenty-one years of age and am fully competent to make this affidavit.

2. I make this affidavit of my own free will.

3. I have resided in Uniontown, Ohio the majority of my life.

4. I am personally familiar with the Industrial Excess Landfill located in Uniontown, Ohio.

5. I served as a volunteer fireman for the Uniontown Volunteer Fire Department from approximately 1958 to 1976. While a volunteer fireman I received training in the labeling of various materials, including radioactive materials. I am familiar with and can recognize placards and labels used for radioactive materials.

6. During my time as a volunteer fireman, I personally saw tanker trucks carrying radioactive insignia enter the Industrial Excess Landfill late at night after the landfill was closed.

FURTHER AFFIANT SAYETH NAUGHT.

Rex E. Shover

Before me, a Notary Public, appeared Rex E. Shover who acknowledged that he did execute the foregoing, and that the same is his free act and deed.

In testimony whereof, I have hereunto set my hand this 6 day of February, 1999.

My commission expires:
July 7, 2001

Sharon Lee Greenleaf
Notary Public

SHARON LEE GREENLEAF
NOTARY PUBLIC, STATE OF OHIO
MY COMMISSION EXPIRES JULY 7, 2001

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LIZ MCGREGOR

Memo

To: U.S. EPA - REGION 5 -
TO WHOM IT MAY CONCERN
From: LIZ MCGREGOR
CC:
Date: 04/08/99
Re: UNIONTOWN LANDFILL

PLEASE RECORD THE FOLLOWING INFORMATION FOR THE UNIONTOWN, OH CONCERNED CITIZENS:

WE MOVED INTO OUR HOUSE AT 3444 HILLTOP STREET, UNIONTOWN, OH 44685 IN APRIL 1970. WE SEEN MANY ARMY TRUCKS COME INTO LANDFILL IN THE EARLY 1970'S. I KNEW THEY BELONGED TO THE ARMY BECAUSE THE SIDES OF THE TRUCKS COMING IN READ U.S. ARMY CORPS. THE TRUCKS THAT I SEEN WERE LOADED WITH 50-100 STAINLESS STEEL CANISTERS ON FLATBED TRUCKS. CANISTERS HAD HAZARDOUS MARKINGS ON THEM. HARLAN SEEN ARMY TRUCKS WITH TARPS ON THEM AND MANY TANKERS. THE TANKERS WOULD COME IN ALL THROUGH THE NIGHT AND DUMP STUFF; SOME TANKERS EVEN HAD THEIR OWN KEYS TO THE GATE.

HARLAN WENT TO THE CLEVELAND CLINIC IN 1978 AND HAD SOME TESTING DONE. THE TEST RESULTS WERE VERY SURPRISING TO US DUE TO DOCTORS ASKING HARLAN WHERE HE WAS STATIONED IN THE SERVICE. HARLAN WAS NEVER IN THE SERVICE. THREE MONTHS LATER, CLEVELAND CLINIC SENT US A LETTER STATING WE SHOULD MOVE AWAY FROM WHERE WE LIVE TO HELP HARLAN AND WE COULDN'T UNDERSTAND AT THE TIME WHAT THEY WERE TALKING ABOUT.

CHRISTMAS OF 1989, AN ARMY ENGINEER CAME TO OUR HOME IN UNIONTOWN (IF THEY HAD NO PART OF DUMPING, WHAT WAS HE DOING THERE), HE SAID HE WAS INSPECTING THE PREMISES.

WHEN I HAD MY SECOND BLOOD TEST DONE WITH - ENVIROHEALTH LABORATORIES, 990 N. BOWSER ROAD, SUITE 800, RICHARDSON, TX 75081, 214-234-5577, I WAS NOT WORKING, I WAS AT HOME AND MY TESTING INCREASED. THEY COULD NOT PUT DOWN THE FULL AMOUNT BECAUSE THE GOVERNMENT COULD COME IN ON THEM AND THEY WERE NOT ALLOWED TO PUT DOWN MORE THAN 200.

IF YOU HAVE ANY FURTHER QUESTIONS, PLEASE DO NOT HESITATE IN CONTACTING ME AT (330) 966-0534.

Lizette McGregor 4-9-1999
Harlan L McGregor 4-9-1999

Notary
State of Ohio

EXHIBIT C: LETTER RE: NEOPLASMS IN THE UNIONTOWN, OHIO AREA

HAS BEEN REDACTED – NINE PAGES

CONTAINS POSSIBLE PERSONALLY-IDENTIFYING INFORMATION

Elaine B. Panitz, M.D., P.A.
Occupational and Environmental Medicine
94 Cleveland Lane
Princeton, N.J. 08540

Telephone
(609) 448-9797

Telecopier
(609) 921-3051

December 1, 1992

Maureen Y. Lichtveld, MD, MPH
Assistant Director for Public Health Practice
Division of Health Assessment and Consultation
ATSDR, US PHS, DHHS
Atlanta, Georgia 30333

Re: IEL Uniontown, Ohio

Dear Dr. Lichtveld:

This is in reference to your letter of October 14, 1992 which requested health information on the IEL site in Uniontown, Ohio. I am a physician who is board certified in both Internal Medicine and Preventive Medicine (Occupational Medicine), and I am a Clinical Assistant Professor of Medicine at Robert Wood Johnson Medical School.

I was recently asked to review a cancer death case in a young man who lived on the western edge of the IEL site in Uniontown (see Appendix, Patient #1). The diagnosis proved to be osteosarcoma of the right fibula, prompting concern about the possible role of environmental radiation exposure. During preliminary interviews with multiple area residents, there appears to be an unusually large number of neoplasms of the extremities, of the reticulo-endothelial system (RES), and of other sites (see Appendix for currently available information). The majority of these neoplasms appear to have occurred in young people.

I have reviewed materials suggesting radiation contamination of the IEL site and surrounding groundwater. There is also evidence of contamination with benzene, vinyl chloride, and chlorophenols, among many other chemical agents.

Maureen Y. Lichtveld, MD, MPH
December 1, 1992
IEL Uniontown, Ohio (continued)

In my opinion, the case of Patient #1 (coupled with the anecdotal evidence of Appendix Patients #2 and #3, and the many other neoplams suggested in the Appendix) presents disturbing evidence that radiation (and possibly other carcinogens such as benzene, vinyl chloride, and chlorophenols) may be causing neoplasms among residents surrounding the IEL site. The routes of exposure are likely to include ingestion (well water, fruits and vegetables), skin absorption (well water for bathing and washing clothes, as well as swimming or playing in marshy areas near IEL), and inhalation (radiactive dusts released from the landfill, radioactive gases released from contaminated ground and groundwater).

I urge you to consider an immediate review of cancer death certificates from 1970 to the present for the counties surrounding the IEL site. The neoplasms of greatest concern, based on my informal interviews, are those of a) bone and soft tissue, b) the reticulo-endothelial system, c) breast, d) thyroid, and e) CNS.

Thank you for your consideration, and please let me know if I can be of assistance in your investigations.

Yours truly,

Elaine B. Panitz, MD, FACP, FACPM

EBP/jp

Maureen Y. Lichtveld, MD, MPH
December 1, 1992
IEL Uniontown, Ohio (continued)

APPENDIX

Patient #1

He was born on 5/23/69 to a family living on the western border of the IEL site. They had moved into the home in 1965 and noted that they did not like the "salty" taste of the water. He drank the and bathed in the well water, and his mother cooked family meals with the well water. He suffered "colic" curing his first 1-2 months, then diarrhea from ages 1 to 2. He had "roseola" over his abdomen in first grade.

When he was 5 years old his father excavated part of the back yard and created a pond which filled from spring waters, and may also have communicated with nearby Metzger's ditch. His father would periodically raise the pond's water level with well water if it became low. He swam in the pond during summer months, from the end of May to early September.

He was without complaints until age 19 when his right knee began to cause him discomfort. His physician noted a bony mass in the right lateral aspect of his knee. Xrays showed "an expansile lesion at the right proximal fibula with resultant lytic bone destruction...the findings may indicate osteogenic sarcoma". CT of the right knee at Akron General Medical Center showed "malignant destruction, proximal fibula, such as with osteogenic sarcoma" (11/25/88). The radiology report was stamped "Copy to pathology first, then file".

Open biopsy of the fibula revealed a frozen section diagnosis of "malignant spindle cell neoplasm, ? osteogenic sarcoma or ?? fibrosarcoma" (12/15/88). Microscopic examination stated that "evidence of true bone formation or osteoid formation by this neoplasm is not convincingly demonstrated in this biopsy".

The slides were reviewed by University Pathologists of Cleveland. They agreed with the diagnosis of malignant fibrous histiocytoma, but also noted that "although no malignant tumor bone is present in the sections examined, this case may represent an MFH variant of osteogenic sarcoma in which only the intramedullary component may contain malignant osseous tissue" (12/15/88).

Thereafter, partial resection of the proximal right upper leg was performed. Despite the radiographic opinions, and the presence of osteoid and malignant bone formation throughout the tumor sections, the pathologist at Akron General opined that the tumor was a malignant fibrous histiocytoma, and not osteosarcoma.

CT of the chest on 12/22/88 was normal, with no evidence of pulmonary metastases, but the spleen was borderline enlarged. He thereafter underwent chemotherapy and radiotherapy. His surgical wound failed to heal, and on 5/26/89 repeat CT of the thorax showed a left upper lobe lung nodule and focal areas of abnormality within the spleen. Four lung nodules were resected on 8/17/89 and the pathologic diagnosis was "giant cell sarcoma consistent with the previously diagnosed malignant fibrous histiosarcoma" (8/21/89).

Despite additional chemotherapy, pulmonary metastases recurred by June of 1990. On 8/16/90 he again underwent surgery for removal of the metastases. Again the pathology diagnosis was "compatible with the patient's primary malignant fibrous histiocytoma" (8/21/90). Pulmonary and bony metastases recurred and he died on April 29, 1991.

Review of Tissue Slides and Radiography

At my request, slides from the initial biopsy, as well as the subsequent partial leg resection and resections of pulmonary metastases, have been reviewed by I. B. Pachter, MD, pathologist of Princeton, New Jersey. In her opinion, the malignancy is characterized by widespread osteoid and malignant bone formation, both in the original leg tumor and in the pulmonary metastases.

Also at my request, Charles B. Howard, MD, radiologist of Princeton, reviewed the various imaging studies and diagnosed malignancy of the right fibula, most likely osteosarcoma or Ewing's sarcoma. Upon review of the radiologic opinion, Dr. Pachter has stated that she has no doubt that the tumor is an osteosarcoma, and not a soft tissue sarcoma. Based on my review of all materials in this matter, I agree.

Patient #2

He is an 18 year old white male, living in Uniontown with his father and mother, about 2 miles east of the IEL site. While growing up, he and his friends used to swim in a lake in Atwater Park, immediately southeast of IEL, adjacent to Metzger's ditch, a lake which has been open from the 1950's until the late 1970's when it was closed. He swam there from about ages 4 to 9, and more or less daily for at least two summers, and off and on during other summers. He also played repeatedly at a friend's house just north of the site. He and his group of friends used to play in the swampy areas of Metzger's ditch.

Maureen Y. Lichtveld, MD, MPH
December 1, 1992
IEL Uniontown, Ohio (continued)

In 1988, at age 14, he developed a "chondroblastoma" (pathology reports and slides have been requested for confirmation) of the proximal right humerus. The tumor was removed and a bone graft was placed. There are recurrent symptoms at this time and evaluation is in progress.

Patient #3

He is a 43 year old white male living in Stone Mountain, Georgia. He lived 1/2 to 3/4 of a mile west, south-west of the IEL site, on Kreighbaum Road, from ages 5 to 20 (from 1954 to 1969). His backyard had a swampy area that was dredged and spontaneously filled with spring water and became a lake in 1960.

He and his friends played in the swampy areas between his house and IEL. They also picked and ate huckleberries in the swampy area, and he and his family ate strawberries raised by his father in the swampy area. They drank well water. In 1988 he developed an "osteoid osteoma", a benigh bone tumor, in the distal left femur (pathology report and slides have been requested for confirmation). It was removed surgically by J. J. Shah, MD, orthopedic surgeon of Lilburn, Georgia.

He was thereafter without symptoms until 1 month ago when he developed an enlarged lymph node under the right jaw. Biopsy showed non-Hodgkin's lymphoma (pathology report and slides have been requested for confirmation). His oncologist is Jeffrey A. Scott, MD, Tucker, Georgia. The slides were reviewed by the Mayo Clinic as well. Further work-up revealed an enlarged spleen and enlarged lymph nodes around one kidney. He is about to begin combined radiation therapy and chemotherapy.

REPORTS OF OTHER POSSIBLE BONE NEOPLASMS IN NEIGHBORHOOD

D. C., 15 year old white female of Navarre, Ohio, developed a "benign leg tumor" of the right femur, at age 10. Termed a "soft bone tumor" by her physician. He described it as "extremely deep in the bone, and bone had started to grow around the tumor". It was removed and there has been no regrowth. Surgery performed in University Hospital, Cleveland, Ohio.

X. K., in her 20's, developed "tumors of the skull and shoulders".

F. L., lived on the border of the IEL site, died of "bone cancer".

Maureen Y. Lichtveld, MD, MPH
December 1, 1992
IEL Uniontown, Ohio (continued)

B. S., 8 year old white male, lives on Mulberry Street near Metzger's ditch in Uniontown, about 1/2 mile southwest of IEL site. At age 3 he developed an "arm tumor".

Unknown woman, lives on Carl Street, lives northwest of IEL site, has developed a "bone cancer".

REPORTS OF POSSIBLE RES MALIGNANCIES IN NEIGHBORHOOD

X. B., child of Harold Brooks, died of "leukemia" under the age of 15, lived on Redwood, just north of IEL site.

M. B., 25 year old white male, lived on Broad Vista, near Cleveland Avenue and 619 intersection, had three "neck tumors" removed when he was 13.

X. C., reportedly has a "huge tumor in the chest".

X. F., Basswood Avenue, Uniontown, lives near the Stevenson family, has "lymphoma" that reportedly started in the upper torso.

D. F., 34 year old white male living in Cincinnati since 1987, brother of Case 3 above. He lived in Uniontown to west and southwest of IEL, about 1/2-3/4 of a mile, on Kreighbaum Road, from 1958 to 1969, from birth to age 11. He played in the dump and drank well water. He developed mediastinal lymphadenopathy in 1989, at age 31, had bronchoscopy that showed "inflamed lymph nodes", treated with prednisone and improved.

M. F. and L. F., parents of D. F. and E. F. above, still living in Uniontown. They have lived there since at least 1954, on Kreighbaum Road. M. F. reportedly also developed enlarged lymph nodes in his chest, was told he had "sarcoidosis", in his mid-30's.

K. H. or C. H., one of them died of "leukemia", lived on Redwood and 619, north of IEL.

V. S., lived west of IEL, moved out of state around 1984, developed "lymphoma".

A. S., died of "leukemia" under age 12, lived north of dump within about 1/4 mile, died in 1991.

REPORTS OF POSSIBLE PRIMARY BRAIN TUMORS IN NEIGHBORHOOD

C. B., next door neighbor of M. B. above, died at age 19 of "brain cancer" in 1990.

J. C., has developed a "brain cancer".

T. S., of Killian Road, Uniontown, died of "primary brain cancer" at age 8 (a sibling died of "epiglottitis"). Family lived almost directly north of IEL.

A. W., at age 16 performed an epidemiologic study, as a high school science project, of primary brain cancer deaths to the north of the IEL site. She obtained a printout of all cancer deaths in three counties around Uniontown from the Ohio Department of Health from 1982-1987. She found a statistically significant increase in risk for death from primary brain cancer (SMR of about 200), in the area to the north of IEL. The increase was reportedly detectable up to 20 miles away. She attempted to relate it to groundwater movement but was unsuccessful. Now states she is unable to find the ODOH printout or study materials.

REPORTS OF POSSIBLE THYROID NEOPLASMS IN NEIGHBORHOOD

S. M., lives adjacent to IEL to northwest, has a "thyroid problem".

M. F. H., 45 year old white female, lives on Kreighbaum Road, Uniontown, lived about 2 miles west of IEL from 1952-1973 (ages 5-26). Developed two benign breast tumors at age 32, then a benign thyroid tumor (originally believed to be malignant) at age 34 (see below).

REPORTS OF POSSIBLE BREAST NEOPLASMS IN NEIGHBORHOOD

M. F. H. 45 year old white female, lives on Kreighbaum Road, Uniontown, lived about 2 miles west of IEL from 1952 to 1973 (ages 5-26). At age 32 she developed two benign breast tumors. At age 34 she had a benign thyroid tumor (which at first was believed to be malignant). She helped her father plant and weed a strawberry patch just south of IEL (land that her father rented) each summer. She ate the strawberries and played in the marshy fields.

C. M., now age 46, lives on Eaver Street, has had 2-3 breast tumors through the years.

A. P., neighbor (two doors away) of M. F. H., died of breast cancer at age 34.

T. P., 26 year old white male, friend of M. B. and R. B. above, lived on North Vista, required surgery for abnormal breast development.

REPORTS OF OTHER POSSIBLE NEOPLASMS IN NEIGHBORHOOD

M. B., white male friend of M. B. and R. B. above, lived near Dawn Avenue, now has "cancer".

R. B., 26 year old white male, brother of M. B. (above), had "tumors of the larynx" removed at age 9. Played in landfill and used an old house there as a fort.

X. C. died of lung cancer, used to drive dump truck and dump liquids (latex) into IEL site for Killian Manufacturing (made rubber products).

J. C., MD, physician of M. F. H., grew up 1 mile north of Lake Center, his father died of "cancer" in his 60's.

L. G., 12506 Cleveland Avenue, died of "pulmonary problems" in her 50's.

M. G., her husband has developed "cancer".

J. B., reports of "cancer" in family.

W. K., lived at 12428 Cleveland Avenue, died of "pulmonary problems", may have owned the well that showed "1,060,000 pCi/L".

R. K., nurse in Uniontown, has a listing of some 90 health complaints, including many malignancies, compiled from the neighborhood.

G. P., in his late 50's, died recently, lived just south of the IEL site on Eaver Street, ? "cancer".

S. P., his grandmother rents from father of Case 1, she has "cancer".

K. S., 22 year old white male, had "tumors" removed, played around the dump.

Maureen Y. Lichtveld, MD, MPH
December 1, 1992
IEL Uniontown, Ohio (continued)

Unknown man, living on Brouse Street, Greentown, died of "cancer".

Unknown man, living on Brouse Street, Greentown, died of "cancer".

N. W., his sister died of "cancer" in the area.

C. W., son of M. F. W., is a 24 year old white male. M. F. W. grew up near the IEL site from ages 10 to 25. C. W. grew up 5 miles south of the IEL site drinking well water. He played near the site as at his grandparents' home. At age 22 C. W. developed a "testicular cancer" and the testicle was removed. Lymph nodes were positive and he had chemotherapy. Alive.

J. W., friend of M. B. and R. B. above, who played with them in the landfill, lived on Dawn Avenue, reportedly now has "cancer".

PPLM

PRINCETON PATHOLOGY + LABORATORY MEDICINE PA

ILANA B. PACHTER M.D.

July 15, 1992

Elaine Panitz, M.D.
34 Cleveland Lane
Princeton, NJ 08540

RE: Blanton, B. Beltz

Dear Dr. Panitz:

Thank you for sending me Dr. Charles Howard's report of the radiologic finding in this case. As I mentioned in my letter of June 24, 1992, the radiologic findings are crucial in the interpretation of soft tissue and bone tumors.

Since the histological findings are consistent with osteogenic sarcoma (osteosarcoma) the supportive evidence of the radiologic interpretation leaves no doubt in my mind that we are indeed dealing with osteogenic sarcoma extending into the surrounding soft tissues and not with a soft tissue sarcoma invading the bone. The diagnosis of Ewing sarcoma however is incompatible with the histopathology in this case.

Thank you very much for the follow up in this case.

Sincerely,

Ilana B Pachter

Ilana B. Pachter, M.D.

cc: file

PPLM

PRINCETON PATHOLOGY & LABORATORY MEDICINE, P.A.

ILANA B. PACHTER M.D.

June 24, 1992

Elaine Panitz, M.D.
34 Cleveland Lane
Princeton, NJ 08540

RE: Blanton, B. Beltz
PPLM #C92-1754
Akron City Hosp., #88-15776 (7 slides)
Akron General, #88-11546 (2 slides)
#89-8043 (8 slides), #90-8161 (15 slides)
and corresponding reports.

Dear Dr. Panitz:

At your request I reviewed the slides and reports on Mr. Beltz.

My impression is that he had **High grade sarcoma with focal osseous and cartilaginous differentiation and multiple bilateral pulmonary metastases.**

Comments: The differential diagnosis in this case is between osteosarcoma of the fibula and extending into the surrounding soft tissues and a pleomorphic sarcoma of soft tissue with bony and cartilaginous metaplasia invading and destroying the fibula. Generally malignant soft tissue tumors occur more commonly after age 45 while osteogenic sarcomas occur more commonly between 15 and 35. However this age distribution may not apply in the presence of exposure to toxic tumorigenic substances.

Evaluation of the clinical history and especially the radiologic findings may be helpful in establishing the origin of this tumor.

Sincerely,

Ilana B Pachter

Ilana B. Pachter, M.D.

cc: file

INFORMAL COMMUNITY HEALTH SURVEY

Breast Cancer

Dawn Street (1)
Kreighbaum Road (4)
Krieghbaum Road (Maxine Finley two tumors at 32)
Krieghbaum Road (Ada Peters, died of breast cancer at 34)
Sunset Circle (3)
Theeland near Broadvista
Fairwynde Glen
Basswood Avenue
Jamestowne
Peppertree
Foxfire
Pine Lakes Trail
Heartwood (2)
Eaver (5)
Eaver (Carolyn Merritt)
Dotwood (2)
Cain (4)

Leukemia

Meandering Circle (child)
Redwood & 619 (Hosey)
Twin Hills
Redwood (Brooks-deceased, under 15)
_____(Angie Swords-deceased, under 12)

Lymphoma

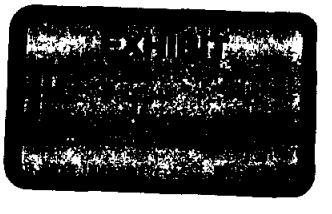
Twin Hills (Sue Ruley)
Timberland
Mulberry
West of IEL (Safcheck-moved out of state)
Basswood Avenue (Fellingham)

Ovarian Cancer

Sunset Circle
Eaver

Colon Cancer

Leafland



Stomach Cancer

Townsend
Hampton

Brain Cancer

Williamsburg
Springwater
Sesame Street
Nutmeg Circle (spinal tumor) (2-father and daughter)
Broad Vista (Carmen Best died at age 19-next door to Brunty)
_____ (Jason Clements)
Killian Road (Tracy Skye "primary brain cancer, deceased age 8)
Killian Road (Skye child ("epiglottitis")

Bone Cancer

Cleveland Avenue (Blanton Beltz- osteosarcoma) (deceased)
_____(chrondoblastoma)
Krieghbaum Road (Eugene Finley- osteoid osteoma (1988), non Hodgkin's lymphoma, enlarged spleen and lymphnodes around kidney(1992))
_____ (Danielle Carroll -"soft bone tumor"))
_____ (Kurfis - "tumors of skull and shoulders")
Border of IEL (Frank Lesho- "bone cancer)(deceased)
Mulberry Street (Barry Stevenson- developed "arm tumor" at age 3)
Carl Street

Lung Cancer

_____(Cassetty, truckdriver at IEL)

Other

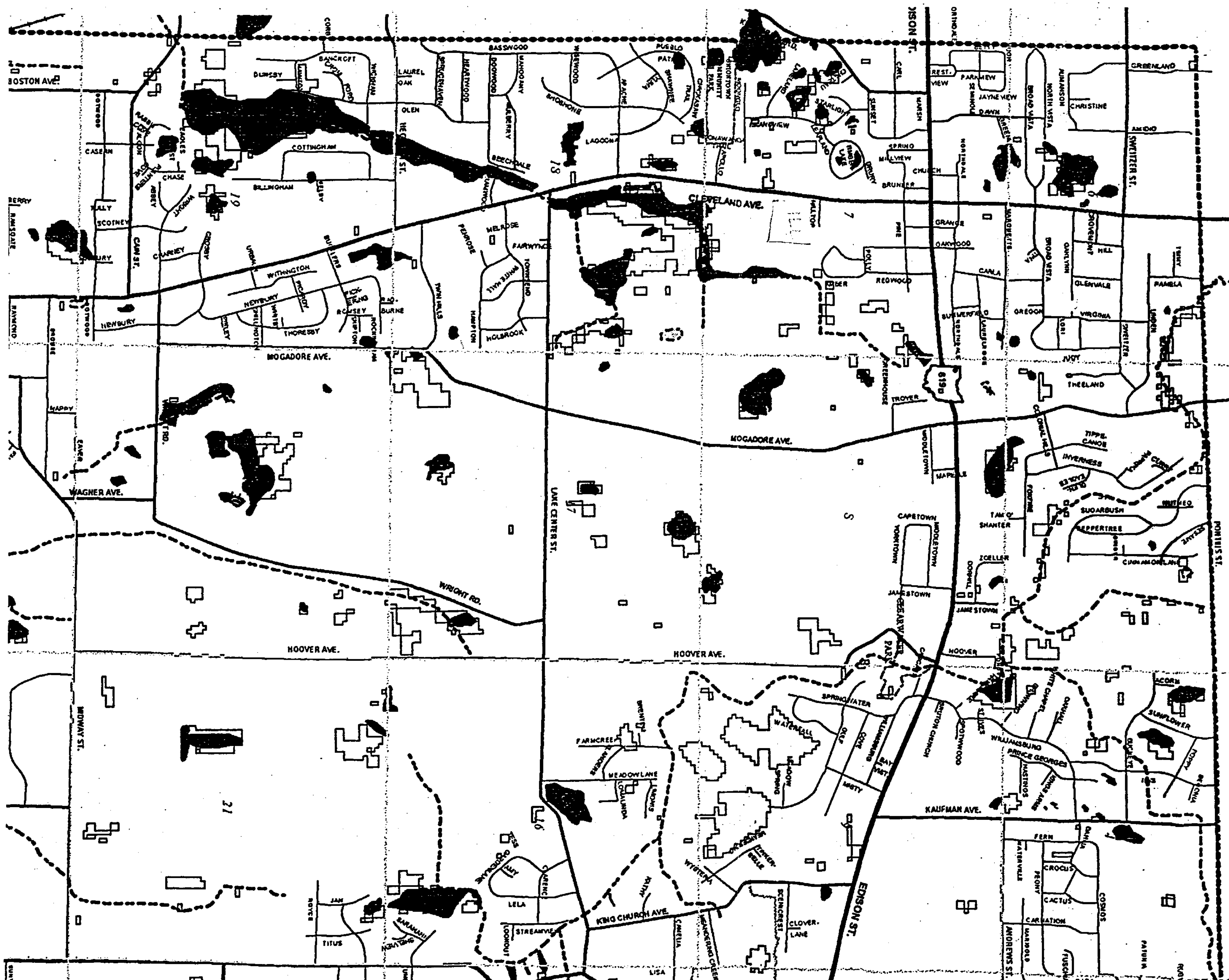
Broad Vista (Mark Brunty-"neck tumors" at 13)
_____ (Clark-"chest tumor")
Kreighbaum Road (Dale Finley- mediastinal lymphadenopathy at 31, inflamed lymph nodes)
Krighbaum Road (Myles Finley-sarcoidosis in mid 30's)
Dawn Avenue (Mont Binds-"cancer")
Broad Vista (Ronald Brunty-"tumors of the larynx at 9)
_____(Jarrett Family "cancer)
Eaver Street (Glenn Palmer "cancer")
Brouse Street ("cancer")
Dawn Avenue (Jim Wormald "cancer")

Birth Defects

Basswood (child born without digestive enzymes)
_____ (child born with ancephaly across from landfill)
High Rate of Miscarriages in IEL Neighborhood studied in 1960s

Lou Gehrig's Disease

Twin Hills (2)
Teacher working at elementary school near IEL


BOSTON AVE.
CLEVELAND AVE.
MOGADORE AVE.
WAGNER AVE.
WRIGHT RD.
HOOVER AVE.
KAUFMAN AVE.
KING CHURCH AVE.
EDISON ST.
LAKE CENTER ST.
MIDWAY ST.
SWEITZER ST.
PONTIUS ST.
ANDREWS ST.
COTTINGHAM
BILLINGHAM
NEWBURY
THORESBY
HOLBROOK
TROYER
CAPETOWN
JAMESTOWN
SPRINGWATER
WILLIAMSBURG
PRINCE GEORGES
SUGARBUSH
PEPPERTREE
CINNAMON LANE
SUNFLOWER
ACORN
FERN
CROCUS
CACTUS
CARNATION
CLOVER LANE
MEADOW LANE
FARMCREST
LELA
TITUS
LISA
SARA

STATEMENT UNDER OATH OF

KENNY CATLETTE

May 31, 1984

7:20PM

Location: Lake Township Government Offices

Present: David Herbert, Chris Borello, Mr. Kenny Catlette

Mr. Catlette was put under oath as required by law, by David L. Herbert, Esquire, Notary Public. Mr. Herbert did the questioning.

Q. Where do you live Mr. Catlette?

A. In Akron, 161 Hilbish Avenue.

Q. What is your phone number?

A. 733-7445

Q. How long have you lived there?

A. 18 years.

Q. Where are you employed?

A. Independent Lift Truck.

Q. What do you do for them?

A. Mechanic.

Q. How long have you been employed by them?

A. I just started there a month ago.

Q. Prior to that where were you employed?

A. Tow Lift, Inc.

Q. What did you do for them?

A. Service Manager.

Q. How long were you there?

A. 5½ years.

Q. Prior to that where were you employed?

EXHIBIT "H"

Q. Now, it's also our understanding that you had began installing trenches from where the ponds and lagoons were back to the ditch.

A. To the creek.

Q. Tell us about that. Who told you to do that and why? If you know.

A. Hybud probably told Gene Laston to do it. But to my knowledge they never made it to the creek.

Q. Did they start doing ditches from the Lake or the pond back to the creek?

A. They started, yes.

Q. Is that where most of the drain, the topography of the area seems to be that the drains surface, perhaps the underground water flows that way too. Is that what you were able to observe?

A. Yeah.

Q. Is that the way the liquids flowed when they were dumped there/

A. Yeah, they were dumped up on top and ran to the pond.

Q. In terms of the barrells, the number of barrells that were left there, where their contents were not opened and dumped, but just the barrell was left, over the two year period that you observed, these hundred barrells a day, how many would have been left...approximately.

A. A two year period?

Q. Yes.

A. I have no idea to know for sure, probably 4 or 5 hundred.

Q. OK. You understand that when you're saying 4 or 5 hundred over the whole period?

A. That was left.

Q. That was left.

Q. OK. We're back on the tape again; I had to flip the tape. You understand that when you're talking about perhaps 100 barrells a day over a two year period, and you say 300 days a year, you're talking about 60,000 barrells.

OHIO UNIVERSAL ARARs

CATEGORY	ORC	OAC	PERTINENT PARAGRAPH	TITLE OR SUBJECT OF REGULATION	DESCRIPTION OF REGULATION	APPLICATION OF REGULATION	REF #	ARAR TYPE	ARAR TYPE	FEDERAL REGULATION	LAST REVISION
SW	1518.02			ENDANGERED PLANT SPECIES	Prohibits removal or destruction of endangered plant species (some private property exceptions).	Applies to remediation sites where chemicals may harm endangered species. Clearly establishes that receptor plant species must be considered in risk assessments. This act may require consideration of endangered species in remediations that involve movement or displacement of large volumes of surface soil.					8/23/78
WS	1521.06			CONSTRUCTION PERMITS FOR DAMS,DIKES AND LEVEES	NO DAM MAY BE CONSTRUCTED FOR THE PURPOSE OF STORING, CONSERVING OR RETARDING WATER, OR FOR ANY OTHER PURPOSE, NOR SHALL ANY DIKE OR LEVEE BE CONSTRUCTED FOR THE PURPOSE DIVERTING OR RETAINING FLOOD WATER WITHOUT A PERMIT.	THE SUBSTANTIVE REQUIREMENTS OF THIS SECTION PERTAIN TO REMEDIES THAT WILL CREATE OR ALTER A DAM, DIKE OR LEVEE. CONSIDER FOR SITES WITH ON SITE SURFACE WATER AND FOR SITES WITHIN A FLOODPLAIN.		ACTION			
WS	1521.062		A-G	MONITORING, MAINTENANCE & OPERATION (DAMS,DIKES,LEVEES)	DAMS, DIKES AND LEVEES (AND ALL APPURTENANCES) SHALL MONITORED, MAINTAINED AND OPERATED SAFELY IN ACCORDANCE WITH STATE RULES, TERMS AND CONDITIONS OF THE PERMIT AND OTHER REQUIREMENTS ISSUED PURSUANT TO THIS SECTION OR SECTION 1521.06 OF THE ORC.	THE SUBSTANTIVE REQUIREMENTS OF THIS SECTION PERTAIN TO REMEDIES THAT WILL CREATE OR ALTER A DAM, DIKE OR LEVEE. CONSIDER FOR SITES WITH ON SITE SURFACE WATER AND FOR SITES WITHIN A FLOODPLAIN.		ACTION			
APC	3704.05		A-I	PROHIBITS VIOLATION OF AIR POLLUTION CONTROL RULES	PROHIBITS EMISSION OF AN AIR CONTAMINANT IN VIOLATION SEC. 3704 OR ANY RULES, PERMIT, ORDER OR VARIANCE ISSUED PURSUANT TO THAT SECTION OF THE ORC.	MAY PERTAIN TO ANY SITE WHERE EMISSIONS OF AN AIR CONTAMINANT OCCURS EITHER AS A PRE-EXISTING CONDITION OF THE SITE OR AS A RESULT OF REMEDIAL ACTIVITIES. SHOULD BE CONSIDERED FOR VIRTUALLY ALL SITES.	3745-15 TO 3745-26	CHEMICAL	ACTION		3/16/93
DD	3714.13			DEMOLITION DEBRIS FACILITIES - VIOLATIONS PROHIBITED	PROHIBITS VIOLATIONS OF ANY SECTION OF CHAPTER 3714 CONCERNING CONSTRUCTION AND DEMOLITION DEBRIS DISPOSAL FACILITIES OR ANY RULE OR ORDER ISSUED PURSUANT TO IT. DISPOSAL OF ASBESTOS IS SPECIFICALLY PROHIBITED WITHOUT AUTHORIZATION.	PERTAINS TO CONSTRUCTION AND DEMOLITION DEBRIS FACILITIES WHERE HAZARDOUS WASTE OR HAZARDOUS CONSTITUENTS HAVE COME TO BE LOCATED. CONSIDER FOR SITES WHERE REMEDIAL ACTION WILL INCLUDE DEMOLITION OF STRUCTURES OR ASBESTOS HAS COME TO BE LOCATED.		ACTION			3/16/93
HW	3734.02		(G)	EXEMPTIONS TO SOLID & HAZ. WASTE T/S/D REQUIREMENTS	PROVIDES AUTHORITY AND CONDITIONS BY WHICH THE DIRECTOR MAY EXEMPT ANY PERSON FROM PERMITTING OR OTHER REQUIREMENTS GOVERNING THE GENERATION, STORAGE, TREATMENT, TRANSPORT OR DISPOSAL OF SOLID OR HAZARDOUS WASTE.	PERTAINS TO ANY SITE AT WHICH SOLID OR HAZARDOUS WASTE HAS COME TO BE LOCATED. CERTAIN ALTERNATIVES INCLUDE EXCAVATION ACTIVITIES WHICH MAY UNCOVER SOLID AND/OR HAZARDOUS WASTE. SHOULD THOSE ACTIVITIES REQUIRE THE MANAGEMENT OF SOLID/HAZARDOUS WASTES ON-SITE, AN EXEMPTION TO PERMITTING AND OTHER REQUIREMENTS MAY BE WARRANTED.		ACTION			
HW	3734.02		(H)	"DIGGING" WHERE HAZ OR SOLID WASTE FACILITY WAS LOCATED	FILLING, GRADING, EXCAVATING, BUILDING, DRILLING OR MINING ON LAND WHERE HAZARDOUS WASTE OR SOLID WASTE FACILITY WAS OPERATED IS PROHIBITED WITHOUT PRIOR AUTHORIZATION FROM THE DIRECTOR OF THE OHIO EPA.	PERTAINS TO ANY SITE AT WHICH HAZARDOUS OR SOLID WASTE HAS COME TO BE LOCATED. CERTAIN ALTERNATIVES INCLUDE EXCAVATION ACTIVITIES WHICH MAY UNCOVER SOLID AND/OR HAZARDOUS WASTE. SHOULD THOSE ACTIVITIES REQUIRE THE MANAGEMENT OF SOLID/HAZARDOUS WASTES ON-SITE, AN EXEMPTION TO PERMITTING AND OTHER REQUIREMENTS MAY BE WARRANTED.		LOCATION	ACTION		
HW APC	3734.02		(I)	AIR EMISSIONS FROM HAZARDOUS WASTE FACILITIES	NO HAZARDOUS WASTE FACILITY SHALL EMIT ANY PARTICULATE MATTER, DUST, FUMES, GAS, MIST, SMOKE, VAPOR OR ODOROUS SUBSTANCE THAT INTERFERS WITH THE COMFORTABLE ENJOYMENT OF LIFE OR PROPERTY OR IS INJURIOUS TO PUBLIC HEALTH.	PERTAINS TO ANY SITE AT WHICH HAZARDOUS WASTE WILL BE MANAGED SUCH THAT AIR EMISSIONS MAY OCCUR. CONSIDER FOR SITES THAT WILL UNDERGO MOVEMENT OF EARTH OR INCINERATION.					

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CATEGORY	ORC	OAC	PERTINENT PARAGRAPH	TITLE OR SUBJECT OF REGULATION	DESCRIPTION OF REGULATION	APPLICATION OF REGULATION	REF	ARAR TYPE 1	ARAR TYPE 2	FEDERAL REGULATION	LAST REVISION
IW	3734.02.1			STANDARDS FOR INFECTIOUS WASTE HANDLING AND TREATMENT	ESTABLISHES STANDARDS FOR GENERATORS, TRANSPORTERS, AND OWNER OPERATORS OF TREATMENT FACILITIES FOR INFECTIOUS WASTE.	PERTAINS TO ALL SITE AT WHICH INFECTIOUS WASTE HAS COME TO BE LOCATED AND/OR INFECTIOUS WASTE MIGHT BE COMMINGLED WITH ANY OTHER TYPE OF WASTE.		CHEMICAL	ACTION		3/15/93
HW	3734.02.7		A,B	HANDLING LOW-LEVEL RADIOACTIVE WASTE PROHIBITED	A) PROHIBITS COMMINGLING LOW LEVEL RADIOACTIVE WASTE WITH ANY TYPE OF SOLID WASTE, HAZARDOUS WASTE, OR INFECTIOUS WASTE. B) NO OWNER OR OPERATOR OF A SOLID, INFECTIOUS OR HAZARDOUS WASTE FACILITY SHALL ACCEPT FOR TRANSFER, STORAGE, TREATMENT OR DISPOSAL OF ANY RADIOACTIVE WASTE.	PERTAINS TO ALL SITES AT WHICH LOW LEVEL RADIOACTIVE WASTE HAS COME TO BE LOCATED		CHEMICAL	ACTION		3/15/93
SW	3734.03			PROHIBITS OPEN DUMPING OR BURNING	PROHIBITS OPEN BURNING OR OPEN DUMPING OF SOLID WASTE OR TREATED OR UNTREATED INFECTIOUS WASTE.	PERTAINS TO ANY SITE AT WHICH SOLID WASTE HAS COME TO BE LOCATED OR WILL BE GENERATED DURING A REMEDIAL ACTION.	3745-19, 3745-27-05	ACTION	LOCATION		3/15/93
SW	3734.04.1		A,C,D,G	EXPLOSIVE GAS MONITORING	REQUIRES EXPLOSIVE GAS MONITORING PLANS FOR SANITARY LANDFILLS AND PROVIDES AUTHORITY TO THE DIRECTOR OF OHIO EPA TO ORDER AN OWNER OR OPERATOR OF A FACILITY TO IMPLEMENT AN EXPLOSIVE GAS MONITORING AND REPORTING PLAN	PERTAINS TO ALL SANITARY LANDFILLS EXCEPT FOR THOSE THAT DISPOSED OF NONPUTRESCIBLE WASTES.	3745-27-12	LOCATION	ACTION		3/15/93
HW	3734.05		(D)(6)(c)	HAZARDOUS WASTE FACILITY ENVIRONMENTAL IMPACT	A HAZARDOUS WASTE FACILITY INSTALLATION AND OPERATION PERMIT SHALL NOT BE APPROVED UNLESS IT PROVES THAT THE FACILITY REPRESENTS THE MINIMUM ADVERSE ENVIRONMENTAL IMPACT, CONSIDERING THE STATE OF AVAILABLE TECHNOLOGY, THE NATURE AND ECONOMICS OF VARIOUS ALTERNATIVES AND OTHER PERTINENT CONSIDERATIONS	PERTAINS TO ALL SITES AT WHICH HAZARDOUS WASTE HAS COME TO BE LOCATED AND/OR AT WHICH HAZARDOUS WASTE WILL BE TREATED, STORED OR DISPOSED OF. MAY FUNCTION AS SITING CRITERIA					

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CATEGORY	ORC	OAC	PERTINENT PARAGRAPH	TITLE OR SUBJECT OF REGULATION	DESCRIPTION OF REGULATION	APPLICATION OF REGULATION	REF	ARAR TYPE 1	ARAR TYPE 2	FEDERAL REGULATION	LAST REVISION
HW	3734.05		(D)6.d.g.h	HAZARDOUS WASTE SITING CRITERIA	(D).6.d. A HAZARDOUS WASTE FACILITY INSTALLATION AND OPERATION PERMIT SHALL NOT BE APPROVED UNLESS IT PROVES THAT THE FACILITY REPRESENTS THE MINIMUM RISK OF ALL OF THE FOLLOWING: (i)CONTAMINATION OF GROUND AND	PERTAINS TO ALL SITES AT WHICH HAZARDOUS WASTE HAS COME TO BE LOCATED AND/OR AT WHICH HAZARDOUS WILL BE TREATED, STORED OR DISPOSED OF. MAY FUNCTION AS SITING CRITERIA.		ACTION	LOCATION		
					SURFACE WATERS (ii)FIRES OR EXPLOSIONS FROM TREATMENT, STORAGE OR DISPOSAL METHODS (iii)ACCIDENT DURING TRANSPORTATION (iv)IMPACT ON PUBLIC HEALTH AND SAFTEY (v)AIR POLLUTION (vi)SOIL CONTAMINATION (D).6.g.h PROHIBITS THE FOLLOWING LOCATIONS FOR TREATMENT, STORAGE AND DISPOSAL OF ACUTE HAZARDOUS WASTE: (i) WITHIN 2000 FEET OF ANY RESIDENCE, SCHOOL, HOSPITAL, JAIL OR PRISON, (ii) ANY NATURALLY OCCURRING WETLAND (iii) ANY FLOOD HAZARD AREA (iv) WITHIN ANY STATE PARK OR NATIONAL PARK OR RECREATION AREA						
SW	3734.11		(C)	SOLID WASTE FACILITY PROHIBITED IN PARKLANDS	PROHIBITS THE SITING OF ANY SOLID WASTE FACILITIES WITHIN STATE PARK, NATIONAL PARK OR NATIONAL RECREATION AREA.	PERTAINS TO SITES LOCATED WITHIN PARKLANDS SITING CRITERIA		LOCATION			
HW	3734.14.1			CONDITIONS FOR DISPOSAL OF ACUTE HAZARDOUS WASTE	PROHIBITS DISPOSAL OF ACUTE HAZARDOUS WASTE UNLESS IT: (1) CANNOT BE TREATED, RECYCLED OR DESTROYED, (2) HAS BEEN REDUCED TO ITS LOWEST LEVEL OF TOXICITY, AND (3) HAS BEEN COMPLETELY ENCAPSULATED OR PROTECTED TO PREVENT LEACHING	PERTAINS TO ANY SITE WHERE ACUTE HAZARDOUS WASTE HAS COME TO BE LOCATED		CHEMICAL	ACTION		3/17/93
APC WS	3767.13			PROHIBITION OF NUISANCES	PROHIBITS NOXIOUS EXHALATIONS OR SMELLS AND THE OBSTRUCTION OF WATERWAYS	PERTAINS TO ANY SITE THAT MAY HAVE NOXIOUS SMELLS OR MAY OBSTRUCT WATERWAYS		ACTION	CHEMICAL		
WS	3767.14			PROHIBITION OF NUISANCES	PROHIBITION AGAINST THROWING REFUSE, OIL, OR FILTH INTO LAKES, STREAMS, OR DRAINS.	PERTAINS TO ALL SITES LOCATED ADJACENT TO LAKES, STREAMS, OR DRAINS.		ACTION	CHEMICAL		3/15/93
WS	6101.19			CONSERVANCY DISTRICTS	BOARD OF DIRECTORS OF A CONSERVANCY DISTRICT MAY MAKE AND ENFORCE RULES AND REGULATIONS PERTAINING TO CHANNELS, DITCHES, PIPES, SEWERS, ETC.	THIS STATUTE PERTAINS TO ANY SITE THAT MAY AFFECT A CONSTRUCTION WITHIN A CONSERVANCY DISTRICT.		ACTION			
WS	6111.04			ACTS OF POLLUTION PROHIBITED	POLLUTION OF WATERS OF THE STATE IS PROHIBITED	PERTAINS TO ANY SITE WHICH HAS CONTAMINATED ON-SITE GROUND OR SURFACE WATER OR WILL HAVE A DISCHARGE TO ON-SITE SURFACE OR GROUND WATER.		ACTION			
WS	6111.04.2			RULES REQUIRING COMPLIANCE WITH NATIONAL EFFLUENT STDS	ESTABLISHES REGULATIONS REQUIRING COMPLIANCE WITH NATIONAL EFFLUENT STANDARDS	PERTAINS TO ANY SITE WHICH WILL HAVE A POINT SOURCE DISCHARGE		ACTION			
WS	6111.04.3			INJECTION OF SEWAGE OR WASTES INTO WELLS	ESTABLISHES A REGULATORY PROGRAM FOR THE INJECTION OF WASTES INTO WELLS THAT PREVENTS THE CONTAMINATION OF UNDERGROUND SOURCES OF DRINKING WATER	PERTAINS TO ANY SITE THAT EITHER HAS OR INTENDS TO INJECT WASTES OF ANY TYPE INTO WELLS		ACTION			

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CATEGORY	ORC	OAC	PERTINENT PARAGRAPH	TITLE OR SUBJECT OF REGULATION	DESCRIPTION OF REGULATION	APPLICATION OF REGULATION	REF	ARAR TYPE 1	ARAR TYPE 2	FEDERAL REGULATION	LAST REVISION
WS	6111.07		A,C	WATER POLLUTION CONTROL REQUIREMENTS DUTY TO COMPLY	PROHIBITS FAILURE TO COMPLY WITH REQUIREMENTS OF SECTIONS 6111.01 TO 6111.08 OR ANY RULES, PERMIT OR ORDER ISSUED UNDER THOSE SECTIONS	PERTAINS TO ANY SITE WHICH HAS CONTAMINATED GROUND WATER OR SURFACE WATER OR WILL HAVE A DISCHARGE TO ON-SITE SURFACE OR GROUND WATER.		ACTION			3/16/93
SW		1501-18-1	03, A	LIST OF ENDANGERED PLANT SPECIES	PLANT SPECIES CONSIDERED ENDANGERED IN OHIO	MAY APPLY AT REMEDIATION SITES WHERE CHEMICAL RELEASE THREATENS					
						LISTED SPECIES. SHOULD ALSO BE CONSIDERED WHERE REMEDIAL ACTIVITIES MAY DISRUPT HABITATS					
REC		1501.14-3	11-Feb	SOIL AND DRAINAGE	REQUIREMENTS FOR RECLAMATION OF SURFACE MINED AREAS ISOLATION OF ACID DRAINAGE, RESTRICTION ON SURFACE WATER IMPOUNDMENTS, RULES FOR USE OF EXPLOSIVES, PROTECTION OF UNDERGROUND WATER SUPPLIES, SAFETY OF HIGHWALLS, RESOILING, REVEGETATION, DAMS AND DIVERSIONS	CONSIDER FOR SITES WITH SOIL BORROW AREAS OR EXTENSIVE EXCAVATION					7/12/96
REC		1501.14-4	3-Jan	GEOLOGICAL SURVEYS	REQUIRES SURVEY AND OTHER INFORMATION FOR SURFACE MINING.	CONSIDER FOR SITE WITH BORROW SOURCE AREA OR EXTENSIVE EXCAVATION					7/12/96
WS		1501.21-11	5-Mar	PREDESIGN INVESTIGATIONS (DAMS,DIKES,LEVEES)	PRESENTS PREDESIGN REQUIREMENTS FOR DAMS, DIKES AND LEVEES INCLUDES ON-SITE CONSTRUCTION MATERIAL DATA, SURVEYS AND HYROLOGIC AND HYDRAULIC INVESTIGATIONS	PERTAINS TO REMEDIES THAT CREATE OR ALTER A DAM, DIKE OR LEVEE. CONSIDER FOR SITES WITH ON-SITE SURFACE WATER AND FOR SITES WITHIN A FLOODPLAIN.		ACTION			
WS		1501.21-13	8-Feb	ADDITIONAL DESIGN REQUIREMENTS FOR DAMS	PRESENTS DESIGN REQUIREMENTS SPECIFIC TO DAMS. INCLUDES SUCH CRITERIA AS DESIGN STORM AND FLOOD, SPILLWAY DESIGN, FREEBOARD REQUIREMENTS, ETC.	PERTAINS TO REMEDIES THAT CREATE OR ALTER A DAM. CONSIDER FOR SITES WITH ON-SITE SURFACE WATER.		ACTION			
WS		1501.21-13	14-Oct	ADDITIONAL DESIGN REQUIREMENTS FOR DIKES AND LEVEES	PRESENTS DESIGN REQUIREMENTS SPECIFIC TO DIKES AND LEVEES. INCLUDES CRITERIA SUCH AS DESIGN STORM AND FLOOD AND FREEBOARD REQUIREMENTS.	PERTAINS TO REMEDIES THAT CREATE OR ALTER A DIKE OR LEVEE. CONSIDER FOR SITES WITHIN A FLOODPLAIN		ACTION			
WS		1501.21-15	6	OPERATION, MAINTENANCE AND INSPECTIONS	PRESENTS THE MINIMUM INFORMATION REQUIRED IN A PLAN ADDRESSING THE OPERATION, MAINTENANCE AND INSPECTION OF DAMS, DIKES AND LEVEES.	PERTAINS TO REMEDIES THAT CREATE OR ALTER A DAM, DIKE OR LEVEE. CONSIDER FOR SITES WITH ON-SITE SURFACE WATER AND FOR SITES WITHIN A FLOODPLAIN		ACTION			
WS		1501.21-21	4-Mar	DEFICIENCY AND O&M OF DAMS, DIKES AND LEVEES	DAMS, DIKES AND LEVEES MUST BE OPERATED SAFELY. REPAIRS OR OTHER REMEDIAL MEASURES SHALL BE PERFORMED ON DAMS, DIKES AND LEVEES AS NECESSARY TO SAFEGUARD LIFE, HEALTH OR PROPERTY.	PERTAINS TO REMEDIES THAT CREATE OR ALTER A DAM, DIKE OR LEVEE. CONSIDER FOR SITES WITH ON-SITE SURFACE WATER AND FOR SITES WITHIN A FLOODPLAIN.		ACTION			
WS		1501.21-5	6-Feb	DESIGN REQUIREMENTS FOR DAMS, DIKES AND LEVEES	SPECIFIES MINIMUM INFORMATION REQUIRED DURING DESIGN FOR OHIO DNR TO DETERMINE ADEQUACY OF PREPOSED DAM, DIKE OR LEVEE. INCLUDES DESIGN REPORTS, PLANS AND SPECIFICATIONS	PERTAINS TO REMEDIES THAT CREATE OR ALTER A DAM, DIKE OR LEVEE. CONSIDER FOR SITES WITH ON-SITE SURFACE WATER AND FOR SITES WITHIN A FLOODPLAIN.		ACTION			
SW		1501.31-23-	01, A-B	LIST OF ENDANGERED ANIMAL SPECIES	LIST OF OHIO ANIMAL SPECIES CONSIDERED ENDANGERED.	MAY APPLY TO REMEDIATION SITES WHERE LISTED SPECIES ARE THREATENED BY CHEMICAL RELEASES. MAY ALSO APPLY AT SITES WHERE REMEDIAL ACTIVITIES COULD DISTURB EXISTING HABITATS					
WS		3745-1-03		ANALYTICAL AND COLLECTION PROCEDURES	SPECIFIES ANALYTICAL METHODS AND COLLECTION PROCEDURES FOR SURFACE WATER DISCHARGES	PERTAINS TO BOTH DISCHARGES TO SURFACE WATERS AS A RESULT OF REMEDIATION AND ANY ON-SITE SURFACE WATERS AFFECTED BY SITE CONDITIONS		ACTION			

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CATEGORY	ORC	OAC	PERTINENT PARAGRAPH	TITLE OR SUBJECT OF REGULATION	DESCRIPTION OF REGULATION	APPLICATION OF REGULATION	REF	ARAR TYPE 1	ARAR TYPE 2	FEDERAL REGULATION	LAST REVISION
WS		3745-1-04	A,,B,C,D,E	THE "FIVE FREEDOMS" FOR SURFACE WATER	ALL SURFACE WATERS OF THE STATE SHALL BE FREE FROM A) OBJECTIONAL SUSPENDED SOLIDS B)FLOATING DEBRIS, OIL AND SCUM. C) MATERIALS THAT CREATE A NUISANCE. D) TOXIC, HARMFUL OR LETHAL SUBSTANCES.	PERTAINS TO BOTH DISCHARGES TO SURFACE WATERS AS A RESULT OF REMEDIATION AND ANY ON-SITE SURFACE WATERS AFFECTED BY SITE CONDITIONS.		CHEMICAL			
					E) NUTRIENTS THAT CREATE NUISANCE GROWTH						
WS		3745-1-05	A-F	ANTIDEGRADATION POLICY FOR SURFACE WATER	PREVENTS DEGRADATION OF SURFACE WATER QUALITY BELOW DESIGNATED USE OR EXISTING WATER QUALITY. EXISTING INSTREAM USES SHALL BE MAINTAINED AND PROTECTED. THE MOST STRINGENT CONTROLS FOR TREATMENT SHALL BE REQUIRED BY THE DIRECTOR TO BE EMPLOYED FOR ALL NEW AND EXISTING POINT SOURCE DISCHARGES. PREVENTS ANY DEGRADATION OF "STATE RESOURCE WATERS".	REQUIRES THAT BEST AVAILABLE TECHNOLOGY (BAT) BE USED TO TREAT SURFACE WATER DISHARGES. DWQPA USES THIS RULE TO SET STANDARDS WHEN EXISTING WATER QUALITY IS BETTER THAN THE DESIGNATED USE.		CHEMICAL			5/1/98
WS		3745-1-06	A,B	MIXING ZONES FOR SURFACE WATER	(A) PRESENTS THE CRITERIA FOR ESTABLISHING NON-THERMAL MIXING ZONES FOR POINT SOURCE DISCHARGES (B) PRESENTS THE CRITERIA FOR ESTABLISHING THERMAL MIXING ZONES FOR POINT SOURCE DISCHARGES	APPLIED AS A TERM OF DISCHARGE PERMIT TO INSTALL (PTI). WOULD PERTAIN TO AN ALTERNATIVE WHICH RESULTED IN A POINT SOURCE DISCHARGE		CHEMICAL			
WS		3745-1-07	C	WATER QUALITY CRITERIA	ESTABLISHES WATER QUALITY CRITERIA FOR POLLUTANTS WHICH DO NOT HAVE SPECIFIC NUMERICAL OR NARRATIVE CRITERIA IDENTIFIED IN TABLES 7-1 THROUGH 7-15 OF THIS RULE.	PERTAINS TO BOTH DISCHARGES TO SURFACE WATERS AS A RESULT OF REMEDIAL ACTION AND ANY SURFACE WATERS AFFECTED BY SITE CONDITIONS.		CHEMICAL	ACTION		3/18/93
WS		3745-1-08		WATER USE DES FOR HOCKING RIVER	ESTABLISHES WATER USE DESIGNATIONS FOR STREAM SEGMENTS WITHIN THE HOCKING RIVER BASIN	PERTINENT IF STREAM OR STREAM SEGMENT IS ON-SITE AND IS EITHER AFFECTED BY SITE CONDITIONS OF IF REMEDY INCLUDES DIRECT DISCHARGE. USED BY DWQPA TO ESTABLISH WASTE LOAD ALLOCATIONS		ACTION	LOCATION		4/21/92
WS		3745-1-09		WATER USE DES FOR SCIOTO RIVER	ESTABLISHES WATER USE DESIGNATIONS FOR STREAM SEGMENTS WITHIN THE SCIOTO RIVER BASIN	PERTINENT IF STREAM OR STREAM SEGMENT IS ON-SITE AND IS EITHER AFFECTED BY SITE CONDITIONS OF IF REMEDY INCLUDES DIRECT DISCHARGE. USED BY DWQPA TO ESTABLISH WASTE LOAD ALLOCATIONS		ACTION	LOCATION		4/26/97
WS		3745-1-10		WATER USE DES FOR GRAND RIVER	ESTABLISHES WATER USE DESIGNATIONS FOR STREAM SEGMENTS WITHIN THE GRAND RIVER BASIN.	PERTINENT IF STREAM OR STREAM SEGMENT IS ON-SITE AND IS EITHER AFFECTED BY SITE CONDITIONS OF IF REMEDY INCLUDES DIRECT DISCHARGE USED BY DWQPA TO ESTABLISH WASTE LOAD ALLOCATIONS.		ACTION	LOCATION		
WS		3745-1-11		WATER USE DES FOR MAUMEE RIVER	ESTABLISHES WATER USE DESIGNATIONS FOR STREAM SEGMENTS WITHIN THE MAUMEE RIVER BASIN	PERTINENT IF STREAM OR STREAM SEGMENT IS ON-SITE AND IS EITHER AFFECTED BY SITE CONDITIONS OF IF REMEDY INCLUDES DIRECT DISCHARGE. USED BY DWQPA TO ESTABLISH WASTE LOAD ALLOCATIONS		ACTION	LOCATION		
WS		3745-1-12		WATER USE DES FOR SANDUSKY RIVER	ESTABLISHES WATER USE DESIGNATIONS FOR STREAM SEGMENTS WITHIN THE SANDUSKY RIVER BASIN	PERTINENT IF STREAM OR STREAM SEGMENT IS ON-SITE AND IS EITHER AFFECTED BY SITE CONDITIONS OF IF REMEDY INCLUDES DIRECT DISCHARGE USED BY DWQPA TO ESTABLISH WASTE LOAD ALLOCATIONS		ACTION	LOCATION		

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WS		3745-1-13		WATER USE DES FOR CENTRAL OHIO TRIB	ESTABLISHES WATER USE DESIGNATIONS FOR STREAM SEGMENTS WITHIN THE CENTRAL OHIO TRIBUTARIES BASIN	PERTINENT IF STREAM OR STREAM SEGMENT IS ON-SITE AND IS EITHER AFFECTED BY SITE CONDITIONS OF IF REMEDY INCLUDES DIRECT DISCHARGE. USED BY DWQPA TO ESTABLISH WASTE LOAD ALLOCATIONS		ACTION	LOCATION		
WS		3745-1-14		WATER USE DES FOR ASHTABULA RIVER	ESTABLISHES WATER USE DESIGNATIONS FOR STREAM SEGMENTS WITHIN THE ASHTABULA RIVER BASIN	PERTINENT IF STREAM OR STREAM SEGMENT IS ON-SITE AND IS EITHER AFFECTED BY SITE CONDITIONS OF IF REMEDY INCLUDES DIRECT DISCHARGE USED BY DWQPA TO ESTABLISH WASTE LOAD ALLOCATIONS		ACTION	LOCATION		
WS		3745-1-15		WATER USE DES FOR L BEAVER CREEK	ESTABLISHES WATER USE DESIGNATIONS FOR STREAM SEGMENTS WITHIN THE LITTLE BEAVER CREEK BASIN	PERTINENT IF STREAM OR STREAM SEGMENT IS ON-SITE AND IS EITHER AFFECTED BY SITE CONDITIONS OF IF REMEDY INCLUDES DIRECT DISCHARGE. USED BY DWQPA TO ESTABLISH WASTE LOAD ALLOCATIONS		ACTION	LOCATION		
WS		3745-1-16		WATER USE DES FOR SE OHIO TRIB	ESTABLISHES WATER USE DESIGNATIONS FOR STREAM SEGMENTS WITHIN THE SOUTHEAST OHIO TRIBUTARIES BASIN.	PERTINENT IF STREAM OR STREAM SEGMENT IS ON-SITE AND IS EITHER AFFECTED BY SITE CONDITIONS OF IF REMEDY INCLUDES DIRECT DISCHARGE. USED BY DWQPA TO ESTABLISH WASTE LOAD ALLOCATIONS		ACTION	LOCATION		
WS		3745-1-17		WATER USE DES FOR SW OHIO TRIB	ESTABLISHES WATER USE DESIGNATIONS FOR STREAM SEGMENTS WITHIN THE SOUTHWEST OHIO TRIBUTARIESR BASIN	PERTINENT IF STREAM OR STREAM SEGMENT IS ON-SITE AND IS EITHER AFFECTED BY SITE CONDITIONS OF IF REMEDY INCLUDES DIRECT DISCHARGE USED BY DWQPA TO ESTABLISH WASTE LOAD ALLOCATIONS		ACTION	LOCATION		
WS		3745-1-18		WATER USE DES FOR L MIAMI RIVER	ESTABLISHES WATER USE DESIGNATIONS FOR STREAM SEGMENTS WITHIN THE LITTLE MAUMEE RIVER BASIN.	PERTINENT IF STREAM OR STREAM SEGMENT IS ON-SITE AND IS EITHER AFFECTED BY SITE CONDITIONS OF IF REMEDY INCLUDES DIRECT DISCHARGE. USED BY DWQPA TO ESTABLISH WASTE LOAD ALLOCATIONS		ACTION	LOCATION		3/18/93
WS		3745-1-19		WATER USE DES FOR HURON RIVER	ESTABLISHES WATER USE DESIGNATIONS FOR STREAM SEGMENTS WITHIN THE HURON RIVER BASIN.	PERTINENT IF STREAM OR STREAM SEGMENT IS ON-SITE AND IS EITHER AFFECTED BY SITE CONDITIONS OF IF REMEDY INCLUDES DIRECT DISCHARGE. USED BY DWQPA TO ESTABLISH WASTE LOAD ALLOCATIONS		ACTION	LOCATION		
WS		3745-1-20		WATER USE DES FOR ROCKY RIVER	ESTABLISHES WATER USE DESIGNATIONS FOR STREAM SEGMENTS WITHIN THE ROCKY RIVER BASIN	PERTINENT IF STREAM OR STREAM SEGMENT IS ON-SITE AND IS EITHER AFFECTED BY SITE CONDITIONS OF IF REMEDY INCLUDES DIRECT DISCHARGE. USED BY DWQPA TO ESTABLISH WASTE LOAD ALLOCATIONS.		ACTION	LOCATION		
WS		3745-1-21		WATER USE DES FOR GREAT MIAMI RIVER	ESTABLISHES WATER USE DESIGNATIONS FOR STREAM SEGMENTS WITHIN THE GREAT MIAMI RIVER BASIN.	PERTINENT IF STREAM OR STREAM SEGMENT IS ON-SITE AND IS EITHER AFFECTED BY SITE CONDITIONS OF IF REMEDY INCLUDES DIRECT DISCHARGE USED BY DWQPA TO ESTABLISH WASTE LOAD ALLOCATIONS		ACTION	LOCATION		
WS		3745-1-22		WATER USE DES FOR CHAGRIN RIVER	ESTABLISHES WATER USE DESIGNATIONS FOR STREAM SEGMENTS WITHIN THE CHAGRIN RIVER BASIN	PERTINENT IF STREAM OR STREAM SEGMENT IS ON-SITE AND IS EITHER AFFECTED BY SITE CONDITIONS OF IF REMEDY INCLUDES DIRECT DISCHARGE USED BY DWQPA TO ESTABLISH WASTE LOAD ALLOCATIONS.		ACTION	LOCATION		

CATEGORY	ORC	OAC	PERTINENT PARAGRAPH	TITLE OR SUBJECT OF REGULATION	DESCRIPTION OF REGULATION	APPLICATION OF REGULATION	REF	ARAR TYPE 1	ARAR TYPE 2	FEDERAL REGULATION	LAST REVISION
WS		3745-1-23		WATER USE DES FOR PORTAGE RIVER	ESTABLISHED WATER USE DESIGNATIONS FOR STREAM SEGMENTS WITHIN THE PORTAGE RIVER BASIN	PERTINENT IF STREAM OR STREAM SEGMENT IS ON-SITE AND IS EITHER AFFECTED BY SITE CONDITIONS OF IF REMEDY INCLUDES DIRECT DISCHARGE. USED BY DWQPA TO ESTABLISH WASTE LOAD ALLOCATIONS		ACTION	LOCATION		
WS		3745-1-24		WATER USE DES FOR MUSKINGUM RIVER	ESTABLISHES WATER USE DESIGNATIONS FOR STREAM SEGMENTS WITHIN THE MUSKINGUM RIVER BASIN.	PERTINENT IF STREAM OR STREAM SEGMENT IS ON-SITE AND IS EITHER AFFECTED BY SITE CONDITIONS OF IF REMEDY INCLUDES DIRECT DISCHARGE. USED BY DWQPA TO ESTABLISH WASTE LOAD ALLOCATIONS		ACTION	LOCATION		
WS		3745-1-25		WATER USE DES FOR MAHONING RIVER	ESTABLISHES WATER USE DESIGNATIONS FOR STREAM SEGMENTS WITHIN THE MAHONING RIVER BASIN.	PERTINENT IF STREAM OR STREAM SEGMENT IS ON-SITE AND IS EITHER AFFECTED BY SITE CONDITIONS OF IF REMEDY INCLUDES DIRECT DISCHARGE. USED BY DWQPA TO ESTABLISH WASTE LOAD ALLOCATIONS.		ACTION	LOCATION		
WS		3745-1-26		WATER USE DES FOR CUYAHOGA RIVER	ESTABLISHES WATER USE DESIGNATIONS FOR STREAM SEGMENTS WITHIN THE CUYAHOGA RIVER BASIN.	PERTINENT IF STREAM OR STREAM SEGMENT IS ON-SITE AND IS EITHER AFFECTED BY SITE CONDITIONS OF IF REMEDY INCLUDES DIRECT DISCHARGE. USED BY DWQPA TO ESTABLISH WASTE LOAD ALLOCATIONS		ACTION	LOCATION		
WS		3745-1-27		WATER USE DES FOR BLACK RIVER	ESTABLISHES WATER USE DESIGNATIONS FOR STREAM SEGMENTS WITHIN THE BLACK RIVER BASIN.	PERTINENT IF STREAM OR STREAM SEGMENT IS ON-SITE AND IS EITHER AFFECTED BY SITE CONDITIONS OF IF REMEDY INCLUDES DIRECT DISCHARGE. USED BY DWQPA TO ESTABLISH WASTE LOAD ALLOCATIONS.		ACTION	LOCATION		
WS		3745-1-28		WATER USE DES FOR VERMILION RIVER	ESTABLISHES WATER USE DESIGNATIONS FOR STREAM SEGMENTS WITHIN THE VERMILION RIVER BASIN	PERTINENT IF STREAM OR STREAM SEGMENT IS ON-SITE AND IS EITHER AFFECTED BY SITE CONDITIONS OF IF REMEDY INCLUDES DIRECT DISCHARGE. USED BY DWQPA TO ESTABLISH WASTE LOAD ALLOCATIONS		ACTION	LOCATION		
WS		3745-1-29		WATER USE DES FOR WABASH RIVER	ESTABLISHES WATER USE DESIGNATIONS FOR STREAM SEGMENTS WITHIN THE WABASH RIVER BASIN.	PERTINENT IF STREAM OR STREAM SEGMENT IS ON-SITE AND IS EITHER AFFECTED BY SITE CONDITIONS OF IF REMEDY INCLUDES DIRECT DISCHARGE. USED BY DWQPA TO ESTABLISH WASTE LOAD ALLOCATIONS		ACTION	LOCATION		
WS		3745-1-30		WATER USE DES FOR MILL CREEK	ESTABLISHES WATER USE DESIGNATIONS FOR STREAM SEGMENTS WITHIN THE MILL CREEK BASIN.	PERTINENT IF STREAM OR STREAM SEGMENT IS ON-SITE AND IS EITHER AFFECTED BY SITE CONDITIONS OF IF REMEDY INCLUDES DIRECT DISCHARGE. USED BY DWQPA TO ESTABLISH WASTE LOAD ALLOCATIONS		ACTION	LOCATION		
WS		3745-1-31		WATER USE DES FOR LAKE ERIE	ESTABLISHES WATER USE DESIGNATIONS FOR STREAM SEGMENTS WITHIN THE LAKE ERIE BASIN	PERTINENT IF STREAM OR STREAM SEGMENT IS ON-SITE AND IS EITHER AFFECTED BY SITE CONDITIONS OF IF REMEDY INCLUDES DIRECT DISCHARGE. USED BY DWQPA TO ESTABLISH WASTE LOAD ALLOCATIONS		ACTION	LOCATION		
WS		3745-1-32		WATER USE DES FOR OHIO RIVER	ESTABLISHES WATER USE DESIGNATIONS FOR STREAM SEGMENTS WITHIN THE OHIO RIVER BASIN	PERTINENT IF STREAM OR STREAM SEGMENT IS ON-SITE AND IS EITHER AFFECTED BY SITE CONDITIONS OF IF REMEDY INCLUDES DIRECT DISCHARGE. USED BY DWQPA TO ESTABLISH WASTE LOAD ALLOCATIONS		ACTION	LOCATION		

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CATEGORY	ORC	OAC	PERTINENT PARAGRAPH	TITLE OR SUBJECT OF REGULATION	DESCRIPTION OF REGULATION	APPLICATION OF REGULATION	REF	ARAR TYPE 1	ARAR TYPE 2	FEDERAL REGULATION	LAST REVISION
DSW		3745-1-33	A-E	WATER QUALITY CRITERIA FOR LAKE ERIE DRAINAGE BASIN	ESTABLISHES WATER QUALITY STANDARDS FOR BODIES OF WATER DRAINING INTO LAKE ERIE BASIN. USED BY DSW TO ESTABLISH DISCHARGE LIMITS	CONSIDER FOR SITES WITH DISCHARGES INTO RIVERS IN THE LAKE ERIE BASIN		ACTION			10/31/97
DSW		3745-1-34	A-D	WATER QALITY CRITERIA FOR THE OHIO RIVER DRAINAGE BASIN	APPLIES TO DISCHARGES TO STREAMS WITHIN THE OHIO RIVER BASIN. USED BY DSW TO DETERMINE DISCHARGE LIMITS	CONSIDER FOR SITES WITH DISCHARGES TO OHIO RIVER BASIN					10/31/97
DSW		3745-1-35	A-G	SITE-SPECIFIC MODIFICATIONS TO CRITERIA AND VALUES	DESCRIBES STANDARDS BY WHICH AGENCY MAY MAKE SITE SPECIFIC ADJUSTMENTS TO DETERMINE WATER QUALITY STANDARDS AND DISCHARGE LIMITS CONSIDERS LOCAL CONDITIONS SUCH AS WATER CHEMISTRY OR SENSITIVE SPECIES THAT MAY NECESSITATE MODIFICATIONS TO DISCHARGE STANDARDS	CONSIDER FOR ANY SITE THAT WILL DISCHARGE TO SURFACE WATERS OF OHIO					10/31/97
DSW		3745-1-36	A-D	METHODOLOGIES FOR DEVELOPMENT OF AQUATIC LIFE CRITERIA	DESCRIBES METHODOLOGIES THAT DSW WOULD APPLY TO EVALUATE TOXIC EFFECTS OF POLLUTION ON AQUATIC LIFE IN STREAMS IN THE LAKE ERIE BASIN. WILL BE USED IN DETERMINATION OF DISCHARGE LIMITS.	CONSIDER FOR SITES THAT WILL HAVE DISCHARGES TO STREAMS IN LAKE ERIE BASIN.					10/31/97
DSW		3745-1-37	A-G	METHODOLOGIES FOR DERIVING BIOACCUMULATION FACTORS	USED BY DSW IN PREDICTING HUMAN AND AQUATIC HEALTH EFFECTS OF POLLUTANTS. IMPACTS DISCHARGE LIMITS/	CONSIDER FOR SITES WITH SURFACE WATER DISCHARGES.					10/31/97
DSW		3745-1-38	A-D	METHOD FOR DEV OF HUMAN HEALTH CRITERIA LAKE ERIE	APPROACHES USED BY DSW TO DETERMINE EFFECTS OF FISH CONSUMPTION AND WATER INGESTION ON HUMAN HEALTH IN LAKE ERIE BASIN. IMPACTS DISCHARGE STANDARDS.	CONSIDER FOR STIE WITH DISCHARGE INTO STREAM IN LAKE ERIE BASIN.					10/31/97
DSW		3745-1-39	A-E	METHOD. FOR WILDLIFE CRITERIA IN LAKE ERIE BASIN	USED BY DSW TO CALCULATE CHEMICAL CONCENTRATIONS HARMFUL TO WILDLIFE IN LAKE ERIE BASIN. IMPACTS DISCHARGE STANDARDS.	CONSIDER FOR SITES WITH SURFACE WATER DISCHARGES IN LAKE ERIE BASIN					10/31/97
DSW		3745-1-50	A-NN	WETLAND DEFINITIONS	DEFINES TERMS USED IN WETLANDS RELATED REGULATIONS.	CONSIDER FOR SITES THAT HAVE IMPACTED WETLANDS OR WHERE REMEDIAL ACTIVITIES WOULD IMPACT WETLANDS.					5/1/98
DSW		3745-1-51	A-C	WETLAND NARRATIVE CRITERIA	LISTS CRITERIA TO BE PROTECTED IN WETLAND ENVIRONMENTS	CONSIDER FOR SITES THAT HAVE IMPACTED WETLANDS OR WHERE REMEDIAL ACTIVITIES WOULD IMPACT WETLANDS.					5/1/98
DSW		3745-1-52		NUMERIC CHEMICAL CRITERIA FOR WASTE WATER DISCHARGE	REQUIRES THAT DISCHARGE CRITERIA APPLY AT "END OF PIPE"	CONSIDER FOR SITES THAT HAVE IMPACTED WETLANDS OR WHERE REMEDIAL ACTIVITIES WOULD IMPACT WETLANDS.					5/1/98
DSW		3745-1-53		WETLAND USE DESIGNATION	ALL SURFACE WATERS OF THE STATE WHICH MEET THE DEFINITION OF A WETLAND IN RULE 3745-1-02 ARE ASSIGNED THE WETLAND DESIGNATED USE.	CONSIDER FOR SITES THAT HAVE IMPACTED WETLANDS OR WHERE REMEDIAL ACTIVITIES WOULD IMPACT WETLANDS.					5/1/98
DSW		3745-1-54	A-D	WETLAND ANTIDEGRADATION	REQUIRES THAT ALL WETLANDS BE ASSIGNED A CATEGORY CLASSIFICATION AND GIVES CRITERIA FOR CLASSIFICATION. DISCUSSES REQUIREMENTS FOR AVOIDANCE AND MINIMIZATION OF WETLANDS DAMAGE AS WELL AS COMPENSATORY MITIGATION.	CONSIDER FOR SITES THAT HAVE IMPACTED WETLANDS OR WHERE REMEDIAL ACTIVITIES WOULD IMPACT WETLANDS.					5/1/98
APC		3745-15-06	A1,A2	MALFUNCTION & MAINTENANCE OF AIR POLL CONTROL EQUIPMENT	ESTABLISHES SCHEDULED MAINTENANCE AND SPECIFIES WHEN POLLUTION SOURCE MUST BE SHUT DOWN DURING MAINTENANCE	PERTAINS TO ANY SITE WHICH UTILIZES OR WILL UTILIZE AIR POLLUTION CONTROL EQUIPMENT ON-SITE.	3745-15-01,3745-15-02	ACTION			

CATEGORY	ORC	OAC	PERTINENT PARAGRAPH	TITLE OR SUBJECT OF REGULATION	DESCRIPTION OF REGULATION	APPLICATION OF REGULATION	REF	ARAR TYPE 1	ARAR TYPE 2	FEDERAL REGULATION	LAST REVISION
APC		3745-15-07	A	AIR POLLUTION NUISANCES PROHIBITED	DEFINES AIR POLLUTION NUISANCE AS AS THE EMISSION OR ESCAPE INTO THE AIR FROM ANY SOURCE(S) OF SMOKE, ASHES, DUST, DIRT, GRIME, ACIDS, FUMES, GASES, VAPORS, ODORS AND COMBINATIONS OF THE ABOVE THAT ENDANGER HEALTH, SAFETY OR WELFARE OF THE PUBLIC OR	PERTAINS TO ANY SITE WHICH CAUSES OR MAY REASONABLY CAUSE, AIR POLLUTION NUISANCES. CONSIDER FOR SITES THAT WILL UNDERGO EXCAVATION, DEMOLISION, CAP INSTALLATION, METHANE PRODUCTION, CLEARING AND GRUBBING, WATER TREATMENT	3745-15-01,3745-15-02	ACTION			
					CAUSE PERSONAL INJURY OR PROPERTY DAMAGE SUCH NUISANCES ARE PROHIBITED	INCINERATION AND WASTE FUEL RECOVERY.					
APC		3745-16-02	B,C	STACK HEIGHT REQUIREMENTS	ESTABLISHES ALLOWABLE STACK HEIGHT FOR AIR CONTAMINANT SOURCES BASED ON GOOD ENGINEERING PRACTICE.	PERTAINS TO ANY SITE THAT HAS OR WILL HAVE AN AIR CONTAMINANT SOURCE ON-SITE (PARTICULATE, DUST, FUMES, GAS, MIST, SMOKE, VAPOR, ODORS) EMITTED FROM A STACK. CONSIDER FOR REMEDIES INCORPORATING INCINERATION, WASTE FUEL RECOVERY AND WASTEWATER TREATMENT	3745-16-01	ACTION			
APC		3745-17-02	A,B,C	PARTICULATE AMBIENT AIR QUALITY STANDARDS	ESTABLISHES SPECIFIC STANDARDS FOR TOTAL SUSPENDED PARTICULATES.	PERTAINS TO ANY SITE THAT MAY EMIT MEASURABLE QUANTITIES OF PARTICULATE MATTER (BOTH STACK AND FUGITIVE). CONSIDER FOR SITES THAT WILL UNDERGO EXCAVATION, DEMOLITION, CAP INSTALLATION, CLEARING AND GRUBBING, INCINERATION AND WASTE FUEL RECOVERY.	3745-17-01,3745-17-03	CHEMICAL			
APC		3745-17-05		PARTICULATE NON-DEGRADATION POLICY	DEGRADATION OF AIR QUALITY IN ANY AREA WHERE AIR QUALITY IS BETTER THAN REQUIRED BY 3745-17-02 IS PROHIBITED	PERTAINS TO SITES IN CERTAIN LOCATIONS THAT MAY EMIT OR ALLOW THE ESCAPE OF PARTICULATES (BOTH STACK AND FUGITIVE). CONSIDER FOR SITES THAT WILL UNDERGO EXCAVATION, DEMOLITION, CAP INSTALLATION, CLEARING AND GRUBBING, INCINERATION.	3745-17-01,3745-17-03	CHEMICAL	LOCATION		
APC		3745-17-07	A-D	VISIBLE PARTICULATE EMISSION CONTROL	SPECIFIES THE ALLOWABLE OPACITY FOR PARTICULATE EMISSIONS, PROVIDES EXCEPTIONS FOR UNCOMBINED WATER, START-UP/SHUTDOWN OF FUEL BURNING EQUIPMENT, MALFUNCTIONS.	PERTAINS TO ANY EMISSION OF PARTICULATE FROM A STACK. CONSIDER FOR INCINERATION AND FUEL BURNING.	3745-17-01,3745-17-03	CHEMICAL			1/31/98
APC		3745-17-08	A1,A2,B,D	EMISSION RESTRICTIONS FOR FUGITIVE DUST	ALL EMISSIONS OF FUGITIVE DUST SHALL BE CONTROLLED	PERTAINS TO SITES WHICH MAY HAVE FUGITIVE EMISSIONS (NON-STACK) OF DUST. CONSIDER FOR SITES THAT WILL UNDERGO GRADING, LOADING OPERATIONS, DEMOLITION, CLEARING AND GRUBBING AND CONSTRUCTION.	3745-17-01,3745-17-03	ACTION			1/31/98
APC		3745-17-09	A,B,C	INCINERATOR PARTIC EMISSION & ODOR RESTRICTIONS	ESTABLISHES PARTICULATE EMISSION LIMITATIONS AND DESIGN-OPERATION REQUIREMENTS TO PREVENT THE EMISSION OF OBJECTIONABLE ODORS.	PERTAINS TO ANY REMEDY INCORPORATING INCINERATION	3745-17-01,3745-17-03	ACTION			
APC		3745-17-10	A,B,C	FUEL BURNING PARTIC EMISSION RESTRICTIONS	ESTABLISHES PARTICULATE EMISSION LIMITATIONS FOR FUEL BURNING EQUIPMENT.	PERTAINS TO ANY REMEDY INCORPORATING FUEL BURNING (WASTE FUEL RECOVERY)	3745-17-01,3745-17-03	ACTION			
APC		3745-18-02	A,B,C,D	SULFUR DIOXIDE AMBIENT AIR QUALITY STANDARDS	ESTABLISHES PRIMARY AND SECONDARY AMBIENT AIR QUALITY STANDARDS FOR SULFUR DIOXIDE.	PERTAINS TO ANY SITE THAT EMITS OR WILL EMIT SULFUR DIOXIDE. CONSIDER FOR INCINERATION, FUEL BURNING (WASTE FUEL RECOVERY)	3745-18-01,3745-18-04	ACTION	CHEMICAL		
APC		3745-18-04	A,B,C,E,F	SULFUR DIOXIDE MEASUREMENT METHODS AND PROCEDURES	SPECIFIES TESTING METHODS AND PROCEDURES FOR SULFUR DIOXIDE EMISSIONS COMPLIANCE TESTING	PERTAINS TO ANY SITE THAT WILL EMIT SULFUR DIOXIDE CONSIDER FOR SITES THAT WILL UTILIZE INCINERATION OR FULE RECOVERY (WASTE FUEL RECOVERY)	3745-18-01	ACTION	CHEMICAL		

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APC		3745-18-05	A	SULFUR DIOXIDE AMBIENT MONITORING REQUIREMENTS	THE DIRECTOR OF THE OHIO EPA MAY REQUIRE ANY SOURCE OF SULFUR DIOXIDE EMISSIONS TO INSTALL, OPERATE AND MAINTAIN MONITORING DEVICES, MAINTAIN RECORDS AND FILE REPORTS.	PERTAINS TO ANY SITE THAT EMITS OR WILL EMIT SULFUR DIOXIDE. CONSIDER FOR INCINERATOIN, FUEL BURNING (WASTE FUEL RECOVERY).	3745-18-01,3745-18-04	ACTION	CHEMICAL		
APC		3745-18-06	A-G	SULFUR DIOXIDE EMISSION LIMIT PROVISIONS	ESTABLISHES GENERAL LIMIT PROVISIONS FOR SULFUR DIOXIDE	PERTAINS TO ANY SITE THAT WILL EMIT SULFUR DIOXIDE. CONSIDER FOR SITES THAT WILL UNDERGO INCINERATION OR FUEL BURNING (WASTE FUEL RECOVERY)	3745-18-01,3745-18-04	ACTION	CHEMICAL		
APC		3745-19-03	A,B,C,D	OPEN BURNING STANDARDS IN RESTRICTED AREAS	OPEN BURNING WITHOUT PRIOR AUTHORIZATION FROM OHIO EPA IS PROHIBITED.	PERTAINS TO SITES WITHIN A RESTRICTED AREA (WITHIN THE BOUNDARY OF A MUNICIPALITY AND A ZONE EXTENDING BEYOND SUCH MUNICIPALITY).	3745-19-01,3745-19-02	LOCATION	ACTION		
APC		3745-19-04	A,B,C,D	OPEN BURNING STANDARDS IN UNRESTRICTED AREAS	OPEN BURNING WITHOUT PRIOR AUTHORIZATION FROM OHIO EPA IS PROHIBITED.	PERTAINS TO SITES WITHIN AN UNRESTRICTED AREA (OUTSIDE THE BOUNDARY OF A MUNICIPALITY AND A ZONE EXTENDING BEYOND SUCH MUNICIPALITY).	3745-19-01,3745-19-02	LOCATION	ACTION		
DSW		3745-2-04	A-G	DEVELOPMENT OF WATER QUALITY BASED EFFLUENT LIMITATIONS	USED BY DSW TO DETERMINE WASTE LOAD ALLOCATIONS FOR DISCHARGES TO SURFACE WATER. IMPACTS DISCHARGE LIMITS.	CONSIDER FOR ANY SITE WITH DISCHARGE TO SURFACE WATERS					10/31/97
DSW		3745-2-05	A,B	CALCULATING WASTELOAD ALLOCATIONS	PROCESS FOR CALCULATING WASTELOAD ALLOCATIONS FOR DISCHARGES.	CONSIDER FOR SITES WITH SURFACE WATER DISCHARGES					10/31/97
DSW		3745-2-06	A-D	APPLICATION OF PRELIMINARY EFFLUENT LIMITATIONS	METHODOLOGY FOR CALCULATING DISCHARGE LIMITATIONS BASED ON CHEMICAL AND BIOLOGICAL FACTORS.						10/31/97
DSW		3745-2-07	A,B	ADDITIVE EFFECTS OF POLLUTANTS	DESCRIBES PROCESS FOR CALCULATING COMBINED EFFECTS OF MULTIPLE WATER CONTAMINANTS. USED TO CALCULATE DISCHARGE LIMITS.	CONSIDER FOR SITES WITH DISCHARGES TO SURFACE WATERS.					10/31/97
DSW		3745-2-08	A-L	MIXING ZONE DEMONSTRATION AND SIZING REQUIREMENTS	METHODS FOR DETERMINING EFFECTS OF MIXING ZONES. USED IN CALCULATING DISCHARGE LIMITS.	CONSIDER FOR SITES WITH SURFACE WATER DISCHARGES.					10/31/97
DSW		3745-2-09	A-F	WHOLE EFFLUENT TOXICITY AND WATER QUALITY BASED LIMITS	METHODS FOR CALCULATING TOXICITY BASED CONSIDERATIONS FOR DISCHARGE LIMITS.	CONSDIER FOR SITES WITH SURFACE WATER DISCHARGES.					10/31/97
DSW		3745-2-10	A-G	WASTELOAD ALLOCATION FOR AMMONIA NITROGEN TOXICITY	METHOD FOR CALCULATING DISCHARGES OF AMMONIA-NITROGEN.	CONSIDER FOR SITES WITH SURFACE WATER DISCHARGES.					10/31/97
DSW		3745-2-11	A-F	DISSOLVED OXYGEN MODELING	METHODS FOR CALCULATING EFFECTS OF DISCHARGE ON DISSOLVED OXYGEN.	CONSIDER FOR SITES WITH SURFACE WATER DISCHARGES					10/31/97
DSW		3745-2-12	A-O	TOTAL MAXIMUM DAILY LO DS	FURTHER METHODOLOGY FOR CALCULATING DISCHARGES. INCLUDES EFFECTS OF NONPOINT SOURCES.	CONSIDER FOR SITES WITH SURFACE WATE DISCHARGES				40CFR130.7	10/31/97
APC		3745-20-06	A,B	STANDARD FOR ACTIVE ASBESTOS WASTE DISPOSAL SITES	ESTABLISHES OPERATING STANDARDS FOR AN ACTIVE ASBESTOS WASTE DISPOSAL SITES	PERTAINS TO SITES WHERE ASBESTOS HAS COME TO BE LOCATED AND MUST BE CONSOLIDATED ON-SITE. CONSIDER FOR LANDFILLS WHERE WASTES WILL BE EXCAVATED AND RE-DEPOSITED ON-SITE.	3745-20-01	CHEMICAL	ACTION		3/18/93
APC		3745-20-07	A,B,C	STANDARD FOR INACTIVE ASBESTOS WASTE DISPOSAL SITES	ESTABLISHES EMISSIONS AND MAINTENANCE STANDARDS FOR INACTIVE ASBESTOS WASTE DISPOSAL SITES.	PERTAINS TO SITES WHERE ASBESTOS HAS COME TO BE LOCATED. CONSIDER FOR LANDFILLS WITH INADEQUATE COVER OR WHERE WASTES WILL CONSOLIDATED.	3745-2-01	CHEMICAL	LOCATION		3/18/93
APC		3745-21-02	A,B,C	AMBIENT AIR QUALITY STANDARDS AND GUIDELINES	ESTABLISHES SPECIFIC AIR QUALITY STANDARDS FOR CARBON MONOXIDE, OZONE AND AND NON-METHANE HYDROCARBONS	PERTAINS TO ANY SITE WHICH WILL EMIT CARBON OXIDES, OZONE OR NON-METHANE HYDROCARBONS. CONSIDER FOR SITES THAT WILL UNDERGO WATER TREATMENT, INCINERATION AND FUEL BURNING (WASTE FUEL RECOVERY)	3745-21-01,3745-21-03,3745-21-10	CHEMICAL	ACTION		3/18/93

CATEGORY	ORC	OAC	PERTINENT PARAGRAPH	TITLE OR SUBJECT OF REGULATION	DESCRIPTION OF REGULATION	APPLICATION OF REGULATION	REF	ARAR TYPE 1	ARAR TYPE 2	FEDERAL REGULATION	LAST REVISION
APC		3745-21-03	B,C,D	METHODS OF AMBIENT AIR QUALITY MEASUREMENT	SPECIFIES MEASUREMENT METHODS TO DETERMINE AMBIENT AIR QUALITY FOR THE FOLLOWING CONSTITUENTS: CARBON MONOXIDE, OZONE AND NON-METHANE HYDROCARBONS.	PERTAINS TO ANY SITE WHICH WILL EMIT CARBON MONOXIDE, OZONE OR NON-METHANE HYDROCARBONS. CONSIDER FOR FOR SITES WHERE TREATMENT SYSTEMS WILL RESULT IN AIR EMISSIONS.	3745-21-01, 3745-21-02	CHEMICAL	ACTION		3/20/93
APC		3745-21-07	A,B,G,I,J	ORGANIC MATERIALS EMISSION CONTROL	REQUIRES CONTROL OF EMISSIONS OF ORGANIC MATERIALS FROM STATIONARY	PERTAINS TO ANY SITE WHICH IS EMITTING OR WILL EMIT ORGANIC MATERIAL.	3745-21-01,3745-21-	ACTION	CHEMICAL		3/20/93
				STATIONARY SOURCES	SOURCES. REQUIRES BEST AVAILABLE TECHNOLOGY.	CONSIDER FOR SITES THAT WILL UNDERGO WATER TREATMENT (AIR STRIPPING), INCINERATION AND FUEL BURNING (WASTE FUEL RECOVERY).	03,3745-21-10				
APC		3745-21-08	A-E	CARBON MONOXIDE EMISSION CONTROL: STATIONARY SOURCES	REQUIRES ANY STATIONARY SOURCE OF CARBON MONOXIDE TO MINIMIZE EMISIONS BY THE USE OF BEST AVAILABLE CONTROL TECHNOLOGIES AND OPERATING PRACTICES IN ACCORDANCE WITH BEST CURRENT TECHNOLOGY.	PERTAINS TO ANY SITE WHICH IS EMITTING OR WILL EMIT CARBON MONOXIDE. CONSIDER FOR SITES THAT WILL UNDERGO WATER TREATMENT, INCINERATION AND FUEL BURNING (WASTE FUEL RECOVERY).	3745-21-01,3745-21-03,3745-21-10	ACTION	CHEMICAL		
APC		3745-21-09		VOC EMISSIONS CONTROL STATIONARY SOURCES	ESTABLISHES LIMITATIONS FOR EMISSIONS OF VOLATILE ORGANIC COMPOUNDS FROM STATIONARY		3745-21-01,3745-21-03,3745-21-	ACTION			
APC		3745-23-01		NITROGEN DIOXIDE AMBIENT AIR QUALITY STANDARDS	ESTABLISHES A MAXIMUM AMBIENT AIR QUALITY STANDARD FOR NITROGEN DIOXIDE	PERTAINS TO ANY SITE WHICH IS EMITTING OR WILL EMIT NITROGEN DIOXIDE. CONSIDER FOR SITES THAT WILL UNDERGO WATER TREATMENT, INCINERATION AND FUEL BURNING (WASTE	3745-23-02, 3745-23-05	CHEMICAL	ACTION		
APC		3745-23-02	A,B	MEASUREMENT METHODS FOR NITROGEN DIOXIDE	SPECIFIES METHODS OF MEASUREMENT FOR NITROGEN DIOXIDE TO DETERMINE AMBIENT AIR QUALITY.	PERTAINS TO ANY SITE WHICH WILL EMIT NITRIGEN DIOXIDE. CONSIDER FOR SITES WHERE TREATMENT SYSTEMS MAY RESULT IN NITROGEN DIOXIDE EMISSIONS, ESP. THERMAL TREATMENT SYSTEMS.	3745-23-01, 3745-23-04	ACTION	CHEMICAL		3/20/93
APC		3745-23-06		NITROGEN OXIDES EMISSION CONTROLS. STATIONARY SOURCE	REQUIRES THAT ALL STATIONARY SOURCES OF NITROGEN OXIDE MINIMIZE EMISSIONS BY THE USE OF THE LATEST AVAILABLE CONTROL TECHNIQUES AND OPERATING PRACTICES IN ACCORDANCE WITH BEST CURRENT TECHNOLOGY. ESTABLISHES LIMIT FOR NITROGEN OXIDE EMISSIONS FROM COMBUSTION.	PERTAINS TO ANY SITE WHICH WILL EMIT NITROGEN OXIDES. CONSIDER FOR SITES WHERE TREATMENT SYSTEMS WILL RESULT IN NITROGEN OXIDE EMISSIONS, ESP. THERMAL TREATMENT.	3745-23-02,3745-23-05	ACTION	CHEMICAL		3/20/93
APC		3745-25-03		EMISSION CONTROL ACTION PROGRAMS	REQUIRES PREPARATION FOR AIR POLLUTION ALERTS, WARNINGS AND EMERGENCIES.	PERTAINS TO ANY SITE WHICH IS EMITTING OR MAY EMIT AIR CONTAMINANTS.		ACTION			
SW		3745-27-03	B	EXEMPTIONS TO SOLID WASTE REGULATIONS	DEFINES EXEMPTIONS TO SOLID WASTE REGULATIONS AND ESTABLISHES LIMITATIONS ON TEMPORARY STORAGE OF PUTRESCIBLE WASTE OR ANY SOLID WASTE WHICH CAUSES A NUISANCE OR HEALTH HAZARD. STORAGE OF PUTRESCIBLE WASTE BEYOND SEVEN DAYS IS CONSIDERED OPEN DUMPING.	PERTAINS TO ANY SITE AT WHICH SOLID WASTE WILL BE MANAGED. CONSIDER ESPECIALLY FOR OLD LANDFILLS WHERE SOLID WASTE MAY BE EXCAVATED AND/OR CONSOLIDATED.	3745-27-01, 3745-27-05	ACTION			3/20/93
SW		3745-27-05	A,B,C	AUTHORIZED, LIMITED & PROHIBITED SOLID WASTE DISPOSAL	ESTABLISHES ALLOWABLE METHODS OF SOLID WASTE DISPOSAL; SANITARY LANDFILL, INCINERATION, COMPOSTING. PROHIBITS MANAGEMENT BY OPEN BURNING AND OPEN DUMPING.	PERTAINS TO ANY SITE AT WHICH SOLID WASTES WILL BE MANAGED. PROHIBITS MANAGEMENT BY OPEN BURNING AND OPEN DUMPING.	3745-27-01	ACTION			

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CATEGORY	ORC	OAC	PERTINENT PARAGRAPH	TITLE OR SUBJECT OF REGULATION	DESCRIPTION OF REGULATION	APPLICATION OF REGULATION	REF	ARAR TYPE 1	ARAR TYPE 2	FEDERAL REGULATION	LAST REVISION
SW		3745-27-06	B,C	REQUIRED TECHNICAL INFORMATION FOR SANITARY LANDFILLS	SPECIFIES THE MINIMUM TECHNICAL INFORMATION REQUIRED OF A SOLID WASTE PERMIT TO INSTALL. INCLUDED ARE A HYDROGEOLOGIC INVESTIGATION REPORT, LEACHATE PRODUCTION AND MIGRATION INFORMATION, SURFACE WATER DISCHARGE INFORMATION, DESIGN CALCULATIONS, PLAN DRAWINGS.	THIS PARAGRAPH PRESENTS SUBSTANTIVE REQUIREMENTS OF A SOLID WASTE PERMIT TO INSTALL. PERTAINS TO ANY NEW SOLID WASTE DISPOSAL FACILITY CREATED ON-SITE AND EXPANSIONS OF EXISTING SOLID WASTE LANDFILLS . ALSO PERTAINS TO EXISTING AREAS OF CONTAMINATION THAT ARE CAPPED PER SOLID WASTE RULES . THIS RULE ESTABLISHES THE MINIMUM INFORMATION REQUIRED DURING THE REMEDIAL DESIGN STAGE.		ACTION			
SW		3745-27-07	A,B	LOCATION CRITERIA FOR SOLID WASTE DISPOSAL PERMIT	SPECIFIES LOCATIONS IN WHICH SOLID WASTE LANDFILLS ARE NOT TO BE SITED. INCLUDES FLOODPLAINS, SAND OR GRAVEL PITS, LIMESTONE OR SANDSTONE QUARRIES, AREAS ABOVE SOLE SOURCE AQUIFERS, WETLANDS, ETC.	THIS RULE PREVENTS THE ESTABLISHMENT OF NEW SOLID WASTE LANDFILLS AND EXPANSIONS OF EXISTING SOLID WASTE LANDFILLS IN CERTAIN UNFAVORABLE LOCATIONS. ALSO MAY PROHIBIT THE LEAVING OF WASTE IN-PLACE IN CERTAIN UNFAVORABLE LOCATIONS.		LOCATION			
SW		3745-27-07	D,F,G,H	ADDITIONAL CRITERIA FOR SANITARY LANDFILL APPROVAL	ADDITIONAL SITING REQUIREMTNS WITH RESPECT TO GEOLOGY, WATER SUPPLIES, OCCUPIED PROPERTIES, PARKLANDS AND MINE SUBSIDENCE AREAS. GOVERNS EXPANSION OF EXISTING SITES	PERTAINS TO NEW SANITARY LANDFILLS FOR SOLID WASTE DISPOSAL AND EXPANSIONS OF EXISTING FACILITIES		LOCATION	ACTION		6/1/94
SW		3745-27-08	C,D-H	CONSTRUCTION SPECIFICATIONS FOR SANITARY LANDFILLS	SPECIFIES THE MINIMUM REQUIREMENTS FOR THE SOIL/CLAY LAYERS, GRANULAR DRAINAGE LAYER, GEOSYNTHETICS, LEACHATE MANAGEMENT SYSTEM, GAS MONITORING SYSTEM, ETC. ALSO ESTABLISHES CONSTRUCTION REQUIREMENTS FOR FACILITIES TO BE LOCATED IN GEOLOGICALLY UNFAVORABLE AREAS.	PERTAINS TO ANY NEW SOLID WASTE DISPOSAL FACILITY CREATED ON-SITE AND ANY EXPANSIONS TO EXISTING SOLID WASTE LANDFILLS. PORTIONS ALSO PERTAIN TO AREAS OF CONTAMINATION THAT ARE CAPPED PER SOLID WASTE RULES. MAY SERVE AS SITING CRITERIA.		ACTION			
SW		3745-27-10	B,C,D,E,F	SANITARY LANDFILL - GW MONITORING AND CORRECTION	GROUND WATER MONITORING PROGRAM MUST BE ESTABLISHED FOR ALL SANITARY LANDFILL FACILITIES. THE SYSTEM MUST CONSIST OF A SUFFICIENT NUMBER OF WELLS THAT ARE LOCATED SO THAT SAMPLES INDICATE BOTH UPGRADIENT (BACKGROUND) AND DOWNGRADIENT WATER SAMPLES. THE SYSTEM MUST BE DESIGNED PER THE MINIMUM REQUIREMENTS SPECIFIED IN THIS RULE THE SAMPLING AND ANALYSIS PROCEDURES USED MUST COMPLY WITH THIS RULE. SPECIFIES PROCEDURES FOR ASSESSMENT AND CORRECTION OF CONTAMINATION.	PERTAINS TO ANY NEW SOLID WASTE FACILITY AND ANY EXPANSIONS OF EXISTING SOLID WASTE LANDFILLS ON-SITE. ALSO MAY PERTAIN TO EXISTING AREAS OF CONTAMINATION THAT ARE CAPPED IN-PLACE PER THE SOLID WASTE RULES.		ACTION			
SW		3745-27-11	B,G	FINAL CLOSURE OF SANITARY LANDFILL FACILITIES	REQUIRES CLOSURE OF A LANDFILL IN A MANNER WHICH MINIMIZES THE NEED FOR POST-CLOSURE MAINTENANCE AND MINIMIZES POST-CLOSURE FORMATION AND RELEASE OF LEACHATE AND EXPLOSIVE GASES TO AIR, SOIL GROUND WATER OR SURFACE WATER. SPECIFIES ACCEPTABLE CAP DESIGN; SOIL BARRIER LAYER, GRANULAR DRAINAGE LAYER, SOIL AND VEGETATIVE LAYER. PROVIDES FOR USE OF COMPARABLE MATERIALS TO THOSE SPECIFIED WITH APPROVAL OF DIRECTOR.	SUBSTANTIVE REQUIREMENTS PERTAIN TO ANY NEW SOLID WASTE LANDFILLS CREATED ON-SITE, ANY EXPANSIONS OF EXISTING SOLID WASTE LANDFILLS ON-SITE AND ANY EXISTING AREAS OF CONTAMINATION THAT ARE CAPPED IN-PLACE PER THE SOLID WASTE RULES.		ACTION			8/27/93

CATEGORY	ORC	OAC	PERTINENT PARAGRAPH	TITLE OR SUBJECT OF REGULATION	DESCRIPTION OF REGULATION	APPLICATION OF REGULATION	REF	ARAR TYPE 1	ARAR TYPE 2	FEDERAL REGULATION	LAST REVISION
SW		3745-27-12	A,B,D,E,MN	SANITARY LANDFILL - EXPLOSIVE GAS MONITORING	ESTABLISHES WHEN AN EXPLOSIVE GAS MONITORING PLAN IS REQUIRED FOR SOLID WASTE LANDFILLS. SPECIFIES THE MINIMUM INFORMATION REQUIRED IN SUCH A PLAN, INCLUDING DETAILED ENGINEERING PLANS, SPECIFICATIONS, INFORMATION ON GAS GENERATION	PERTAINS TO ANY SITE WHICH HAS HAD OR WILL HAVE PUTRESCIBLE SOLID WASTES PLACED ON-SITE AND WHICH HAS A RESIDENCE OR OTHER OCCUPIED STRUCTURE LOCATED WITHIN 1000 FEET OF THE EMPLACED SOLID WASTE		ACTION	LOCATION		
					POTENTIAL, SAMPLING AND MONITORING PROCEDURES, ETC. MANDATES WHEN REPAIRS MUST BE MADE TO AN EXPLOSIVE GAS MONITORING SYSTEM. THIS RULE ONLY APPLIES TO LADFILLS WHICH RECEIVED "PUTRESCIBLE" SOLID WASTES.						
SW		3745-27-12	I, J	EXPLOSIVE GAS MONITORING FOR SANITARY LANDFILLS	IDENTIFIES PARAMETERS AND SCHEDULE FOR EXPLOSIVE GAS MONITORING	PERTAINS TO ANY DISPOSAL SITE WHERE EXPLOSIVE GAS GENERATION AND MIGRATION MAY BE A THREAT.		ACTION	CHEMICAL		
SW		3745-27-13	C	DISTURBANCES WHERE HAZ OR SOLID WASTE FAC WAS OPERATED	REQUIRES THAT A DETAILED PLAN BE PROVIDED TO DESCRIBE HOW ANY PROPOSED FILLING, GRADING, EXCAVATING, BUILDING, DRILLING OR MINING ON LAND WHERE A HAZARDOUS WASTE FACILITY OR SOLID WASTE FACILITY WAS OPERATED WILL BE ACCOMPLISHED. THIS INFORMATION MUST DEMONSTRATE THAT THE PROPOSED ACTIVITIES WILL NOT CREATE A NUISANCE OR ADVERSELY AFFECT THE PUBLIC HEALTH OR THE ENVIRONMENT. SPECIAL TERMS TO CONDUCT SUCH ACTIVITIES MAY BE IMPOSED BY THE DIRECTOR TO PROTECT THE PUBLIC AND THE ENVIRONMENT.	PERTAINS TO ANY SITE AT WHICH HAZARDOUS OR SOLID WASTE HAS BEEN MANAGED, EITHER INTENTIONALLY OR OTHERWISE. DOES NOT PERTAIN TO AREAS THAT HAVE HAD ONE-TIME LEAKS OR SPILLS.		ACTION	LOCATION		
SW		3745-27-14	A	POST-CLOSURE CARE OF SANITARY LANDFILL FACILITIES	SPECIFIES THE REQUIRED POST-CLOSURE CARE FOR SOLID WASTE FACILITIES. INCLUDES CONTINUING OPERATION OF LEACHATE AND SURFACE WATER MANAGEMENT SYSTEMS, MAINTENANCE OF THE CAP SYSTEM AND GROUND WATER MONITORING.	SUBSTANTIVE REQUIREMENTS PERTAIN TO ANY NEWLY CREATED SOLID WASTE LANDFILLS ON-SITE, ANY EXPANSIONS OF EXISTING SOLID WASTE LANDFILLS ON-SITE AND ANY EXISTING AREAS OF CONTAMINATION THAT ARE CAPPED PER THE SOLID WASTE RULES.		ACTION			
SW		3745-27-18	A-D	SOLID WASTE INCINERATOR & COMPOSTING OPERATIONS	ESTABLISHES OPERATIONAL REQUIREMENTS FOR SOLID WASTE INCINERATORS AND COMPOSTING FACILITIES.	PERTAINS TO ANY SITE AT WHICH SOLID WASTE WILL BE EITHER INCINERATED OR COMPOSTED ON-SITE.		ACTION			
SW		3745-27-19	E	SANITARY LANDFILL GENERAL OPERATIONAL REQUIREMENTS	SPECIFIES GENERAL OPERATIONAL REQUIREMENTS FOR SOLID WASTE LANDFILLS. INCLUDES REQUIREMENTS FOR: PREPARATIONS FOR OPERATING DURING INCLEMENT WEATHER; MANAGEMENT TO MINIMIZE NOISE , DUST AND ODORS; VECTOR CONTROL; ADEQUATE FIRE CONTROL EQUIPMENT; NOT CAUSING A NUISANCE OR HEALTH HAZARD OR WATER POLLUTION; MINIMIZATION OF DISTURBED AREA; CHEMICAL COMPATABILITY TESTING, IF NECESSARY. SPECIFIES THAT BULK LIQUIDS, HAZARDOUS WASTE , PCBs AND INFECTIOUS WASTE MAY NOT BE ACCEPTED FOR DISPOSAL.	PERTAINS TO NEW SOLID WASTE DISPOSAL FACILITIES TO BE CREATED ON-SITE AND EXISTING LANDFILLS THAT WILL BE EXPANDED DURING REMEDIATION. PORTIONS ALSO MAY PERTAIN TO EXISTING AREAS OF CONTAMINATION THAT WILL BE CAPPED IN-PLACE PER SOLID WASTE RULES		ACTION			

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CATEGORY	ORC	OAC	PERTINENT PARAGRAPH	TITLE OR SUBJECT OF REGULATION	DESCRIPTION OF REGULATION	APPLICATION OF REGULATION	REF #	ARAR TYPE 1	ARAR TYPE 2	FEDERAL REGULATION	LAST REVISION
SW		3745-27-19	D(2)	SANITARY LANDFILL OPERATIONS - CONSTRUCTION COMPLIANCE	REQUIRES THE OWNER/OPERATOR TO IMPLEMENT MEASURES TO ATTAIN COMPLIANCE WITH REQUIREMENTS OF THESE RULES IN THE EVENT THAT TESTING INDICATES THAT A COMPONENT OR PORTION OF THE LANDFILL HAVE NOT BEEN CONSTRUCTED IN ACCORDANCE WITH THOSE RULES.	PERTAINS TO "NEW" SOLID WASTE DISPOSAL FACILITIES TO BE CREATED ON-SITE AND EXISTING LANDFILLS THAT WILL BE EXPANDED DURING REMEDIATION. ALSO PERTAINS TO CONSTRUCTION OF FINAL COVER SYSTEMS.		ACTION			
SW		3745-27-19	F, G	SANITARY LANDFILL OPER. - DAILY AND INTERMEDIATE COVER	INCLUDES REQUIREMENTS FOR DAILY COVER AND INTERMEDIATE COVER FOR TEMPORARILY INACTIVE AREAS	PERTAINS TO "NEW" SOLID WASTE DISPOSAL FACILITIES TO BE CREATED ON-SITE AND EXISTING FACILITIES TO BE EXPANDED DURING REMEDIATION		ACTION			
SW		3745-27-19	H	SANITARY LANDFILL OPERATIONS - FINAL COVER	INCLUDES REQUIREMENTS FOR THE FINAL CAP SYSTEM FOR AREAS AT FINAL ELEVATIONS.	PERTAINS TO NEW SOLID WASTE DISPOSAL FACILITIES TO BE CREATED ON-SITE AND EXISTING LANDFILLS THAT WILL BE EXPANDED DURING REMEDIATION. PORTIONS ALSO MAY PERTAIN TO EXISTING AREAS OF CONTAMINATION THAT WILL BE CAPPED IN-PLACE PER SOLID WASTE RULES.		ACTION			
SW		3745-27-19	L	SANITARY LANDFILL OPERATIONS - PCBs AND HAZARDOUS WASTE	REQUIRES OWNERS/OPERATORS TO CONDUCT A PROGRAM TO DETECT PCB WASTE AND HAZARDOUS WASTE PRIOR TO DISPOSAL. UPON DETECTION OR SUSPECTED DETECTION OF SUCH WASTES, REQUIRES THOSE WASTES TO NOT BE PLACED AT THE WORKING FACE OF THE LANDFILL AND TO MANAGE THOSE WASTES IN ACCORDANCE WITH APPLICABLE LAWS AND REGULATIONS	PERTAINS TO NEW SOLID WASTE DISPOSAL FACILITIES TO BE CREATED ON-SITE AND EXISTING LANDFILLS THAT WILL BE EXPANDED DURING REMEDIATION.		ACTION			
SW		3745-27-19	J	SANITARY LANDFILL OPERATIONS - SURFACE WATER MGMNT.	SURFACE WATER MUST BE DIVERTED FROM AREAS WHERE SOLID WASTE IS BEING, OR HAS BEEN, DEPOSITED. ALSO REQUIRES RUN-ON AND RUN-OFF TO BE CONTROLLED TO MINIMIZE INFILTRATION THROUGH THE COVER MATERIALS AND TO MINIMIZE EROSION OF THE CAP SYSTEM.	PERTAINS TO NEW SOLID WASTE DISPOSAL FACILITIES TO BE CREATED ON-SITE AND EXISTING LANDFILLS THAT WILL BE EXPANDED DURING REMEDIATION. PORTIONS ALSO MAY PERTAIN TO EXISTING AREAS OF CONTAMINATION THAT WILL BE CAPPED IN-PLACE PER SOLID WASTE RULES		ACTION			
SW		3745-27-19	K	SANITARY LANDFILL OPERATIONS - LEACHATE MANAGEMENT	REQUIRES REPAIR OF LEACHATE OUTBREAKS, COLLECTION AND TREATMENT OF LEACHATE ON THE SURFACE OF THE LANDFILL; AND ACTIONS TO MINIMIZE, CONTROL OR ELIMINATE CONDITIONS CAUSING LEACHATE OUTBREAKS.	PERTAINS TO NEW SOLID WASTE DISPOSAL FACILITIES TO BE CREATED ON-SITE AND EXISTING LANDFILLS THAT WILL BE EXPANDED DURING REMEDIATION. PORTIONS ALSO MAY PERTAIN TO EXISTING AREAS OF CONTAMINATION THAT WILL BE CAPPED IN-PLACE PER SOLID WASTE RULES.		ACTION			
SW		3745-27-20		SANITARY LANDFILLS - PROHIBITIONS AND CLOSURE	SPECIFIES CERTAIN OPERATIONAL AND LOCATION STANDARDS FOR LANDFILLS ACCEPTING WASTE AFTER JUNE 1, 1994. ALSO REQUIRES CLOSURE OF EXISTING UNITS WHICH DO NOT MEET THOSE STANDARDS BY OCTOBER 6, 1996	PERTAINS TO NEW SOLID WASTE DISPOSAL FACILITIES TO BE CREATED ON-SITE AND EXISTING LANDFILLS THAT WILL BE EXPANDED DURING REMEDIATION. PORTIONS		ACTION			
SW		3745-27-20	A,B,C	PROHIBITIONS AND CLOSURE	RULES FOR NEW AND EXISITING SITES. LOCATION RULES WITH RESPECT OT FLOOD PLAINS, AIRPORTS, GEOLOGIC FAULTS PLUS LINER /LEACHATE REQUIREMENTS.	PERTAINS TO SOLID WASTE LANDFILLS OPENED AFTER 06/01/94 OR EXISTING FACILITIES RECEIVING WASTE AFTER 06/01/94.		LOCATION	ACTION		6/1/94
TRANS		3745-27-22	C,D,I,J,K,L	CRITERIA FOR PTI FOR SOLID WASTE TRANSFER FACTILITIES	REQUIRES SETBACKS FROM FLOODPLAINS, SURFACE WATERS, PARKLANDS, DOMICILES. REQUIRES SUFFICIENT STRENGTH IN WASTE HANDLING FLOOR AND CONSTRUCTION OF LEACHATE CONTROL SYSTEM.	MAY PERTAIN TO REMEDIATION ACTIVITIES WHICH INVOLVE SOLID WASTE TRANSFER.					5/21/91

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TRANS		3745-27-23	D-Z	OPERATION OF SOLID WASTE TRANFERS FACILITIES.	DISCUSSES ACCESS CONTROL, TIME LIMITS FOR TRANSFER, ODER CONROL, FORBIDDEN WASTES, LEACHATE CONTROL, GW MONITORING, EMERGENCY PLANNING	MAY PERTAIN TO REMEDIATION EFFORTS WHICH INVOLVE WASTE TRANSPORTATION.					10/31/93
TRANS		3745-27-24	C.D.G	FINAL CLOSURE OF SOLID WASTE TRANSFER	REQUIRES CLEANUP AND WASTE REMOVAL FROM TRANSFER FACILITY	MAY PERTAIN TO TRANSFER FACILITIES USED IN REMEDIATION EFFORTS					10/31/93
				FACILITIES.	AFTER SHUTDOWN. REQUIRES DECOMISSIONING OF LEACHATE CONTROL SYSTEM						
SW		3745-27-51	C,D,I,J,K,L,M, N	ADDITIONAL CRITERIA FOR SOLID WASTE INCINERATOR PTI	RULES FOR LOCATION OF INCINERATOR (SETBACK FROM WATER SUPPLIES,FLOODPLAINS,PARKLANDS, DOMICILES) CONSTRUCTION GUIDELINES INCLUDING LEACHATE CONTROL SYSTEM.	PERTAINS TO SOLID WASTE INCINERATORS WHICH MAY BE CONSTRUCTED AS PART OF REMEDIATION EFFORTS AT SITE.					5/31/91
SW		3745-27-52	A-Z	OPERATION OF SOLID WASTE INCINERATOR FACILITIES	RULES FOR SAFE OPERATION OF INCINERATOR INCLUDING ACCESS CONTROL, FIRE CONTROL, RECORD KEEPING, EMERGENCY PLANS, ON-SITE STORAGE, WASTES FORBIDDEN FROM INCINERATION, GROUNDWATER MONITORING, LEACHATE CONTROL, WASTE HANDLING	PERTAINS TO INCINERATORS WHICH MAY BE CONSTRUCTED AS PART OF ON-SITE REMEDIATION EFFORTS.					5/31/91
SW		3745-27-53	C,D	FINAL CLOSURE, SOLID WASTE INCINERATOR	REQUIRES INCINERATOR SITE TO BE DECONTAMINATED UPON CLOSURE AND LEACHATE SYSTEM DECOMISSIONED TO PREVENT FUTURE POLLUTION PROBLEMS	APPLICABLE TO SITES WHICH INCINERATED HAZARDOUS WASTES					5/31/91
ISW		3745-29-06		PERMIT TO INSTALL ISW LANDFILL	REQUIRES TECHNICAL INFORMATION ON SITE AND SURROUNDING FOR PROPOSED LANDFILL AS WELL AS TECHNICAL DETAILS OF DESIGN AND OPERATION OF SITE.	INDUSTRIAL SOLID WASTE LANDFILL					6/1/94
ISW		3745-29-07	C,D,H	ADDITIONAL CRITERIA FOR ISW LANDFILLS	SITING CRITERIA SPECIFY MINIMUM SETBACK DISTANCES FROM PARKLANDS, GROUNDWATER SOURCES, MINES RIVERS, PROPERTY LINES, DOMICILES AND SURFACE WATER	INDUSTRIAL SOLID WASTE LANDFILLS					6/1/94
ISW		3745-29-08	C,D,E,F	CONSTRUCTION REQUIREMENTS FOR ISW LANDFILLS	SPECIFIES REQUIREMENTS FOR LINERS, TESTPADS, LEACHATE COLLECTION SYSTEMS, SURVEY MARKERS, SURFACE WATER CONTROL, GAS CONTROL, EARTHQUAKE RESISTANCE, CAPPING.	INDUSTRIAL SOLID WASTE LANDFILLS					6/1/94
ISW		3745-29-10	A-F	GROUNDWATER MONITORING PLAN FOR ISW LANDFILLS	REQUIRES GROUNDWATER MONITORING SYSTEM, LISTS CHEMICALS TO BE TESTED FOR, DISCUSSES STATISTICAL METHODS TO BE USED, REQUIRES CORRECTIVE ACTION PLANS IF CONTAMINATION IS FOUND	APPLICABLE TO UPPERMOST AQUIFER UNDER LANDFILL AND ZONES OF SATURATION ABOVE THAT AQUIFER.					6/1/94
ISW		3745-29-11	B,G,H	FINAL CLOSURE OF ISW LANDFILLS	REQUIRES CAPPING,REGRADING, GROUNDWATER MONITORING, SURFACE WATER MANAGEMENT, LEACHATE CONTROL AND FENCING FOR CLOSED SITES.	INDUSTRIAL SOLID LANDFILL SITES					6/1/94
ISW		3745-29-14	A,B	POST CLOSURE CARE OF ISW LANDFILL	REQUIRES CONTINUING MAINTENANCE OF CAP, GROUNDWATER MONITORING SYSTEM, GAS CONTROL SYSTEM, LEACHATE CONTROL SYSTEM,SURFACE WATER CONTROL. MANDATES QUARTERLY INSPECTION. GENERALLY REQUIRES CARE FOR 30 YEARS AFTER CLOSURE.	PERTAINS TO SITES CLOSED AFTER 03/01/87					6/1/94

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ISW		3745-29-19	E,F,J,K	OPERATIONAL CRITERIA FOR ISW LANDFILLS	SPECIFIES REQUIREMENTS FOR FENCING, LITTER CONTROL, RODENT CONTROL, FORBIDDEN WASTES (LIQUIDS, INFECTIOUS, ASBESTOS, PCB'S ETC.) COVER REQUIREMENTS, SURFACE WATER CONTROL, PERSONNEL QUALIFICATIONS, LEACHATE MANAGEMENT, CAPPING , RECORD KEEPING.	INDUSTRIAL SOLID WASTE LANDFILLS EXCEPT IF PLAN WAS APPROVED PRIOR TO 07/29/76 OR IF PERMIT TO INSTALL WAS ISSUED PRIOR TO 01/01/80					6/1/94
DSW		3745-3-04	A-D	PROHIBITED DISCHARGES	PLACES RESTRICTIONS ON DISCHARGES TO POTW'S THAT MAY HARM TREATMENT FUNCTIONS OR PASS THROUGH TO RECEIVING STREAM.	CONSIDER FOR SITES WITH DISCHARGES TO POTW					4/15/91
DSW		3745-3-05	A-C	NOTIFICATION OF POTENTIAL PROBLEMS INCLUDING SLUG LOAD	REQUIRES INDUSTRIAL USERS TO NOTIFY POTW OF DISCHARGES THAT MAY ADVERSELY AFFECT TREATMENT OPERATIONS, INCLUDING SLUG LOADS	CONSDIER FOR SITES WITH DISCHARGES TO POTW.					4/15/91
RSW		3745-30-04	A-C	RESIDUAL WASTE LANDFILL CLASSIFICATION	GIVES STANDARDS FOR CLASSIFICATION OF RESIDUAL WASTES. GIVES EXCEPTIONS FROM MONITORING, SOIL LINER, CAPPING, GEOMEMBRANE, LEACHATE COLLECTION REQUIREMENTS FOR CLASS IV WASTES.	PERTAINS TO REMEDIATION SITES WITH WASTES THAT QUALIFY AS RESDIUAL SOLID WASTE. GIVES RULES FOR DISPOSAL OF THOSE WASTES	3745-30-01,3745-30-03				1/13/92
RSW		3745-30-06	B	CRITERIA FOR PTI FOR RESIDUAL SOLID WASTE LANDFILL	LOCATION CRITERIA WITH RESPECT TO PARKLANDS, WATER SUPPLIES, QUAKE FAULTS, MINES, FLOODPLAINS SEPARATION REQUIREMENTS BETWEEN LANDFILL LINERS AND AQUIFERS FOR EACH CLASS OF RESIDUAL SOLID WASTE.	PERTAINS TO REMEDIATION SITES WITH RESIDUAL SOLID WASTE. GIVES RULES FOR DISPOSAL OF THOSE WASTES					1/13/92
RSW		3745-30-07	C,D,E	RESIDUAL SOLID WASTE LANDFILL FACILITY CONSTRUCTION	LINER REQUIREMENTS FOR EACH CLASS OF RESIDUAL SOLID WASTE. REQUIREMENTS FOR GEOMEMBRANES, LEACHATE COLLECTION SYSTEM, WATER RUNOFF CONTROL, GAS CONTROL, TEST PADS, ETC.	PERTAINS TO REMEDIATION SITES WITH RESIDUAL SOLID WASTE. GIVES RULES FOR RESIDUAL SOLID WASTE DISPOSAL.					1/13/92
RSW		3745-30-08	B-F	GROUNDWATER MONITORING, RESIDUAL SOLID WASTE LANDFILLS	REQUIRES MONITORING WELLS FOR UPPERMOST AQUIFER AND ZONE OF SATURATION BELOW LANDFILL. REQUIRES COLLECTION PLAN, QA PROCEDURES AND CORRECTIVE ACTION IF CONTAMINATION OCCURS	PERTAINS TO SITES WHERE RESIDUAL SOLID WASTE IS BURIED.					1/13/92
RSW		3745-30-09	F	FINAL CLOSURE, RESIDUAL SOLID WASTE LANDFILL	REQUIRES CAPPING, GROUNDWATER MONITORING, SITE SECURITY AT RSW SITE.	PERTAINS TO RSW LANDFILL SITES.					1/13/92
RSW		3745-30-10	A,C	POST-CLOSURE CARE OF RESIDUAL WASTE LANDFILL FACILITIES	ESTABLISHES TIME FRAME FOR POST-CLOSURE CARE. REQUIRES MAINTENANCE OF CAP, LEACHATE CONTROL SYSTEM AND GAS CONTROL SYSTEM AND GROUND WATER MONITORING. MANDATES QUARTERLY INSPECTIONS	PERTAINS TO SITES WHERE RSW IS LANDFILLED.					1/13/92
RSW		3745-30-14	D-DD	OPERATION OF FACILITIES	REQUIRES CONTROL OF ODERS, NOISE, ACCESS, DUST, AIR EMISSIONS INCLUDES REQUIREMENTS FOR CAPPING, COVERING, SURFACE WATER CONTROL, LEACHATE CONTROL, FIRE PREVENTION, NUISANCE AVOIDANCE.	PERTAINS TO SITES WHERE RSW IS LANDFILLED.					1/13/92
APC		3745-31-03	A (2)	PERMIT TO INSTALL, EXEMPTIONS	EXEMPTS SUPERFUND (CERCLA) SITES FROM AIR PERMITTING REQUIREMENTS SUCH SITES MUST STILL MET SUBSTANTIVE REQUIREMENTS OF PERMIT AND AIR EMISSION LIMITS.	APPLIES TO SUPERFUND SITES WHERE ALL ACTIVITIES ARE CARRIED OUT ON-SITE.					8/13/96

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WS APC		3745-31-05		WATER/AIR PERMIT CRITERIA FOR DECISION BY THE DIRECTOR	A PERMIT TO INSTALL (PTI) OR PLANS MUST DEMONSTRATE BEST AVAILABLE TECHNOLOGY (BAT) AND SHALL NOT INTERFER WITH OR PREVENT THE ATTAINMENT OR MAINTENANCE OF APPLICABLE AMBIENT AIR QUALITY STANDARDS.	PERTAINS TO ANY SITE THAT WILL DISHARGE TO ON-SITE SURFACE WATER OR WILL EMIT CONTAMINANTS INTO THE AIR.		ACTION			
WS		3745-32-05		WATER QUALITY CRITERIA FOR DECISION BY THE DIRECTOR	SPECIFIES SUBSTANTIVE CRITERIA FOR SECTION 401 WATER QUALITY CRITERIA FOR DREDGING, FILLING, OBSTRUCTIONG OR ALTERING WATERS OF THE STATE	PERTAINS TO ANY SITE THAT HAS OR WILL AFFECT WATERS OF THE STATE.		ACTION			
UIC		3745-34-06		PROHIBITION OF UNAUTHORIZED INJECTION	UNDERGROUND INJECTION IS PROHIBITED WITHOUT AUTHORIZATION FROM THE DIRECTOR.	PERTAINS TO SITES AT WHICH MATERIALS ARE TO BE INJECTED UNDERGROUND. CONSIDER FOR TECHNOLOGIES SUCH AS BIOREMEDIATION AND SOIL FLUSHING.		ACTION			
UIC		3745-34-07		NO MOVEMENT OF FLUID INTO UNDERGROUND DRINKING WATER	THE UNDERGROUND INJECTION OF FLUID CONTAINING ANY CONTAMINANT INTO AN UNDERGROUND SOURCE OF DRINKING WATER IS PROHIBITED IF THE PRESENCE OF THAT CONTAMINANT MAY CAUSE A VIOLATION OF THE PRIMARY DRINKING WATER STANDARDS OR OTHER WISE ADVERSELY AFFECT THE HEALTH OF PERSONS.	PERTAINS TO SITES AT WHICH MATERIALS ARE TO BE INJECTED UNDERGROUND. CONSIDER FOR TECHNOLOGIES SUCH AS BIOREMEDIATION AND SOIL FLUSHING.					
UIC		3745-34-08		ELIMINATION OF CLASS IV WELLS	THE INJECTION OF HAZARDOUS OR RADIOACTIVE WASTE DIRECTLY INTO AN UNDERGROUND SOURCE OF DRINKING WATER IS PROHIBITED.	PERTAINS TO SITES AT WHICH MATERIALS ARE TO BE INJECTED UNDERGROUND. CONSIDER FOR TECHNOLOGIES SUCH AS BIOREMEDIATION AND SOIL FLUSHING.					
UIC		3745-34-09		REQUIREMENTS FOR WELLS INJECTING HAZARDOUS WASTE	SPECIFIES REQUIREMENTS FOR THE INJECTION OF HAZARDOUS WASTES UNDERGROUND. SEE 3745-34-08 FOR LIMITATIONS.	PERTAINS TO SITES AT WHICH MATERIALS ARE TO BE INJECTED UNDERGROUND. CONSIDER FOR TECHNOLOGIES SUCH AS BIOREMEDIATION AND SOIL FLUSHING.					
UIC		3745-34-10		WAIVER OF REQUIREMENT BY DIRECTOR	THE DIRECTOR MAY AUTHORIZE LESS STRINGENT REQUIREMENTS FOR AN INJECTION THAT DOES NOT OCCUR INTO, THROUGH OR ABOVE AN UNDERGROUND SOURCE OF DRINKING WATER.	PERTAINS TO SITES AT WHICH MATERIALS ARE TO BE INJECTED UNDERGROUND. CONSIDER FOR TECHNOLOGIES SUCH AS BIOREMEDIATION AND SOIL FLUSHING.					
UIC		3745-34-13		CLASS V WELLS	SPECIFIES REQUIREMENTS FOR CLASS V WELLS SEE 3745-34-04 FOR DEFINITIONS	PERTAINS TO SITES AT WHICH MATERIALS ARE TO BE INJECTED UNDERGROUND. CONSIDER FOR TECHNOLOGIES SUCH AS BIOREMEDIATION AND SOIL FLUSHING.					
UIC		3745-34-26		CONDITIONS APPLICABLE TO ALL PERMITS	SPECIFIES MINIMUM CONDITIONS TO BE APPLIED TO ALL UNDERGROUND INJECTIONS.	PERTAINS TO SITES AT WHICH MATERIALS ARE TO BE INJECTED UNDERGROUND. CONSIDER FOR TECHNOLOGIES SUCH AS BIOREMEDIATION AND SOIL FLUSHING.					
UIC		3745-34-34		MECHANICAL INTEGRITY	SPECIFIES REQUIREMENTS TO BE MET TO ENSURE MECHANICAL INTEGRITY OF WELLS	PERTAINS TO SITES AT WHICH MATERIALS ARE TO BE INJECTED UNDERGROUND. CONSIDER FOR TECHNOLOGIES SUCH AS BIOREMEDIATION AND SOIL FLUSHING.					
UIC		3745-34-36		PLUGGING AND ABANDONING CLASS I WELLS	SPECIFIES REQUIREMENTS TO BE MET WHEN PLUGGING OR ABANDONING A CLASS I WELL SEE 3745-34-04 FOR DEFINITIONS.	PERTAINS TO SITES AT WHICH MATERIALS ARE TO BE INJECTED UNDERGROUND. CONSIDER FOR TECHNOLOGIES SUCH AS BIOREMEDIATION AND SOIL FLUSHING.					
UIC		3745-34-37		CONSTRUCTION REQUIREMENTS FOR CLASS I WELLS	SPECIFIES CONSTRUCTION AND SITING REQUIREMENTS FOR CLASS I WELLS.	PERTAINS TO SITES AT WHICH MATERIALS ARE TO BE INJECTED UNDERGROUND. CONSIDER FOR TECHNOLOGIES SUCH AS BIOREMEDIATION AND SOIL FLUSHING.		ACTION	LOCATION		
UIC		3745-34-38		OPERATING, MONITORING & REPORTING REQ FOR CLASS I WELLS	SPECIFIES OPERATING, MONITORING AND REPORTING REQUIREMENTS NECESSARY FOR CLASS I WELLS.	PERTAINS TO SITES AT WHICH MATERIALS ARE TO BE INJECTED UNDERGROUND. CONSIDER FOR TECHNOLOGIES SUCH AS BIOREMEDIATION AND SOIL FLUSHING.					

CATEGORY	ORC	OAC	PERTINENT PARAGRAPH	TITLE OR SUBJECT OF REGULATION	DESCRIPTION OF REGULATION	APPLICATION OF REGULATION	REF	ARAR TYPE 1	ARAR TYPE 2	FEDERAL REGULATION	LAST REVISION
HW		3745-50-221	A,B	PETITIONS TO EXCLUDE A LISTED WASTE AT A FACILITY	ALLOWS FOR PETITIONS TO EXCLUDE HAZARDOUS WASTES FROM A PARTICULAR FACILITY FROM THE LISTS IN RULES 3745-51-30 TO 3745-51-31 OF THE OAC. ALSO STATES THAT OHIO EPA WILL RECOGNIZE USEPA'S DECISION TO GRANT OR DENY SUCH PETITIONS ON THE FEDERAL LEVEL	PERTAINS TO ANY SITE WHICH HAS WASTES THAT WILL BE DELISTED BY USEPA. SHOULD OHIO LIST WASTES NOT ADDRESSED BY USEPA, THIS RULE WOULD ALLOW OHIO EPA THE OPPORTUNITY TO DELIST THESE WASTES	3745-50-10,3745-50-11	ACTION			
HW		3745-50-311	A,B,C	RECYCLING VARIANCES FROM CLASSIFICATION AS A WASTE			3745-50-10,3745-50-11				
HW		3745-50-312	A,B,C	STDS & CRITERIA FOR VARIANCES FROM CLASS AS A WASTE	PRESENTS CRITERIA BY WHICH DIRECTOR MAY GRANT REQUESTS FOR VARIANCE FROM CLASSIFYING CERTAIN MATERIALS AS A WASTE.	PERTAINS TO ANY SITE THAT HAS WASTES THAT MAY BE RECYCLED OR RECLAIMED.	3745-50-10,3745-50-11	ACTION	CHEMICAL		
HW		3745-50-315	A	ADD'L REG OF CERTAIN HAZ WASTE RECYCLING ACTIVITIES	DIRECTOR MAY REGULATE HAZARDOUS WASTES OTHERWISE EXEMPTED BECAUSE OF RECYCLING ACTIVITIES AS HAZARDOUS WASTES ON A CASE-BY-CASE BASIS. THE CRITERIA TO MAKE THIS DECISION ARE PROVIDED BY THIS RULE.	PERTAINS TO ANY SITE THAT HAS HAZARDOUS WASTES THAT WILL BE EXEMPTED FROM THE HAZARDOUS WASTE RULES PER OAC 3745-51-06 (RECYCLING EXEMPTIONS).	3745-50-10,3745-50-11	ACTION	CHEMICAL		
HW		3745-50-44	A	PERMIT INFO REQUIRED FOR ALL HAZ WASTE FACILITIES	ESTABLISHES THE SUBSTANTIVE HAZARDOUS WASTE PERMIT REQUIREMENTS NECESSARY FOR OHIO EPA TO DETERMINE FACILITY COMPLIANCE. INCLUDES INFORMATION SUCH AS FACILITY DESCRIPTION, WASTE CHARACTERISTICS, EQUIPMENT DESCRIPTIONS, CONTINGENCY PLAN, FACILITY LOCATION, TOPOGRAPHIC MAP, ETC.	PERTAINS TO ANY SITE WHICH WILL HAVE TREATMENT, STORAGE OR DISPOSAL OF HAZARDOUS WASTE OCCURRING ON-SITE OR HAS EXISTING AREAS OF HAZARDOUS WASTE CONTAMINATION ON-SITE THAT WILL BE CAPPED IN-PLACE. THIS, ALONG WITH OTHER PARAGRAPHS OF THIS RULE, ESTABLISHES THE MINIMUM INFORMATION REQUIRED DURING THE REMEDIAL DESIGN STAGE.	3745-50-10,3745-50-11	ACTION			
HW		3745-50-44	B	PERMIT INFO REQ FOR ALL HAZ WASTE LAND DISP FACILITIES	ESTABLISHES THE SUBSTANTIVE HAZARDOUS WASTE LAND DISPOSAL PERMIT REQUIREMENTS NECESSARY FOR OHIO EPA TO DETERMINE ADEQUATE PROTECTION OF THE GROUND WATER. INCLUDES INFORMATION SUCH AS GROUND WATER MONITORING DATA, INFORMATION ON INTERCONNECTED AQUIFERS, PLUME(S) OF CONTAMINATION, PLANS AND REPORTS ON GROUND WATER MONITORING PROGRAM, ETC.	PERTAINS TO ANY FACILITY/SITE WHICH WILL HAVE HAZARDOUS WASTE DISPOSED OF ON-SITE OR HAS EXISTING AREAS OF HAZARDOUS WASTE CONTAMINATION ON-SITE THAT WILL BE CAPPED IN-PLACE. THIS, ALONG WITH OTHER PARAGRAPHS OF THIS RULE, ESTABLISHES THE MINIMUM INFORMATION REQUIRED DURING THE REMEDIAL DESIGN STAGE.		ACTION			
HW		3745-50-44	C1	ADD'L PERMIT INFO: HAZ WASTE STORAGE IN CONTAINERS	ESTABLISHES THE SUBSTANTIVE HAZARDOUS WASTE PERMIT REQUIREMENTS NECESSARY FOR OHIO EPA TO DETERMINE ADEQUACY OF CONTAINER STORAGE. INCLUDES INFORMATION SUCH AS DESCRIPTION OF CONTAINMENT SYSTEM, DETAILED DRAWINGS, ETC. SEE OAC 3745-55-70 THROUGH 3745-55-78 FOR ADDITIONAL CONTAINER REQUIREMENTS	PERTAINS TO ANY SITE AT WHICH STORAGE OF HAZARDOUS WASTE ON-SITE WILL OCCUR IN CONTAINERS. CONSIDER FOR WASTES AND CONTAMINATED SOILS THAT ARE STORED PRIOR TO TREATMENT OR DISPOSAL. THIS, ALONG WITH OTHER PARAGRAPHS OF THIS RULE AND OAC 3745-55-70 THROUGH 3745-55-78, ESTABLISHES THE MINIMUM INFORMATION REQUIRED DURING THE REMEDIAL DESIGN STAGE		ACTION			

CATEGORY	ORC	OAC	PERTINENT PARAGRAPH	TITLE OR SUBJECT OF REGULATION	DESCRIPTION OF REGULATION	APPLICATION OF REGULATION	REF	ARAR TYPE 1	ARAR TYPE 2	FEDERAL REGULATION	LAST REVISION
HW		3745-50-44	C2	ADD'L PERMIT INFO: HAZ WASTE STORAGE/ TREAT IN TANKS	ESTABLISHES SUBSTANTIVE HAZARDOUS WASTE PERMIT REQUIREMENTS NECESSARY FOR OHIO EPA TO DETERMINE ADEQUACY OF TANK TREATMENT AND STORAGE UNITS. INCLUDES INFORMATION SUCH AS ASSESSMENT OF STRUCTURAL INTEGRITY, DETAILED PLANS OF TANK	PERTAINS TO ANY SITE AT WHICH STORAGE OR TREATMENT OF HAZARDOUS WASTE IN TANKS WILL OCCUR ON-SITE. THIS, ALONG WITH OTHER PARAGRAPHS OF THIS RULE AND OAC 3745-55-90 THROUGH 3745-55-99, ESTABLISHES THE MINIMUM INFORMATION REQUIRED DURING		ACTION			
					SYSTEM(S), DESCRIPTION OF SECONDARY CONTAINMENT SYSTEM, ETC. SEE OAC 3745-55-90 THROUGH 3745-55-99 FOR ADDITIONAL REQUIREMENTS.	THE REMEDIAL DESIGN STAGE.					
HW		3745-50-44	C3	ADD'L PERMIT INFO: HAZ WASTE STOR/TREAT IN SURF IMPOUND	ESTABLISHES SUBSTANTIVE HAZARDOUS WASTE PERMIT REQUIREMENTS NECESSARY FOR OHIO EPA TO DETERMINE ADEQUACY OF BOTH NEW SURFACE IMPOUNDMENTS AND EXTENSIONS OF EXISTING SURFACE IMPOUNDMENTS USED TO STORE OR TREAT HAZARDOUS WASTE. INCLUDES INFORMATION SUCH AS WASTE CHARACTERISTICS, DETAILED PLANS AND REPORTS, INFORMATION ON STRUCTURAL INTEGRITY, CLOSURE INFORMATION, ETC. SEE OAC 3745-56-20 THROUGH 3745-56-33 FOR ADDITIONAL SURFACE IMPOUNDMENT REQUIREMENTS.	PERTAINS TO ANY SITE AT WHICH EITHER A NEW SURFACE IMPOUNDMENT WILL BE INSTALLED OR AN EXISTING SURFACE IMPOUNDMENT WILL BE EXPANDED. THIS, ALONG WITH OTHER PARAGRAPHS OF THIS RULE AND OAC 3745-20-50 THROUGH 3745-33-60, ESTABLISHES THE MINIMUM INFORMATION REQUIRED DURING THE REMEDIAL DESIGN STAGE.		ACTION			
HW		3745-50-44	C4	ADD'L PERMIT INFO: HAZ WASTE STOR/TREAT IN WASTE PILES	ESTABLISHES SUBSTANTIVE HAZARDOUS WASTE PERMIT REQUIREMENTS NECESSARY FOR OHIO EPA TO DETERMINE ADEQUACY OF SURFACE IMPOUNDMENTS USED TO TREAT OR STORE HAZARDOUS WASTE. INCLUDES INFORMATION SUCH AS WASTE CHARACTERISTICS, DETAILED DESIGN PLANS AND REPORTS, CONTROL OF RUN-ON AND RUN-OFF, CLOSURE INFORMATION, ETC. SEE OAC 3745-56-20 THROUGH 3745-56-33 FOR ADDITIONAL SURFACE IMPOUNDMENT REQUIREMENTS.	PERTAINS TO SITE AT WHICH HAZARDOUS WASTE WILL BE STORED OR TREATED IN SURFACE IMPOUNDMENTS. THIS, ALONG WITH OTHER PARAGRAPHS OF THIS RULE AND OAC 3745-56-20 THROUGH 3745-56-33, ESTABLISHES THE MINIMUM INFORMATION REQUIRED DURING THE REMEDIAL DESIGN STAGE.		ACTION			5/28/93
HW		3745-50-44	C5	ADD'L PERMIT INFO: HAZ WASTE TREAT/DISP BY LAND TREAT	ESTABLISHES SUBSTANTIVE HAZARDOUS WASTE PERMIT REQUIREMENTS NECESSARY FOR OHIO EPA TO DETERMINE ADEQUACY OF LAND TREATMENT TO TREAT OR DISPOSE OF HAZARDOUS WASTES. INCLUDES INFORMATION SUCH AS WASTE CHARACTERISTICS, DESIGN MEASURES TO MAXIMIZE TREATMENT, DIMENSIONS OF TREATMENT ZONE, DESIGN OF UNIT, INFORMATION ON POTENTIAL CROPS, ETC. SEE OAC 3745-56-70 THROUGH 3745-56-83 FOR ADDITIONAL LAND TREATMENT REQUIREMENTS	PERTAINS TO ANY SITE AT WHICH LAND TREATMENT WILL BE USED TO TREAT OR DISPOSE OF HAZARDOUS WASTES. THIS, ALONG WITH OTHER PARAGRAPHS OF THIS RULE AND OAC 3745-20-50 THROUGH 3745-33-60, ESTABLISHES THE MINIMUM INFORMATION REQUIRED DURING THE REMEDIAL DESIGN STAGE.		ACTION			

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HW		3745-50-44	C6	ADD'L PERMIT INFO ENVIRONMENTAL PERFORMANCE STANDARDS	ESTABLISHES SUBSTANTIVE HAZARDOUS WASTE PERMIT REQUIREMENTS NECESSARY FOR OHIO EPA TO DETERMINE ADEQUACY OF SURFACE IMPOUNDMENTS, WASTE PILES, LAND TREATMENT UNITS, LANDFILLS, AND UNDERGROUND INJECTION WELLS USED TO TREAT, STORE	PERTAINS TO SITE AT WHICH HAZARDOUS WASTE WILL BE OR HAS BEEN STORED, TREATED OR DISPOSED OF IN SURFACE IMPOUNDMENTS, WASTE PILES, LAND TREATMENT UNITS, LANDFILLS OR UNDERGROUND INJECTION WELLS . THIS, ALONG WITH OTHER PARAGRAPHS OF THIS		ACTION			5/29/93
					OR DISPOSE OF HAZARDOUS WASTE. INCLUDES INFORMATION SUCH AS WASTE CHARACTERISTICS, DETAILED DESIGN PLANS AND REPORTS, CONTROL OF RUN-ON AND RUN-OFF, CLOSURE INFORMATION, ETC. SEE OAC 3745-57-01 ADDITIONAL REQUIREMENTS.	RULE AND OAC 3745-57-01 ESTABLISHES THE MINIMUM INFORMATION REQUIRED DURING THE REMEDIAL DESIGN STAGE.					
HW		3745-50-44	C7	ADD'L PERMIT INFO: HAZ WASTE DISPOSAL IN LANDFILLS	ESTABLISHES SUBSTANTIVE HAZARDOUS WASTE PERMIT REQUIREMENTS NECESSARY FOR OHIO EPA TO DETERMINE ADEQUACY OF LANDFILLS USED FOR DISPOSAL OF HAZARDOUS WASTE. INCLUDES INFORMATION SUCH AS WASTE CHARACTERISTICS, DETAILED DESIGN PLANS AND REPORTS, CONTROL OF RUN-ON AND RUN-OFF, CLOSURE INFORMATION, ETC . SEE OAC 3745-57-02 THROUGH 3745-57-18 FOR ADDITIONAL LANDFILL REQUIREMENTS.	PERTAINS TO SITE AT WHICH HAZARDOUS WASTE WILL BE OR HAS BEEN DISPOSED OF IN LANDFILLS. THIS, ALONG WITH OTHER PARAGRAPHS OF THIS RULE AND OAC 3745-57-02 THROUGH 3745-57-18, ESTABLISHES THE MINIMUM INFORMATION REQUIRED DURING THE REMEDIAL DESIGN STAGE.		ACTION			
HW		3745-50-44	C8	ADD'L PERMIT INFO: HAZ WASTE TREATMENT BY INCINERATION	ESTABLISHES SUBSTANTIVE HAZARDOUS WASTE PERMIT REQUIREMENTS NECESSARY FOR OHIO EPA TO DETERMINE ADEQUACY OF INCINERATORS USED TO TREAT HAZARDOUS WASTE. INCLUDES INFORMATION SUCH AS WASTE CHARACTERISTICS, DETAILED DESIGN PLANS AND REPORTS, TRIAL BURN DATA, CLOSURE INFORMATION, ETC... SEE OAC 3745-57-40 THROUGH 3745-57-51 FOR ADDITIONAL INCINERATOR REQUIREMENTS.	PERTAINS TO SITE AT WHICH HAZARDOUS WASTE WILL BE TREATED BY INCINERATION. THIS, ALONG WITH OTHER PARAGRAPHS OF THIS RULE AND OAC 3745 57-40 THROUGH 3745-57-51, ESTABLISHES THE MINIMUM INFORMATION REQUIRED DURING THE REMEDIAL DESIGN STAGE.		ACTION	?		5/28/93
HW		3745-50-44	C9	ADD'L PERMIT INFO: HAZ WASTE T/S/D IN MISC UNITS	ESTABLISHES SUBSTANTIVE HAZARDOUS WASTE PERMIT REQUIREMENTS NECESSARY FOR OHIO EPA TO DETERMINE ADEQUACY OF MISCELLANEOUS UNITS USED TO TREAT OR STORE HAZARDOUS WASTE. INCLUDES INFORMATION SUCH AS WASTE CHARACTERISTICS, DETAILED DESIGN PLANS AND REPORTS, CONTROL OF RUN-ON AND RUN-OFF, CLOSURE INFORMATION, ETC.. SEE OAC 3745-57-90 THROUGH 3745-57-93 FOR ADDITIONAL REQUIREMENTS FOR MISCELLANEOUS UNITS	PERTAINS TO FACILITY/SITE AT WHICH HAZARDOUS WASTE WILL BE STORED, TREATED OR DISPOSED OF IN MISCELLANEOUS UNITS. THIS, ALONG WITH OTHER PARAGRAPHS OF THIS RULE AND OAC 3745-57-90 THROUGH 3745-57-93, ESTABLISHES THE MINIMUM INFORMATION REQUIRED DURING THE REMEDIAL DESIGN STAGE.		ACTION			5/28/93

CATEGORY	ORC	OAC	PERTINENT PARAGRAPH	TITLE OR SUBJECT OF REGULATION	DESCRIPTION OF REGULATION	APPLICATION OF REGULATION	REF	ARAR TYPE 1	ARAR TYPE 2	FEDERAL REGULATION	LAST REVISION
HW		3745-50-58	E,I,J	HAZARDOUS WASTE FACILITY PERMIT CONDITIONS	ESTABLISHES GENERAL PERMIT CONDITIONS APPLIED TO ALL HAZARDOUS WASTE FACILITIES IN OHIO. INCLUDES CONDITIONS SUCH AS OPERATION AND MAINTENANCE, SITE ACCESS, MONITORING, ETC	PERTAINS TO ALL ALTERNATIVES THAT WILL INCORPORATE TREATMENT, STORAGE OR DISPOSAL OF HAZARDOUS WASTE		ACTION			8/27/93
HW		3745-50-62	A,B,C,D	TRIAL BURN FOR INCINERATORS	SPECIFIES REQUIREMENTS OF A TRIAL BURN.	PERTAINS TO ANY ALTERNATIVE INCORPORATING ON-SITE INCINERATION.		ACTION			
HW		3745-51-05	A-J	REQ. FOR CONDITIONALLY EXEMPT SMALL QUANTITY GENERATORS	SPECIFIES REQUIREMENTS FOR CONDITIONALLY EXEMPT SMALL QUANTITY GENERATORS OF HAZARDOUS WASTE. PROVIDES RELIEF FROM MANY OF THE HAZARDOUS WASTE REGULATIONS.	CONSIDER FOR SITES WHERE THE QUANTITY OF HAZARDOUS WASTE GENERATED BY AN ON-SITE ACTION WILL BE LESS THAN 100 KG PER MONTH. MONTHLY LIMIT FOR ACUTE HAZARDOUS WASTE IS ONE (1) KG.		ACTION	CHEMICAL		3/29/93
HW		3745-51-06	A,B,C(1)	REQUIREMENTS FOR RECYCLED MATERIALS	DEFINES RECYCLED HAZARDOUS WASTES AND ESTABLISHES SPECIFIC EXEMPTIONS FOR THESE WASTES FROM THE HAZARDOUS WASTE REGULATIONS.	PERTAINS TO ANY SITE AT WHICH RECYCLING OF HAZARDOUS WASTES MAY TAKE PLACE. CONSIDER FOR SITES AT WHICH THE FOLLOWING MATERIALS ARE PRESENT: INDUSTRIAL ETHYL ALCOHOL USED BATTERIES USED OIL SCRAP METAL PETROLEUM PRODUCTS K087 COAL AND COKE TAR SLUDGE		ACTION	CHEMICAL		3/29/93
HW		3745-51-07	A,B	RESIDUES OF HAZ WASTES IN EMPTY CONTAINERS	EXEMPTS THE RESIDUES OF HAZARDOUS WASTES FROM EMPTY CONTAINERS FROM THE HAZARDOUS WASTE REGULATIONS. PROVIDES SPECIFIC DEFINITIONS FOR THESE RESIDUES.	PERTAINS TO ANY ALTERNATIVE THAT INCORPORATES STORAGE OF HAZARDOUS WASTE ON-SITE IN CONTAINERS.		ACTION			
HW		3745-52-11	A-D	EVALUATION OF WASTES	ANY PERSON GENERATING A WASTE MUST DETERMINE IF THAT WASTE IS A HAZARDOUS WASTE (EITHER THROUGH LISTING OR BY CHARACTERISTIC).	PERTAINS TO SITES AT WHICH WASTES OF ANY TYPE (BOTH SOLID AND HAZARDOUS) ARE LOCATED.	3745-51-01 THROUGH 3745-51-33	CHEMICAL	ACTION		3/29/93
HW		3745-52-20		HAZARDOUS WASTE MANIFEST - GENERAL REQUIREMENTS	REQUIRES A GENERATOR WHO TRANSPORTS OR OFFERS FOR TRANSPORTATION HAZARDOUS WASTE FOR OFF-SITE TREATMENT, STORAGE OR DISPOSAL TO PREPARE A UNIFORM HAZARDOUS WASTE MANIFEST.	PERTAINS TO SITES WHERE HAZARDOUS WASTE WILL BE TRANSPORTED OFF-SITE FOR TREATMENT, STORAGE OR DISPOSAL	3745-52-10	CHEMICAL	ACTION		5/28/93
HW		3745-52-22		HAZARDOUS WASTE MANIFEST - NUMBER OF COPIES	SPECIFIES THE NUMBER OF MANIFEST COPIES TO BE PREPARED	PERTAINS TO SITES WHERE HAZARDOUS WASTE WILL BE TRANSPORTED OFF-SITE FOR TREATMENT, STORAGE OR DISPOSAL	3745-52-10	CHEMICAL	ACTION		5/28/93
HW		3745-52-23		HAZARDOUS WASTE MANIFEST - USE	SPECIFIES PROCEDURES FOR THE USE OF HAZARDOUS WASTE MANIFESTS INCLUDING A REQUIREMENT THAT THEY BE HAND SIGNED BY THE GENERATOR	ERTAINS TO SITES WHERE HAZARDOUS WASTE WILL BE TRANSPORTED OFF-SITE FOR TREATMENT, STORAGE OR DISPOSAL	3745-52-10	CHEMICAL	ACTION		5/28/93
HW		3745-52-30		HAZARDOUS WASTE PACKAGING	REQUIRES A GENERATOR TO PACKAGE HAZARDOUS WASTE IN ACCORDANCE WITH U.S. DOT REGULATIONS FOR TRANSPORTATION OFF-SITE	PERTAINS TO ANY SITE WHERE HAZARDOUS WASTE WILL BE GENERATED BY ON-SITE ACTIVITIES AND SHIPPED OFF-SITE FOR TREAMENT AND/OR DISPOSAL	3745-52-10, 49CFR 173,178,179	CHEMICAL	ACTION		3/30/93
HW		3745-52-31		HAZARDOUS WASTE LABELING	REQUIRES PACKAGES OF HAZARDOUS WASTE TO BE LABELLED IN ACCORDANCE WITH U S DOT REGULATIONS FOR OFF-SITE TRANSPORTATION.	PERTAINS TO ANY SITE WHERE HAZARDOUS WASTE WILL BE GENERATED BY ON-SITE ACTIVITIES AND SHIPPED OFF-SITE FOR TREATMENT AND/OR DISPOSAL.	3745-52-10, 49CFR 172	CHEMICAL	ACTION		3/30/93
HW		3745-52-32		HAZARDOUS WASTE MARKING	SPECIFIES LANGUAGE FOR MARKING PACKAGES OF HAZARDOUS WASTE PRIOR TO OFF-SITE TRANSPORTATION	PERTAINS TO ANY SITE WHERE HAZARDOUS WASTE WILL BE GENERATED BY ON-SITE ACTIVITIES AND SHIPPED OFF-SITE FOR TREATMENT AND/OR DISPOSAL.	3745-52-10, 49CFR 172	CHEMICAL	ACTION		3/3/93

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HW		3745-52-33		HAZARDOUS WASTE PLACARDING	GENERATOR SHALL PLACARD HAZARDOUS WASTE PRIOR TO OFF-SITE TRANSPORTATION.	PERTAINS TO ANY SITE WHERE HAZARDOUS WASTE WILL BE GENERATED BY ON-SITE ACTIVITIES AND SHIPPED OFF-SITE FOR TREATMENT AND/OR DISPOSAL.	3745-52-10, 49CFR 172(F)	CHEMICAL	ACTION		3/30/93
HW		3745-52-34		ACCUMULATION TIME OF HAZARDOUS WASTE	IDENTIFIES MAXIMUM TIME PERIODS THAT A GENERATOR MAY ACCUMULATE A HAZARDOUS WASTE WITHOUT BEING	PERTAINS TO A SITE WHERE HAZARDOUS WASTE WILL BE GENERATED AS A RESULT OF THE REMEDIAL ACTIVITIES	3745-52-10	CHEMICAL	ACTION		3/30/93
					CONSIDERED AN OPERATOR OF A STORAGE FACILITY. ALSO ESTABLISHES STANDARDS FOR MANAGEMENT OF HAZARDOUS WASTES BY GENERATORS.						
HW		3745-54-13	A	GENERAL ANALYSIS OF HAZARDOUS WASTE	PRIOR TO ANY TREATMENT, STORAGE OR DISPOSAL OF HAZARDOUS WASTES, A REPRESENTATIVE SAMPLE OF THE WASTE MUST BE CHEMICALLY AND PHYSICALLY ANAYZED.	PERTAINS TO ANY SITE AT WHICH HAZARDOUS IS TO BE TREATED, STORED OR DISPOSED OF (OR HAS BEEN DISPOSED OF).	3745-54-01	CHEMICAL			
HW		3745-54-14	A,B,C	SECURITY FOR HAZARDOUS WASTE FACILITIES	HAZARDOUS WASTE FACILITIES MUST BE SECURED SO THAT UNAUTHORIZED AND UNKNOWING ENTRY ARE MINIMIZED OR PROHIBITED	PERTAINS TO ANY SITE AT WHICH HAZARDOUS IS TO BE TREATED, STORED OR DISPOSED OF (OR HAS BEEN DISPOSED OF).	3745-54-01	ACTION			
HW		3745-54-15	A,C	INSPECTION REQUIREMENTS FOR HAZARDOUS WASTE FACILITIES	HAZARDOUS WASTE FACILITIES MUST BE INSPECTED REGULARLY TO DETECT MALFUNCTIONS, DETERIORATIONS, OPERATIONAL ERRORS AND DISCHARGES. ANY MALFUNCTIONS OR DETERIORATIONS DETECTED SHALL BE REMEDIED EXPEDITIOUSLY	PERTAINS TO ANY SITE AT WHICH HAZARDOUS IS TO BE TREATED, STORED OR DISPOSED OF (OR HAS BEEN DISPOSED OF).	3745-54-01	ACTION			
HW		3745-54-17	A,B,C	REQ FOR IGNITABLE,REACTIVE OR INCOMPATABLE HAZ WASTES	PRESENTS GENERAL PRECAUTIONS TO BE TAKEN TO PREVENT ACCIDENTAL IGNITION OR REACTION OF IGNITABLE, REACTIVE OR INCOMPATIBLE WASTES.	PERTAINS TO ANY SITE AT WHICH POTENTIALLY REACTIVE, IGNITABLE OR INCOMPATIBLE WASTES ARE PRESENT.		ACTION	LOCATION		
HW		3745-54-18	A,B,C	LOCATION STANDARDS FOR HAZARDOUS WASTE T/S/D FACILITIES	RESTRICTS THE SITING OF HAZARDOUS WASTE FACILITIES IN AREAS OF SEISMIC ACTIVITY OR FLOODPLAINS.	PERTAINS TO ANY SITE AT WHICH HAZARDOUS IS TO BE TREATED, STORED OR DISPOSED OF (OR HAS BEEN DISPOSED OF).		LOCATION			
HW		3745-54-31		DESIGN & OPERATION OF HAZARDOUS WASTE FACILITIES	HAZARDOUS WASTE FACILITIES MUST BE DESIGNED, CONSTRUCTED, MAINTAINED AND OPERATED TO MINIMIZE THE POSSIBILITY OF FIRE, EXPLOSION OR UNPLANNED RELEASE OF HAZARDOUS WASTE OR HAZARDOUS CONSTITUENTS TO THE AIR, SOIL OR SURFACE WATER WHICH COULD THREATEN HUMAN HEALTH OR THE ENVIRONMENT.	PERTAINS TO ANY SITE AT WHICH HAZARDOUS IS TO BE TREATED, STORED OR DISPOSED OF (OR HAS BEEN DISPOSED OF).	3745-54-01	ACTION			
HW		3745-54-32	A,B,C,D	REQUIRED EQUIPMENT FOR HAZARDOUS WASTE FACILITIES	ALL HAZARDOUS WASTE FACILITIES MUST BE EQUIPPED WITH EMERGENCY EQUIPMENT, SUCH AS AN ALARM SYSTEM, FIRE CONTROL EQUIPMENT AND A TELEPHONE OR RADIO	PERTAINS TO ANY SITE AT WHICH HAZARDOUS IS TO BE TREATED, STORED OR DISPOSED OF (OR HAS BEEN DISPOSED OF).	3745-54-01	ACTION			
HW		3745-54-33		TESTING & MAINTENANCE OF EQUIPMENT, HAZ WASTE FACILTIES	ALL HAZARDOUS WASTE FACILITIES MUST TEST AND MAINTAIN EMERGENCY EQUIPMENT TO ASSURE PROPER OPERATION.	PERTAINS TO ANY SITE AT WHICH HAZARDOUS WASTE IS TO BE TREATED, STORED OR DISPOSED OF (OR HAS BEEN DISPOSED OF).		ACTION			
HW		3745-54-34		ACCESS TO COMMUNICATIONS OR ALARM SYSTEM, HAZ WASTE FAC	WHENEVER HAZARDOUS WASTE IS BEING HANDLED, ALL PERSONNEL INVOLVED SHALL HAVE IMMEDIATE ACCESS TO AN INTERNAL ALARM OR EMERGENCY COMMUNICATION DEVICE	PERTAINS TO ANY SITE AT WHICH HAZARDOUS WASTE IS TO BE TREATED, STORED OR DISPOSED OF (OR HAS BEEN DISPOSED OF).	3745-54-01	ACTION			

CATEGORY	ORC	OAC	PERTINENT PARAGRAPH	TITLE OR SUBJECT OF REGULATION	DESCRIPTION OF REGULATION	APPLICATION OF REGULATION	REF	ARAR TYPE 1	ARAR TYPE 2	FEDERAL REGULATION	LAST REVISION
HW		3745-54-35		REQUIRED AISLE SPACE AT HAZ WASTE FACILITIES	ADEQUATE AISLE SPACE SHALL BE MAINTAINED TO ALLOW UNOBSTRUCTED MOVEMENT OF PERSONNEL, FIRE EQUIPMENT, SPILL CONTROL EQUIPMENT AND DECONTAMINATION EQUIPMENT INTO ANY AREA OF THE FACILITY OPERATION IN THE EVENT OF AN EMERGENCY.	PERTAINS TO ANY SITE AT WHICH HAZARDOUS WASTE IS TO BE TREATED, STORED OR DISPOSED OF (OR HAS BEEN DISPOSED OF). CONSIDER FOR SITES WHERE WASTES WILL BE STORED IN CONTAINERS.	3745-54-01	ACTION			
HW		3745-54-37	A,B	ARRANGEMENTS/ AGREEMENTS WITH LOCAL AUTHORITIES	ARRANGEMENTS OR AGREEMENTS WITH LOCAL AUTHORITIES, SUCH AS POLICE, FIRE DEPARTMENT AND EMERGENCY RESPONSE TEAMS MUST BE MADE IF LOCAL AUTHORITIES WILL NOT COOPERATE, DOCUMENTATION OF THAT NON-COOPERATION SHOULD BE PROVIDED	PERTAINS TO ANY SITE AT WHICH HAZARDOUS WASTE IS TO BE TREATED, STORED OR DISPOSED OF (OR HAS BEEN DISPOSED OF).		ACTION			
HW		3745-54-52	A-F	CONTENT OF CONTINGENCY PLAN; HAZ WASTE FACILITIES	HAZARDOUS WASTE FACILITIES MUST HAVE A CONTINGENCY PLAN THAT ADDRESSES ANY UNPLANNED RELEASE OF HAZARDOUS WASTES OR HAZARDOUS CONSTIUENTS INTO THE AIR, SOIL OR SURFACE WATER. THIS RULE ESTABLISHES THE MINIMUM REQUIRED INFORMATION OF SUCH A PLAN.	PERTAINS TO ANY SITE AT WHICH HAZARDOUS WASTE IS TO BE TREATED, STORED OR DISPOSED OF (OR HAS BEEN DISPOSED OF).	3745-54-50, 3745-54-37	ACTION		40CFR112 / 1510	3/30/93
HW		3745-54-53	A,B	COPIES OF CONTINGENCY PLAN; HAZARDOUS WASTE FACILITIES	COPIES OF THE CONTINGENCY PLAN REQUIRED BY 3745-54-50 MUST BE MAINTAINED AT THE FACILITY AND SUBMITTED TO ALL LOCAL POLICE DEPARTMENTS, FIRE DEPARTMENTS, HOSPITALS LOCAL EMERGENCY RESPONSE TEAMS AND THE OHIO EPA.	PERTAINS TO ANY SITE AT WHICH HAZARDOUS WASTE IS TO BE TREATED, STORED OR DISPOSED OF (OR HAS BEEN DISPOSED OF)	3745-54-01, 3745-54-52	ACTION			3/30/93
HW		3745-54-54	A	AMENDMENT OF CONTINGENCY PLAN; HAZ WASTE FACILITIES	THE CONTINGENCY PLAN MUST BE AMENDED IF IT FAILS IN AN EMERGENCY, THE FACILITY CHANGES (IN ITS DESIGN, CONSTRUCTION, MAINTENANCE OR OPERATION), THE LIST OF EMERGENCY COORDINATORS CHANGE OR THE LIST OF EMERGENCY EQUIPMENT.	PERTAINS TO ANY SITE AT WHICH HAZARDOUS WASTE IS TO BE TREATED, STORED OR DISPOSED OF (OR HAS BEEN DISPOSED OF).	3745-54-52, 3745-54-53	ACTION			
HW		3745-54-55		EMERGENCY COORDINATOR; HAZARDOUS WASTE FACILITIES	AT ALL TIMES THERE SHOULD BE AT LEAST ONE EMPLOYEE EITHER ON THE PREMISES OR ON CALL TO COORDINATE ALL EMERGENCY REPSONSE MEASURES.	PERTAINS TO ANY SITE AT WHICH HAZARDOUS WASTE IS TO BE TREATED, STORED OR DISPOSED OF (OR HAS BEEN DISPOSED OF).		ACTION			
HW		3745-54-56	A-I	EMERGENCY PROCEDURES; HAZARDOUS WASTE FACILITIES	SPECIFIES THE PROCEDURES TO BE FOLLOWED IN THE EVENT OF AN EMERGENCY.	PERTAINS TO ANY SITE AT WHICH HAZARDOUS WASTE IS TO BE TREATED, STORED OR DISPOSED OF (OR HAS BEEN DISPOSED OF).	3745-54-01, 3745-54-55	ACTION			
HW		3745-54-90		GROUND WATER PROTECTION; APPLICABILITY	ESTABLISHES CIRCUMSTANCES UNDER WHICH AN OPERATOR OF A HAZARDOUS WASTE FACILITY MUST IMPLEMENT A GROUND WATER PROTECTION PROGRAM OR A CORRECTIVE ACTION PROGRAM	PERTAINS TO ALL SITES WITH LAND-BASED HAZARDOUS WASTE UNITS (SURFACE IMPOUNDMENTS, WASTE PILES, LAND TREATMENT UNITS, LANDFILLS). THIS INCLUDES EXISTING LAND-BASED AREAS OF CONTAMINATION		LOCATION	ACTION		
HW		3745-54-91	A	REQ GROUND WATER PROGRAMS FOR HAZ WASTE FACILITIES	PRESENTS THE GROUND WATER MONITORING AND RESPONSE PROGRAMS REQUIRED FOR HAZARDOUS WASTE LAND-BASED UNITS	PERTAINS TO ALL SITES WITH LAND-BASED HAZARDOUS WASTE UNITS (SURFACE IMPOUNDMENTS, WASTE PILES, LAND TREATMENT UNITS, LANDFILLS). THIS INCLUDES EXISTING LAND-BASED AREAS OF CONTAMINATION.	3745-54-90	ACTION			

CATEGORY	ORC	OAC	PERTINENT PARAGRAPH	TITLE OR SUBJECT OF REGULATION	DESCRIPTION OF REGULATION	APPLICATION OF REGULATION	REF	ARAR TYPE 1	ARAR TYPE 2	FEDERAL REGULATION	LAST REVISION
HW		3745-54-92		GROUND WATER PROTECTION STANDARD; HAZ WASTE FACILITIES	COMPLIANCE MUST BE ATTAINED WITH THE CONDITIONS SPECIFIED IN THE PERMIT TO ENSURE THAT HAZARDOUS CONSTIUENTS (SEE 3745-54-93) DO NOT EXCEED THE PROMULGATED LIMITS (SEE 3745-54-94).	PERTAINS TO ALL SITES WITH LAND-BASED HAZARDOUS WASTE UNITS (SURFACE IMPOUNDMENTS, WASTE PILES, LAND TREATMENT UNITS, LANDFILLS). THIS INCLUDES EXISTING LAND-BASED AREAS OF CONTAMINATION.	3745-54-90	ACTION	CHEMICAL		
HW		3745-54-93	A,B	HAZARDOUS CONSTITUENTS IN GROUND WATER; HAZ WASTE FAC	REQUIRES THAT PERMIT SPECIFY HAZARDOUS CONSITIUENTS TO WHICH THE GROUND WATER PROTECTION STANDARD OF 3745-54-92 APPLIES. HAZARDOUS CONSTITUENTS ARE CONSTITUENTS IDENTIFIED IN THE APPENDIX OF THIS RULE THAT HAVE BEEN DETECTED IN GROUND WATER IN THE UPPERMOST AQUIFER UNDERLYING THE UNIT(S) AND ARE REASONABLY EXPECTED TO BE IN OR DERIVED FROM WASTE CONTAINED IN THE UNIT(S).	PERTAINS TO ALL SITES WITH LAND-BASED HAZARDOUS WASTE UNITS (SURFACE IMPOUNDMENTS, WASTE PILES, LAND TREATMENT UNITS, LANDFILLS). THIS INCLUDES EXISTING LAND-BASED AREAS OF CONTAMINATION.		CHEMICAL			
HW		3745-54-94	A,B	CONCENTRATION LIMITS FOR GROUND WATER; HAZ WASTE FAC	PRESENTS THE METHODOLOGY FOR DETERMINING CONCENTRATION LIMITS AND ALTERNATIVE CONCENTRATION LIMITS.	PERTAINS TO ALL SITES WITH LAND-BASED HAZARDOUS WASTE UNITS (SURFACE IMPOUNDMENTS, WASTE PILES, LAND TREATMENT UNITS, LANDFILLS). THIS INCLUDES EXISTING LAND-BASED AREAS OF CONTAMINATION.		CHEMICAL			
HW		3745-54-95	A,B	POINT OF COMPLIANCE FOR GROUND WATER; HAZ WASTE FACIL	ESTABLISHES POINT OF COMPILANCE AT VERTICAL SURFACE LOCATED AT THE HYDRAULICALLY DOWNGRADIENT LIMIT OF THE WASTE MANAGEMENT AREA THAT EXTENDS DOWN INTO THE UPPERMOST AQUIFER UNDERLYING THE UNIT(S).	PERTAINS TO ALL SITES WITH LAND-BASED HAZARDOUS WASTE UNITS (SURFACE IMPOUNDMENTS, WASTE PILES, LAND TREATMENT UNITS, LANDFILLS). THIS INCLUDES EXISTING LAND-BASED AREAS OF CONTAMINATION.		ACTION	CHEMICAL		
HW		3745-54-96	A,B,C	COMPLIANCE PERIOD FOR GROUND WATER; HAZ WASTE FACIL	A COMPLIANCE PERIOD DURING WHICH THE GROUND WATER PROTECTION STANDARDS APPLY WILL BE SPECIFIED IN THE PERMIT. RULE REQUIRES THAT THE COMPLIANCE PERIOD FOR A FACILITY UNDERGOING A CORRECTIVE ACTION PROGRAM WILL EXTEND UNTIL IT CAN BE DEMONSTRATED THAT THE GROUND WATER PROTECTION STANDARD OF OAC 3745-54-92 HAS NOT BEEN EXCEEDED FOR A PERIOD OF THREE CONSECUTIVE YEARS.	PERTAINS TO ALL SITES WITH LAND-BASED HAZARDOUS WASTE UNITS (SURFACE IMPOUNDMENTS, WASTE PILES, LAND TREATMENT UNITS, LANDFILLS). THIS INCLUDES EXISTING LAND-BASED AREAS OF CONTAMINATION.		ACTION	CHEMICAL		3/30/93
HW		3745-54-97	A-H	GEN GROUND WATER MONITORING REQUIREMENTS; HAZ WASTE FAC	PRESENTS GENERAL GROUND WATER MONITORING PROGRAM REQUIREMENTS. INCLUDES NUMBER, LOCATION AND DEPTH OF WELLS, CASING REQUIREMENTS, SAMPLING AND ANALYSIS PROCEDURES, ETC.	PERTAINS TO ALL SITES WITH LAND-BASED HAZARDOUS WASTE UNITS (SURFACE IMPOUNDMENTS, WASTE PILES, LAND TREATMENT UNITS, LANDFILLS). THIS INCLUDES EXISTING LAND-BASED AREAS OF CONTAMINATION.		ACTION	CHEMICAL		
HW		3745-54-98	A-I	GROUND WATER DETECTION MONITORING PROG; HAZ WASTE FAC	PRESENTS REQUIREMENTS OF GROUND WATER DETECTION PROGRAM.	PERTAINS TO ALL SITES WITH LAND-BASED HAZARDOUS WASTE UNITS (SURFACE IMPOUNDMENTS, WASTE PILES, LAND TREATMENT UNITS, LANDFILLS) AT WHICH HAZARDOUS CONSTITUENTS HAVE NOT BEEN DETECTED IN THE GROUND WATER. THIS INCLUDES EXISTING LAND-BASED AREAS OF CONTAMINATION.	3745-54-90, 3745-54-95	ACTION	CHEMICAL		
HW		3745-54-99	A-J	GROUND WATER COMPLIANCE MONITORING PROG; HAZ WASTE FAC	PRESENTS REQUIREMENTS OF GROUND WATER COMPLIANCE MONITORING PROGRAM	PERTAINS TO ALL SITES WITH LAND-BASED HAZARDOUS WASTE UNITS (SURFACE IMPOUNDMENTS, WASTE PILES, LAND TREATMENT UNITS, LANDFILLS) AT WHICH HAZARDOUS CONSTITUENTS HAVE BEEN DETECTED. THIS INCLUDES EXISTING LAND BASED AREAS OF CONTAMINATION.		ACTION	CHEMICAL		

CATEGORY	ORC	OAC	PERTINENT PARAGRAPH	TITLE OR SUBJECT OF REGULATION	DESCRIPTION OF REGULATION	APPLICATION OF REGULATION	REF	ARAR TYPE 1	ARAR TYPE 2	FEDERAL REGULATION	LAST REVISION
HW		3745-55-01	A-F	GROUND WATER CORRECTIVE ACTION PROGRAM; HAZ WASTE FAC	PRESENTS THE REQUIREMENTS OF A GROUND WATER CORRECTIVE ACTION PROGRAM THAT PREVENTS HAZARDOUS CONSTITUENTS FROM EXCEEDING THEIR RESPECTIVE CONCENTRATION LIMITS AT THE COMPLIANCE POINT BY EITHER REMOVAL OR TREATMENT OF THESE HAZARDOUS CONSTITUENTS.	PERTAINS TO ALL SITES WITH LAND-BASED HAZARDOUS WASTE UNITS (SURFACE IMPOUNDMENTS, WASTE PILES, LAND TREATMENT UNITS, LANDFILLS) AT WHICH HAZARDOUS CONSTITUENTS HAVE BEEN DETECTED. THIS INCLUDES EXISTING LAND BASED AREAS OF CONTAMINATION.	3745-54-90 THROUGH 3745-54-99	ACTION	CHEMICAL		
HW		3745-55-011	A,C	CORRECTIVE ACTION FOR WASTE MANAGEMENT UNITS	REQUIRES AN APPLICANT FOR A HAZARDOUS WASTE PERMIT TO INSTITUTE CORRECTIVE ACTION FOR ALL RELEASES OF HAZARDOUS WASTE OR CONSTITUENTS FROM ANY WASTE MANAGEMENT UNIT, REGARDLESS OF THE TIME AT WHICH WASTE WAS PLACED IN SUCH UNIT	PERTAINS TO ALL SITES WITH LAND-BASED HAZARDOUS WASTE UNITS (SURFACE IMPOUNDMENTS, WASTE PILES, LAND TREATMENT UNITS, LANDFILLS) AT WHICH HAZARDOUS CONSTITUENTS HAVE BEEN DETECTED. THIS INCLUDES EXISTING LAND BASED AREAS OF CONTAMINATION.	3745-55-01	ACTION			3/30/93
HW		3745-55-11	A,B,C	GENERAL CLOSURE PERFORMANCE STANDARD; HAZ WASTE FACIL	REQUIRES THAT ALL HAZARDOUS WASTE FACILITIES BE CLOSED IN A MANNER THAT MINIMIZES THE NEED FOR FURTHER MAINTENANCE, CONTROLS, MINIMIZES, ELIMINATES OR PREVENTS POST-CLOSURE ESCAPE OF HAZARDOUS WASTE, HAZARDOUS CONSTITUENTS, LEACHATE, CONTAMINATED RUN-OFF OR HAZARDOUS WASTE DECOMPOSITION PRODUCTS TO THE GROUND OR SURFACE WATER OR THE ATMOSPHERE.	PERTAINS TO ANY SITE AT WHICH HAZARDOUS WASTE IS TO BE TREATED, STORED OR DISPOSED OF (OR HAS BEEN TREATED, STORED OR DISPOSED OF).		ACTION			
HW		3745-55-12	B	CONTENT OF CLOSURE PLAN; HAZ WASTE FACILITIES	SPECIFIES THE MINIMUM INFORMATION REQUIRED IN A CLOSURE PLAN FOR OHIO EPA TO DETERMINE THE ADEQUACY OF THE PLAN.	SUBSTANTIVE REQUIREMENTS PERTAIN TO ANY SITE AT WHICH HAZARDOUS WASTE IS TO BE TREATED, STORED OR DISPOSED OF (OR HAS BEEN TREATED, STORED OR DISPOSED OF).	3745-55-10, 3745-55-11	ACTION			
HW		3745-55-14		DISPOSAL/ DECON OF EQUIPMENT, STRUCTURES & SOILS	REQUIRES THAT ALL CONTAMINATED EQUIPMENT, STRUCTURES AND SOILS BE PROPERLY DISPOSED OF OR DECONTAMINATED. REMOVAL OF HAZARDOUS WASTES OR CONSTITUENTS FROM A UNIT MAY CONSTITUTE GENERATION OF HAZARDOUS WASTES.	PERTAINS TO ANY SITE AT WHICH HAZARDOUS WASTE IS TO BE TREATED, STORED OR DISPOSED OF (OR HAS BEEN TREATED, STORED OR DISPOSED OF).	3745-55-10	ACTION			
HW		3745-55-17	B	POST-CLOSURE CARE AND USE OF PROPERTY	SPECIFIES THE POST-CLOSURE CARE REQUIREMENTS, INCLUDING MAINTENANCE, MONITORING AND POST-CLOSURE USE OF PROPERTY.	PERTAINS TO ALL SITES WITH LAND-BASED HAZARDOUS WASTE UNITS (LANDFILLS AND SURFACE IMPOUNDMENTS, WASTE PILES, LAND TREATMENT UNITS AND TANKS THAT MEET REQUIREMENTS OF LANDFILLS AFTER CLOSURE). THIS INCLUDES EXISTING LAND-BASED AREAS OF CONTAMINATION.		ACTION			
HW		3745-55-18	B	POST-CLOSURE PLAN	PRESENTS THE INFORMATION NECESSARY FOR OHIO EPA TO DETERMINE THE ADEQUACY OF A POST-CLOSURE PLAN.	PERTAINS TO ALL SITES WITH LAND-BASED HAZARDOUS WASTE UNITS (LANDFILLS AND SURFACE IMPOUNDMENTS, WASTE PILES, LAND TREATMENT UNITS AND TANKS THAT MEET REQUIREMENTS OF LANDFILLS AFTER CLOSURE). THIS INCLUDES EXISTING LAND-BASED AREAS OF CONTAMINATION.		ACTION			

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CATEGORY	ORC	OAC	PERTINENT PARAGRAPH	TITLE OR SUBJECT OF REGULATION	DESCRIPTION OF REGULATION	APPLICATION OF REGULATION	REF	ARAR TYPE 1	ARAR TYPE 2	FEDERAL REGULATION	LAST REVISION
HW		3745-55-19	B	NOTICE TO LOCAL LAND AUTHORITY	REQUIRES THAT A RECORD OF THE TYPE, LOCATION AND QUANTITY OF HAZARDOUS WASTES DISPOSED OF IN EACH UNIT BE SUBMITTED TO THE LOCAL LAND AUTHORITY AND THE DIRECTOR OF THE OHIO EPA. ALSO REQUIRES THAT A NOTATION TO THE DEED TO THE FACILITY	PERTAINS TO ALL SITES WITH LAND-BASED HAZARDOUS WASTE UNITS (LANDFILLS AND SURFACE IMPOUNDMENTS, WASTE PILES, LAND TREATMENT UNITS AND TANKS THAT MEET REQUIREMENTS OF LANDFILLS AFTER CLOSURE). THIS INCLUDES EXISTING LAND-BASED AREAS		ACTION			
					PROPERTY BE MADE INDICATING THAT THE LAND WAS USED TO MANAGE HAZARDOUS WASTES AND THAT CERTAIN USE RESTRICTIONS MAY APPLY TO THE PROPERTY.	OF CONTAMINATION.					
HW		3745-55-71		CONDITION OF CONTAINERS	CONTAINERS HOLDING HAZARDOUS WASTE MUST BE MAINTAINED IN GOOD CONDITION (NO RUST OR STRUCTURAL DEFECTS)	PERTAINS TO ANY SITE AT WHICH HAZARDOUS WASTE WILL BE STORED IN CONTAINERS.	3745-55-70	ACTION			
HW		3745-55-72		COMPATIBILITY OF WASTE WITH CONTAINERS	HAZARDOUS WASTES PLACED IN CONTAINER MUST NOT REACT WITH THE CONTAINER MATERIAL OR LINER	PERTAINS TO ANY SITE AT WHICH HAZARDOUS WASTE WILL BE STORED IN CONTAINERS.	3745-55-70	ACTION			
HW		3745-55-73		MANAGEMENT OF CONTAINERS	CONTAINERS HOLDING HAZARDOUS WASTE MUST BE CLOSED (EXCEPT TO ADD OR REMOVE WASTE) AND MUST NOT BE HANDLED IN A MANNER THAT MAY RUPTURE THE CONTAINER OR CAUSE IT TO LEAK.	PERTAINS TO ANY SITE AT WHICH HAZARDOUS WASTE WILL BE STORED IN CONTAINERS.	3745-55-70	ACTION			
HW		3745-55-74		CONTAINER INSPECTIONS	REQUIRES AT LEAST WEEKLY INSPECTIONS OF CONTAINER STORAGE AREAS.	PERTAINS TO ANY SITE AT WHICH HAZARDOUS WASTE WILL BE STORED IN CONTAINERS.	3745-55-70	ACTION			
HW		3745-55-75	A,B,C,D	CONTAINER STORAGE AREA CONTAINMENT SYSTEM	REQUIRES THAT CONTAINER STORAGE AREAS HAVE A CONTAINMENT SYSTEM AND SPECIFIES THE MINIMUM REQUIREMENTS OF SUCH A SYSTEM.	PERTAINS TO ANY SITE AT WHICH HAZARDOUS WASTE WILL BE STORED IN CONTAINERS.	3745-55-70	ACTION			
HW		3745-55-76		CONTAINER REQUIREMENTS FOR IGNITABLE/REACTIVE WASTES	PRESENTS GENERAL PRECAUTIONS TO BE TAKEN TO PREVENT ACCIDENTAL IGNITION OR REACTION OF IGNITABLE OR REACTIVE WASTES THAT WILL BE STORED IN CONTAINERS.	PERTAINS TO ANY SITE AT WHICH POTENTIALLY REACTIVE OR IGNITABLE WASTES THAT ARE STORED, OR ARE TO BE STORED, IN CONTAINERS.	3745-55-70	ACTION	CHEMICAL		
HW		3745-55-77	A,B,C	CONTAINER REQUIREMENTS FOR INCOMPATIBLE WASTES	PRESENTS GENERAL PRECAUTIONS TO BE TAKEN WHEN DEALING WITH INCOMPATIBLE WASTES.	PERTAINS TO ANY SITE AT WHICH POTENTIALLY INCOMPATIBLE WASTES ARE PRESENT	3745-55-70	ACTION	CHEMICAL		
HW		3745-55-78		CONTAINER CLOSURE REQUIREMENTS	SPECIFIES CLOSURE REQUIREMENTS FOR CONTAINERS AND CONTAINMENT SYSTEM.	PERTAINS TO ANY SITE AT WHICH HAZARDOUS WASTE WILL BE STORED IN CONTAINERS.	3745-55-70	ACTION			
HW		3745-55-91	A,B,D	ASSESSMENT OF EXISTING TANK SYSTEMS INTEGRITY	REQUIRES THAT EACH EXISTING TANK USED TO STORE OR TREAT HAZARDOUS WASTE THAT DOES NOT HAVE SECONDARY CONTAINMENT BE TESTED TO ASSURE TANK INTEGRITY.	PERTAINS TO ANY SITE WHICH HAS EXISTING HAZARDOUS WASTE TREATMENT OR STORAGE TANKS THAT LACK SECONDARY CONTAINMENT.	3745-55-90	ACTION			
HW		3745-55-92	A-G	DESIGN & INSTALLATION OF NEW TANK SYSTEMS OR COMPONENTS	REQUIRES A SECONDARY CONTAINMENT SYSTEM FOR TANKS AND ASSESSMENT TO DETERMINE TANK INTEGRITY.	PERTAINS TO ANY SITE AT WHICH HAZARDOUS WASTE WILL BE EITHER STORED OR TREATED IN TANKS.	3745-55-90	ACTION			
HW		3745-55-93	A-G,I	CONTAINMENT AND DETECTION OF RELEASES FOR TANK SYSTEMS	REQUIRES SECONDARY CONTAINMENT AND LEAK DETECTION SYSTEMS FOR TANKS.	PERTAINS TO ANY SITE AT WHICH HAZARDOUS WASTE WILL BE EITHER STORED OR TREATED IN TANKS.	3745-55-90	ACTION			
HW		3745-55-94	A,B,C	GENERAL OPERATING REQUIREMENTS FOR TANK SYSTEMS	SPECIFIES GENERAL OPERATING REQUIREMENTS FOR TANK SYSTEMS	PERTAINS TO ANY SITE AT WHICH HAZARDOUS WASTE WILL BE EITHER STORED OR TREATED IN TANKS	3745-55-90	ACTION			
HW		3745-55-95	A-D	INSPECTIONS OF TANK SYSTEMS	REQUIRES INSPECTIONS AT LEAST ONCE EACH OPERATING DAY.	PERTAINS TO ANY SITE AT WHICH HAZARDOUS WASTE WILL BE EITHER STORED OR TREATED IN TANKS.	3745-55-90	ACTION			

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HW		3745-55-96	A,B,C,E	RESPONSE TO LEAKS OR SPILLS OF TANK SYSTEMS	REQUIRES THAT UNFIT TANKS BE REMOVED FROM USE AND FURTHER RELEASES BE PREVENTED.	PERTAINS TO ANY SITE AT WHICH HAZARDOUS WASTE WILL BE EITHER STORED OR TREATED IN TANKS.	3745-55-90	ACTION			
HW		3745-55-97	A,B	CLOSURE AND POST-CLOSURE CARE FOR TANK SYSTEMS	SPECIFIES CLOSURE AND POST-CLOSURE REQUIREMENTS FOR TANK SYSTEMS.	PERTAINS TO ANY SITE AT WHICH HAZARDOUS WASTE WILL BE EITHER STORED OR TREATED IN TANKS.	3745-55-90	ACTION			
HW		3745-55-98		TANK REQUIREMENTS FOR IGNITABLE/REACTIVE WASTES	PRESENTS GENERAL PRECAUTIONS TO BE TAKEN TO PREVENT ACCIDENTAL IGNITION OR REACTION OF IGNITABLE OR REACTIVE WASTES THAT ARE TREATED OR STORED IN TANKS.	PERTAINS TO ANY SITE AT WHICH POTENTIALLY REACTIVE OR IGNITABLE WASTES ARE STORED OR TREATED (OR TO BE STORED OR TREATED) IN EXISTING TANKS.	3745-55-90	ACTION			
HW		3745-55-99	A,B	TANK REQUIREMENTS FOR INCOMPATIBLE WASTES	PRESENTS GENERAL PRECAUTIONS TO BE TAKEN WHEN DEALING WITH POTENTAILLY INCOMPATIBLE WASTES THAT ARE STORED OR TREATED IN TANKS.	PERTAINS TO ANY SITE AT WHICH POTENTIALLY INCOMPATIBLE WASTES ARE STORED OR TREATED (OR TO BE STORED OR TREATED) IN TANKS.	3745-55-90	ACTION			
HW		3745-56-21	A-G	DESIGN & OPERATING REQUIREMENTS ; SURFACE IMPOUNDMENTS	PRESENTS DESIGN AND OPERATING CRITERIA FOR SURFACE IMPOUNDMENTS	PERTAINS TO ANY SITE AT WHICH HAZARDOUS WASTE WILL BE TREATED OR STORED IN SURFACE IMPOUNDMENTS (LAGOONS). PERTAINS TO SITES WHICH HAVE SURACE IMPOUNDMENTS THAT WILL NOT BE (OR HAVE NOT BEEN) CLEAN CLOSED.	3745-56-20	ACTION			
HW		3745-56-26	A,B,C	MONITORING & INSPECTION OF SURFACE IMPOUNDMENTS	REQUIRES INSPECTION OF LINERS DURING CONSTRUCTION. ALSO REQUIRES WEEKLY AND AFTER STORM INSPECTIONS.	PERTAINS TO ANY SITE AT WHICH HAZARDOUS WASTE WILL BE TREATED OR STORED IN SURFACE IMPOUNDMENTS (LAGOONS). PERTAINS TO SITES WHICH HAVE SURACE IMPOUNDMENTS THAT WILL NOT BE (OR HAVE NOT BEEN) CLEAN CLOSED.	3745-56-20	ACTION			
HW		3745-56-27	A-E	EMERGENCY REPAIRS & CONTINGENCY PLANS ; SURFACE IMPOUND	SPECIFIES WHEN AND HOW SURFACE IMPOUNDMENTS SHOULD BE REMOVED FROM SERVICE FOR REPAIRS.	PERTAINS TO ANY SITE AT WHICH HAZARDOUS WASTE WILL BE TREATED OR STORED IN SURFACE IMPOUNDMENTS (LAGOONS). PERTAINS TO SITES WHICH HAVE SURACE IMPOUNDMENTS THAT WILL NOT BE (OR HAVE NOT BEEN) CLEAN CLOSED.	3745-56-20	ACTION			
HW		3745-56-28	A,B,C	CLOSURE & POST-CLOSURE OF SURFACE IMPOUNDMENTS	PROVIDES CLOSURE AND POST-CLOSURE REQUIREMENTS FOR SURFACE IMPOUNDMENTS.	PERTAINS TO ANY SITE AT WHICH HAZARDOUS WASTE WILL BE TREATED OR STORED IN SURFACE IMPOUNDMENTS (LAGOONS). PERTAINS TO SITES WHICH HAVE SURACE IMPOUNDMENTS THAT WILL NOT BE (OR HAVE NOT BEEN) CLEAN CLOSED.	3745-56-20	ACTION			
HW		3745-56-29	A,B	SURFACE IMP. REQUIREMENTS FOR IGNITABLE/REACTIVE WASTES	PRESENTS GENERAL PRECAUTIONS TO BE TAKEN WHEN DEALING WITH POTENTAILLY IGNITABLE OR REACTIVEE WASTES THAT ARE STORED OR TREATED IN SURFACE IMPOUNDMENTS.	PERTAINS TO ANY SITE AT WHICH POTENTIALLY IGNITABLE OR REACTIVE HAZARDOUS WASTE WILL BE TREATED OR STORED IN SURFACE IMPOUNDMENTS (LAGOONS). PERTAINS TO SITES WHICH HAVE SURACE IMPOUNDMENTS THAT WILL NOT BE (OR HAVE NOT BEEN) CLEAN CLOSED.	3745-56-20	ACTION	CHEMICAL		
HW		3745-56-30		SURFACE IMPOUND REQUIREMENTS FOR INCOMPATIBLE WASTES	PRESENTS GENERAL PRECAUTIONS TO BE TAKEN WHEN DEALING WITH POTENTAILLY INCOMPATIBLE WASTES THAT ARE STORED OR TREATED IN SURFACE IMPOUNDMENTS	PERTAINS TO ANY SITE AT WHICH POTENTIALLY INCOMPATIBLE HAZARDOUS WASTE WILL BE TREATED OR STORED IN SURFACE IMPOUNDMENTS (LAGOONS). PERTAINS TO SITES WHICH HAVE SURACE IMPOUNDMENTS THAT WILL NOT BE (OR HAVE NOT BEEN) CLEAN CLOSED.	3745-56-20	ACTION	CHEMICAL		

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CATEGORY	ORC	OAC	PERTINENT PARAGRAPH	TITLE OR SUBJECT OF REGULATION	DESCRIPTION OF REGULATION	APPLICATION OF REGULATION	REF	ARAR TYPE 1	ARAR TYPE 2	FEDERAL REGULATION	LAST REVISION
HW		3745-56-31	A	CONSTRUCTION INSPECTIONS OF SURFACE IMPOUNDMENTS	ALLOWS OHIO EPA OPPORTUNITY TO INSPECT SURFACE IMPOUNDMENTS DURING CONSTRUCTION AND INSTALLATION.	PERTAINS TO ANY SITE AT WHICH HAZARDOUS WASTE WILL BE TREATED OR STORED IN SURFACE IMPOUNDMENTS (LAGOONS). PERTAINS TO SITES WHICH HAVE SURACE IMPOUNDMENTS THAT WILL NOT BE (OR HAVE NOT BEEN) CLEAN CLOSED.		ACTION			
HW		3745-56-33	A,B	SPECIAL REQUIREMENTS FOR "F" WASTES IN SURFACE IMPOUND	PROHIBITS THE PLACEMENT OF HAZARDOUS WASTES F020, F021, F022, F023 F026 AND F027 IN SURFACE IMPOUNOMENTS	PERTAINS TO ANY SITE AT WHICH HAZARDOUS F-WASTE ARE TREATED OR STORED IN SURFACE IMPOUNDMENTS (LAGOONS). PERTAINS TO SITES WHICH HAVE SURACE IMPOUNDMENTS THAT WILL NOT BE (OR HAVE NOT BEEN) CLEAN CLOSED.	3745-56-20	ACTION	CHEMICAL		
HW		3745-56-51	A-F	DESIGN & OPERATING REQUIREMENTS FOR WASTE PILES	SPECIFIES THE DESIGN AND OPERATION REQUIREMENTS FOR WASTE PILES. INCLUDES LINER SYSTEM, LEACHATE COLLECTION AND REMOVAL SYSTEM, WIND DISPERSAL PREVENTION AND RUN-ON/RUN OFF CONTROL.	PERTAINS TO ANY SITE AT WHICH HAZARDOUS WASTE WILL BE EITHER STORED OR TREATED IN WASTE PILES.	3745-56-50	ACTION			
HW		3745-56-54	A,B	MONITORING & INSPECTION OF WASTE PILES	WASTE PILES MUST BE MONITORED DURING CONSTRUCTION OR INSTALLATION AND OPERATION.	PERTAINS TO ANY SITE AT WHICH HAZARDOUS WASTE WILL BE EITHER STORED OR TREATED IN WASTE PILES.	3745-56-50	ACTION			
HW		3745-56-56	A,B	WASTE PILE REQUIREMENTS FOR IGNITABLE/ REACTIVE WASTES	PRESENTS GENERAL PRECAUTIONS TO BE TAKEN WHEN DEALING WITH POTENTAILLY IGNITABLE OR REACTIVE HAZARDOUS WASTES THAT ARE STORED OR TREATED IN WASTE PILES	PERTAINS TO ANY SITE AT WHICH POTENTIALLY IGNITABLE OR REACTIVE HAZARDOUS WASTE WILL BE EITHER STORED OR TREATED IN WASTE PILES.	3745-56-50	ACTION	CHEMICAL		
HW		3745-56-57	A,B,C	WASTE PILE REQUIREMENTS FOR INCOMPATIBLE WASTES	PRESENTS GENERAL PRECAUTIONS TO BE TAKEN WHEN DEALING WITH POTENTAILLY INCOMPATIBLE WASTES THAT ARE STORED OR TREATED IN WASTE PILES.	PERTAINS TO ANY SITE AT WHICH POTENTIALLY INCOMPATIBLE HAZARDOUS WASTE WILL BE EITHER STORED OR TREATED IN WASTE PILES.	3745-56-50	ACTION	CHEMICAL		
HW		3745-56-58	A,B,C	CLOSURE & POST-CLOSURE CARE FOR WASTE PILES	SPECIFIES CLOSURE AND POST-CLOSURE CARE REQUIREMENTS FOR WASTE PILES.	PERTAINS TO ANY SITE AT WHICH HAZARDOUS WASTE WILL BE EITHER STORED OR TREATED IN WASTE PILES.	3745-56-50	ACTION			
HW		3745-56-59	A	CONSTRUCTION INSPECTIONS FOR WASTE PILES	ALLOWS OHIO EPA THE OPPORTUNITY TO INSPECT WASTE PILES DURING CONSTRUCTION	PERTAINS TO ANY SITE AT WHICH HAZARDOUS WASTE WILL BE EITHER STORED OR TREATED IN WASTE PILES.		ACTION			
HW		3745-56-60	A,B	SPECIAL REQUIREMENTS FOR "F" WASTES IN WASTE PILES	PROHIBITS THE PLACEMENT OF HAZARDOUS WASTES F020, F021, F022, F023, F026 AND F027 IN WASTE PILES	PERTAINS TO ANY SITE AT WHICH HAZARDOUS F-WASTES WILL BE EITHER STORED OR TREATED IN WASTE PILES	3745-56-50	ACTION	CHEMICAL		
HW		3745-56-71	A,C	LAND TREATMENT PROGRAM	A LAND TREATMENT PROGRAM MUST BE DESIGNED TO ENSURE THAT HAZARDOUS CONSTITUENTS PLACED IN OR ON THE TREATMENT ZONE ARE DEGRADED, TRANSFORMED OR IMMOBILIZED WITHIN THE TREATMENT ZONE.	PERTAINS TO ANY SITE AT WHICH HAZARDOUS WASTES WILL BE TREATED OR DISPOSED OF IN LAND TREATMENT UNITS.	3745-56-70	ACTION			
HW		3745-56-72	A,C	LAND TREATMENT DEMONSTRATION	PRIOR TO THE ACTUAL LAND TREATMENT PROGRAM, A DEMONSTRATION (FIELD OR LABORATORY TESTS) MUST BE CONDUCTED	PERTAINS TO ANY SITE AT WHICH HAZARDOUS WASTES WILL BE TREATED OR DISPOSED OF IN LAND TREATMENT UNITS.	3745-56-70	ACTION			
HW		3745-56-73	A-G	LAND TREATMENT DESIGN AND OPERATING REQUIREMENTS	A LAND TREATMENT UNIT MUST BE DESIGNED, CONSTRUCTED, OPERATED AND MAINTAINED TO MAXIMIZE DEGRADATION, TRANSFORMATION AND IMMOBILIZATION OF HAZARDOUS CONSTITUENTS IN THE TREATMENT ZONE	PERTAINS TO ANY SITE AT WHICH HAZARDOUS WASTES WILL BE TREATED OR DISPOSED OF IN LAND TREATMENT UNITS	3745-56-70	ACTION			
HW		3745-56-76	A-C,E	LAND TREATMENT FOOD-CHAIN CROPS	FOOD CHAIN CROPS MAY ONLY BE GROWN IN OR ON THE TREATMENT ZONE IF ALLOWED BY THE DIRECTOR. THE CRITERIA FOR THE DIRECTOR TO MAKE THIS DECISION ARE PROVIDED IN THIS RULE	PERTAINS TO ANY SITE AT WHICH HAZARDOUS WASTES WILL BE TREATED OR DISPOSED OF IN LAND TREATMENT UNITS	3745-56-70	ACTION			

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HW		3745-56-78	A-F	LAND TREATMENT UNSATURATED ZONE MONITORING	AN UNSATURATED ZONE MONITORING PROGRAM MUST BE ESTABLISHED FOR ALL LAND TREATMENT UNITS. THE REQUIREMENTS OF THIS PROGRAM ARE PRESENTED BY THIS RULE.	PERTAINS TO ANY SITE AT WHICH HAZARDOUS WASTES WILL BE TREATED OR DISPOSED OF IN LAND TREATMENT UNITS.	3745-56-70	ACTION	CHEMICAL		
HW		3745-56-80	A-E	LAND TREATMENT CLOSURE & POST-CLOSURE CARE	ESTABLISHES CLOSURE AND POST-CLOSURE REQUIREMENTS FOR LAND TREATMENT UNITS	PERTAINS TO ANY SITE AT WHICH HAZARDOUS WASTES WILL BE TREATED OR DISPOSED OF IN LAND TREATMENT UNITS	3745-56-70	ACTION			
HW		3745-56-81	A,B	LAND TREATMENT REQUIREMENTS; IGNITABLE/REACTIVE WASTES	PROHIBITS THE APPLICATION OF IGNITABLE OR REACTIVE WASTE TO THE TREATMENT ZONE, EXCEPT UNDER CERTAIN CIRCUMSTANCES.	PERTAINS TO ANY SITE AT WHICH POTENTIALLY IGNITABLE OR REACTIVE HAZARDOUS WASTES WILL BE TREATED OR DISPOSED OF IN LAND TREATMENT UNITS.	3745-56-70	ACTION	CHEMICAL		
HW		3745-56-82		LAND TREATMENT REQUIREMENTS FOR INCOMPATIBLE WASTES	PROHIBITS THE PLACEMENT OF INCOMPATIBLE WASTE IN OR ON THE TREATMENT ZONE.	PERTAINS TO ANY SITE AT WHICH POTENTIALLY INCOMPATIBLE HAZARDOUS WASTES WILL BE TREATED OR DISPOSED OF IN LAND TREATMENT UNITS	3745-56-70	ACTION	CHEMICAL		
HW		3745-56-83	A,B	SPECIAL REQUIREMENTS FOR "F" WASTES IN LAND TREATMENT	PROHIBITS THE PLACEMENT OF HAZARDOUS WASTES F020, F021, F022, F023, F026 AND F027 IN LAND TREATMENT UNITS.	PERTAINS TO ANY SITE AT WHICH HAZARDOUS F-WASTES ARE TO BE TREATED OR DISPOSED OF IN LAND TREATMENT UNITS	3745-56-70	ACTION	CHEMICAL		
HW		3745-57-01	A-D	ENVIRONMENTAL PERFORMANCE STANDARDS; LAND-BASED UNITS	SPECIFIES LOCATION, DESIGN, CONSTRUCTION, OPERATION, MAINTENANCE AND CLOSURE REQUIREMENTS FOR LANDFILLS, WASTE PILES, SURFACE IMPOUNDMENTS AND UNDERGROUND INJECTION WELLS.	PERTAINS TO ALL SITES THAT EITHER HAVE OR WILL HAVE AT LEAST ONE OF THE FOLLOWING UNITS ON-SITE: LANDFILLS, WASTE PILES, SURFACE IMPOUNDMENTS, LAND TREATMENT FACILITIES AND UNDERGROUND INJECTION WELLS (THIS INCLUDES EXISTING LAND-BASED AREAS OF CONTAMINATION).		ACTION			
HW		3745-57-03	A-I	LANDFILL DESIGN AND OPERATING REQUIREMENTS	PRESENTS DESIGN AND OPERATING REQUIREMENTS FOR LANDFILLS. INCLUDES LINER, LEACHATE COLLECTION AND REMOVAL, RUN-ON/RUN-OFF CONTROL, ETC.	PERTAINS TO ALL SITES AT WHICH A HAZARDOUS WASTE LANDFILL WILL EITHER BE LOCATED OR AN EXISTING LANDFILL WILL BE EXPANDED. THIS RULE ALSO PERTAINS TO EXISTING LAND-BASED AREAS OF CONTAMINATION.	3745-57-02	ACTION			
HW		3745-57-05	A,B	MONITORING AND INSPECTIONS OF LANDFILLS	REQUIRES INSPECTION OF LANDFILLS DURING CONSTRUCTION OR INSTALLATION AND OPERATION.	PERTAINS TO ALL SITES AT WHICH A HAZARDOUS WASTE LANDFILL WILL EITHER BE LOCATED OR AN EXISTING LANDFILL WILL BE EXPANDED. THIS RULE PERTAINS TO EXISTING LAND-BASED AREAS OF CONTAMINATION.	3745-57-02	ACTION			
HW		3745-57-10	A,B	LANDFILL CLOSURE AND POST-CLOSURE CARE	SPECIFIES CLOSURE AND POST-CLOSURE REQUIREMENTS FOR HAZARDOUS WASTE LANDFILLS. INCLUDES FINAL COVER AND MAINTENANCE.	PERTAINS TO ALL SITES AT WHICH A HAZARDOUS WASTE LANDFILL WILL EITHER BE LOCATED OR AN EXISTING LANDFILL WILL BE EXPANDED. THIS RULE PERTAINS TO EXISTING LAND-BASED AREAS OF CONTAMINATION.	3745-57-02	ACTION			
HW		3745-57-12	A,B	LANDFILL REQUIREMENTS FOR IGNITABLE/REACTIVE WASTES	PROHIBITS THE DISPOSAL OF IGNITABLE OR REACTIVE WASTE IN A LANDFILL, UNLESS THE WASTE IS TREATED, RENDERED OR MIXED SO THAT THE RESULTANT MATERIAL NO LONGER MEETS THE DEFINITION OF IGNITABLE OR REACTIVE WASTE	PERTAINS TO ALL SITES AT WHICH POTENTIALLY IGNITABLE OR REACTIVE HAZARDOUS WASTE MAY BE LANDFILLED	3745-57-02	ACTION	CHEMICAL		
HW		3745-57-13		LANDFILL REQUIREMENTS FOR INCOMPATIBLE WASTES	PROHIBITS THE DISPOSAL OF INCOMPATIBLE WASTE IN THE SAME CELL OF A LANDFILL	PERTAINS TO ALL SITES AT WHICH POTENTIALLY INCOMPATIBLE HAZARDOUS WASTE MAY BE LANDFILLED	3745-57-02	ACTION	CHEMICAL		

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HW		3745-57-14	A-D	LANDFILL REQUIREMENTS FOR BULK & CONTAINERIZED LIQUIDS	THE PLACEMENT OF BULK OR NON-CONTAINERIZED LIQUID HAZARDOUS WASTE OR HAZARDOUS WASTES CONTAINING FREE LIQUIDS (WHETHER OR NOT ABSORBANTS HAVE BEEN ADDED) IN ANY LANDFILL IS PROHIBITED.	PERTAINS TO ALL SITES AT WHICH A LIQUID HAZARDOUS WASTE OR HAZARDOUS WASTE CONTAINING FREE LIQUIDS ARE CONSIDERED FOR LANDFILLING.	3745-57-02	ACTION			
HW		3745-57-15	A,B	LANDFILL REQUIREMENTS FOR CONTAINERS	UNLESS THEY ARE VERY SMALL CONTAINERS MUST EITHER BE AT LEAST 90% FULL WHEN PLACED IN THE LANDFILL OR CRUSHED/SHREDDED PRIOR TO PLACEMENT IN THE LANDFILL.	PERTAINS TO ALL SITES AT WHICH A HAZARDOUS WASTE LANDFILL WILL EITHER BE LOCATED OR AN EXISTING LANDFILL WILL BE EXPANDED AND CONTAINERS ARE TO BE DISPOSED OF IN	3745-57-02	ACTION			
HW		3745-57-16	A-E	DISPOSAL OF SMALL CONTAINERS OF HAZ WASTES IN OVERPACKS	LAB PACKS CONTAINING HAZARDOUS WASTE MAY BE PLACED IN A LANDFILL IF CERTAIN REQUIREMENTS ARE MET.	PERTAINS TO ALL SITES AT WHICH A HAZARDOUS WASTE LANDFILL WILL EITHER BE LOCATED OR AN EXISTING LANDFILL WILL BE EXPANDED AND LAB PACKS ARE TO BE PLACED IN THE	3745-57-02	ACTION			
HW		3745-57-17	A	LANDFILL CONSTRUCTION INSPECTIONS	ALLOWS OHIO EPA OPPORTUNITY TO INSPECT LANDFILL DURING CONSTRUCTION	PERTAINS TO ALL SITES AT WHICH A HAZARDOUS WASTE LANDFILL WILL EITHER BE LOCATED OR AN EXISTING LANDFILL WILL BE EXPANDED. THIS RULE PERTAINS TO EXISTING LAND-BASED AREAS OF CONTAMINATION.		ACTION			
HW		3745-57-18	A,B	SPECIAL REQUIREMENTS FOR "F" WASTES IN LANDFILLS	PROHIBITS THE PLACEMENT OF HAZARDOUS WASTES F020, F021, F022, F023, F026 AND F027 IN LANDFILLS.	PERTAINS TO ALL SITES AT WHICH A HAZARDOUS WASTE LANDFILL WILL EITHER BE LOCATED OR AN EXISTING LANDFILL WILL BE EXPANDED AND F-WASTES ARE BEING CONSIDERED FOR	3745-57-02	ACTION	CHEMICAL		
HW		3745-57-41	A,B	WASTE ANALYSIS FOR INCINERATORS	REQUIRES WASTE ANALYSIS BE PERFORMED FOR TRIAL BURN AND FOR NORMAL OPERATION OF INCINERATOR.	PERTAINS TO ANY ALTERNATIVE THAT WILL INCORPORATE INCINERATION OF HAZARDOUS WASTES	3745-57-40	CHEMICAL	ACTION		
HW		3745-57-42	A,B,C	PRINCIPAL ORGANIC HAZARDOUS CONSTITUENTS, INCINERATORS	ESTABLISHES METHOD BY WHICH POHCS WILL BE SPECIFIED.	PERTAINS TO ANY ALTERNATIVE THAT WILL INCORPORATE INCINERATION OF HAZARDOUS WASTES.	3745-57-40	CHEMICAL	ACTION		
HW		3745-57-43	A,B,C	PERFORMANCE STANDARDS FOR INCINERATORS	SPECIFIES PERFORMANCE STANDARDS THAT ALL INCINERATORS MUST MEET (DESTRUCTION REMOVAL EFFICIENCIES, HCL EMISSIONS, PARTICULATE EMISSIONS).	PERTAINS TO ANY ALTERNATIVE THAT WILL INCORPORATE INCINERATION OF HAZARDOUS WASTES.	3745-57-40	CHEMICAL	ACTION		
HW		3745-57-44	C	INCINERATOR TRIAL BURNS - ALTERNATIVE DATA	REQUIRES TRIAL BURN TO DETERMINE FINAL OPERATING CONDITIONS.	PERTAINS TO ANY ALTERNATIVE THAT WILL INCORPORATE INCINERATION OF HAZARDOUS WASTES	3745-57-40	ACTION	CHEMCIAL		
HW		3745-57-45	A-F	INCINERATOR OPERATING REQUIREMENTS	SPECIFIES GENERAL OPERATING REQUIREMENTS FOR ALL INCINERATORS.	PERTAINS TO ANY ALTERNATIVE THAT WILL INCORPORATE INCINERATION OF HAZARDOUS WASTES.	3745-57-40	ACTION			
HW		3745-57-47	A,B,C	MONITORING AND INSPECTION OF INCINERATORS	REQUIRES THE MONITORING OF CERTAIN PARAMETERS ON A CONTINUOUS BASIS AND INSPECTIONS OF EQUIPMENT.	PERTAINS TO ANY ALTERNATIVE THAT WILL INCORPORATE INCINERATION OF HAZARDOUS WASTES.	3745-57-40	ACTION	CHEMCIAL		
HW		3745-57-51		CLOSURE OF INCINERATORS	REQUIRES THAT ALL HAZARDOUS WASTE AND HAZARDOUS WASTE RESIDUES BE REMOVED FROM THE INCINERATOR SITE.	PERTAINS TO ANY ALTERNATIVE THAT WILL INCORPORATE INCINERATION OF HAZARDOUS WASTES.	3745-57-40	ACTION			
HW		3745-57-91	A,B,C	ENVIRONMENTAL PERFORMANCE STANDARDS FOR MISC UNITS	ESTABLISHES LOCATION, DESIGN, CONSTRUCTION, OPERATION, MAINTENANCE AND CLOSURE REQUIREMENTS FOR MISCELLANEOUS UNITS USED TO TREAT, STORE OR DISPOSE OF HAZARDOUS WASTES.	PERTAINS TO ANY ALTERNATIVE THAT INCORPORATES TREATMENT, STORAGE OR DISPOSAL OF HAZARDOUS WASTES IN MISCELLANEOUS UNITS.	3745-57-90	ACTION	CHEMCIAL		
HW		3745-57-92		MONITORING, INSPECTING ANALYZING, ... FOR MISC UNITS	REQUIRES THAT MONITORING, ANALYSIS, INSPECTION, RESPONSE, REPORTING AND CORRECTIVE ACTION BE CONDUCTED AS NECESSARY AT MISCELLANEOUS UNITS TO ASSURE THAT HUMAN HEALTH AND THE ENVIRONMENT ARE PROTECTED.	PERTAINS TO ANY ALTERNATIVE THAT INCORPORATES TREATMENT, STORAGE OR DISPOSAL OF HAZARDOUS WASTES IN MISCELLANEOUS UNITS.	3745-57-90	ACTION			

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HW		3745-57-93		POST-CLOSURE CARE FOR MISC DISPOSAL UNITS	REQUIRES POST-CLOSURE CARE OF MISCELLANEOUS UNITS THAT ARE DISPOSAL UNITS AND OF TREATMENT OR STROAGE MISCELLANEOUS UNITS THAT THAT LEAVE CONTAMINATED SOILS OR GROUND WATER AFTER CLOSURE	PERTAINS TO ANY ALTERNATIVE THAT INCORPORATES TREATMENT, STORAGE OR DISPOSAL OF HAZARDOUS WASTES IN MISCELLANEOUS UNITS.	3745-57-90	ACTION			
HW		3745-58-42	B,C	PROHBITIONS	DESCRIBES THE TYPES OF FURNACES,	PERTAINS TO ANY SITE WHERE	3745-58-40	ACTION			4/1/93
				HAZARDOUS WASTE BURNED FOR ENERGY RECOVERY	BOILERS OR CEMENT KILNS IN WHICH HAZARDOUS WASTE MAY BE BURNED FOR ENERGY RECOVERY.	HAZARDOUS WASTE HAS BTU VALUE AND MAY BE BURNED FOR ENERGY RECOVERY ON-SITE.					
HW		3745-58-43	A,C	STANDARDS FOR GENERATORS OF HAZARDOUS WASTE FUEL	ESTABLISHES STANDARDS FOR GENERATORS OF HAZARDOUS WASTE WHICH IS USED AS A FUEL OR USED TO PRODUCE A FUEL. ALSO ESTABLISHES STANDARDS FOR GENERATORS WHO ARE ALSO BURNERS OF HAZARDOUS WASTE FUEL.	PERTAINS TO ANY SITE WHERE HAZARDOUS WASTE HAS BTU VALUE AND MAY BE BURNED FOR ENERGY RECOVERY ON-SITE.	3745-58-40	ACTION			4/1/93
HW		3745-58-46	A,C,D,E	STANDARDS APPLICABLE TO BURNERS OF HAZARDOUS WASTE FUEL	SPECIFIES THE OPERATING REQUIREMENTS FOR INDUSTRIAL FURNACES AND BOILERS THAT BURN HAZARDOUS WASTE FUEL.	PERTAINS TO ANY SITE WHERE HAZARDOUS WASTE HAS BTU VALUE AND MAY BE BURNED FOR ENERGY RECOVERY ON-SITE.	3745-58-40	ACTION			4/2/93
HW		3745-58-51	B	PROHIBITIONS: USED OIL BURNED FOR ENERGY RECOVERY	DESCRIBES THE TYPES OF FURNACES, BOILERS AND SPACE HEATERS IN WHICH USED OIL MAY BE BURNED FOR ENERGY RECOVERY.	PERTAINS TO ANY SITE AT WHICH "USED OIL FUEL" IS ON-SITE AND MAY BE BURNED FOR ENERGY RECOVERY ON-SITE	3745-58-50	ACTION			4/2/93
HW		3745-58-52	A,C	STANDARDS FOR GENERATORS OF USED OIL FUEL	ESTABLISHES STANDARDS FOR GENERATORS OF USED OIL BURNED FOR ENERGY RECOVERY. ALSO ESTABLISHES STANDARDS FOR GENERATORS OF USED OIL FUEL WHO ALSO BURN USED OIL.	PERTAINS TO ANY SITE AT WHICH THERE IS USED OIL WHICH MAY BE BURNED FOR ENERGY RECOVERY ON-SITE.	3745-58-50	ACTION			4/2/93
HW		3745-58-54	A,D	STANDARDS FOR BURNERS OF USED OIL BURNED FOR ENERGY REC	SPECIFIES OPERATING REQUIREMENTS FOR FACILITIES WHICH BURN USED OIL FUEL.	PERTAINS TO ANY SITE AT WHICH THERE IS USED OIL WHICH MAY BE BURNED FOR ENERGY RECOVERY ON-SITE	3745-58-50	ACTION			4/2/93
HW		3745-58-60	B(2)	RECYCLABLE MATERIALS USED FOR PRECIOUS METALS RECOVERY	SECIFIES REQUIREMENTS FOR GENERATORS AND STORERS OF RECYCLABLE MATERIALS THAT ARE RECLAIMED TO RECOVER PRECIOUS METALS (e.g. GOLD, SILVER, PLATINUM, ETC.)	PERTAINS TO ANY SITE AT WHICH THERE ARE MATERIALS ON-SITE WHICH MAY BE RECLAIMED FOR RECOVERY OF PRECIOUS METALS.		ACTION	CHEMICAL		4/2/93
HW		3745-58-70	A,B	REQUIREMENTS FOR RECLAIMING SPENT LEAD ACID BATTERIES	SPECIFIES REQUIREMENTS FOR PERSONS WHO RECLAIM SPENT LEAD ACID BATTERIES AND FOR PERSONS WHO GENERATE, STORE, TRANSPORT OR COLLECT THEM BUT DO NOT RECLAIM THEM.	PERTAINS TO ANY SITE AT WHICH THERE ARE SPENT LEAD ACID BATTERIES WHICH MAY BE RECLAIMED ON-SITE OR OFF-SITE.		ACTION			4/2/93
HW		3745-59-01	C,E	HAZARD WASTES RESTRICTED FROM LAND DISPOSAL-EXCEPTIONS	LISTS TYPE OF RESTRICTED WASTES THAT MAY BE LAND DISPOSED. LISTS TYPE OF HAZARDOUS WASTES NOT SUBJECT TO LDRs.	PERTAINS TO ANY ALTERNATIVE THAT INCORPORATES DISPOSAL OF HAZARDOUS WASTES ON-SITE	3745-59-05 TO 08 3745-59-30 TO 35	ACTION		49 CFR 144.6(A)	4/6/93
HW		3745-59-03	A,B	DILUTION PROHIBITED AS A SUBSTITUTE FOR TREATMENT	PROHIBITS DILUTION OF A RESTRICTED WASTE OR THE RESIDUAL FROM TREATMENT OF A RESTRICTED WASTE AS A SUBSTITUTE FOR ADEQUATE TREATMENT IN ORDER TO LAND DISPOSE HAZARDOUS WASTE. DILUTION OF WATER WASTES IS NOT IMPERMISSIBLE DILUTION UNLESS A METHOD HAS BEEN SPECIFIED AS A TREATMENT STANDARD.	PERTAINS TO ANY ALTERNATIVE THAT INCORPORATES DISPOSAL OF HAZARDOUS WASTE ON-SITE.	3745-59-44 TO 44, 3745-59-30 TO 35	ACTION			4/6/93

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HW		3745-59-04	A	TREATMENT SURFACE IMPOUNDMENT EXCEMPTION	WASTES PROHIBITED FROM LAND DISPOSAL MAY BE TREATED IN A SURFACE IMPOUNDMENT PROVIDED THAT THE CONDIDTIONS STATED IN PARAGRAPH A ARE MET	PERTAINS TO ANY SITE AT WHICH ON-SITE HAZARDOUS WASTES WILL BE TREATED IN A SURFACE IMPOUNDMENT.	3745-59-30 TO 35 3745-54 TO 56	ACTION			4/6/93
HW		3745-59-07	A,B,C	WASTE ANALYSIS OF HAZARDOUS WASTE	GENERATOR SHALL TEST THE WASTE OR TEST AN EXTRACT OF THE WASTE	PERTAINS TO AN ALTERNATIVE THAT INCORPORATES DISPOSAL OF HAZARDOUS	3745-51,3745 54-13,3745-	ACTION			4/7/93
					ACCORDING TO THE FREQUENCY AND TEST METHODS DESCRIBED IN THE RULES, TO DETERMINE IF THE WASTE IS RESTRICTED FROM LANAD DISPOSAL.	WASTE ON-SITE.	59-32				
HW		3745-59-09	B,C	SPECIAL RULES REGARDING WASTE THAT EXHIB A CHARACTERIST	PROHIBITS LAND DISPOSAL OF CHARACTERISTIC WASTE UNLESS THE WASTE COMPLIES WITH THE TREATMENT STANDARDS OF LISTED WASTES. IF THE WASTE IS BOTH LISTED AND EXHIBITS A CHARACTERISTIC, THE TREATMENT STANDARD FOR THE LISTED WASTE WILL OPERATE IN LIEU OF THE STANDARD FOR THE CHARACTERISTIC WASTE.	PERTAINS TO ANY SITE IN WHICH ON-SITE DISPOSAL OF HAZARDOUS WASTE IS AN ALTERNATIVE.	3745-51-20 TO 24 3745-51-30 TO 33	ACTION	CHEMICAL		4/12/93
HW		3745-59-30	A,B,C	WASTE SPECIFIC PROHIBITIONS	PROHIBITS SPENT SOLVENT WASTES OR CONTAMINATED SOIL AND DEBRIS RESULTING FROM A RESPONSE ACTION UNDER CERCLA OR RCRA TO BE LAND DISPOSED UNLESS GENERATOR MEETS TREATMENT STANDARDS (3745-59-40 TO 44) OR HAS BEEN GRANTED AN EXTENSION OR EXCEMPTION	PERTAINS TO ANY SITE IN WHICH ON-SITE LAND DISPOSAL OF HAZARDOUS WASTE IS AN ALTERNATIVE	3745-59-05 TO 06 3745-59-40 TO 44	ACTION	CHEMICAL		4/12/93
HW		3745-59-31	A,B,C,D	DIOXIN WASTE PROHIBITIONS	PROHIBITS ON-SITE DISPOSAL OF DIOXIN WASTE UNLESS IT MEETS TREATEMENT STANDARDS OF RULES 3745-59-40 TO 44 OR THE GENERATOR HAS BEEN GRANTED AN EXTENSION OR EXEMPTION	PERTAINS TO ANY SITE IN WHICH ON-SITE LAND DISPOSAL OF DIOXIN WASTE IS AN ALTERNATIVE	3745-59-05 TO 06 3745-59-40 TO 44	CHEMICAL	ACTION		4/12/93
HW		3745-59-32	A,D,E,F	CALIFORNIA LIST WASTES PROHIBITIONS	PROHIBITS LAND DISPOSAL OF FOLLOWING WASTES: 1. LIQUID WASTES WITH pH<2 OR pH=2 2. LIQUID WASTES CONTAINING PCBs WITH CONC=50 OR CONC>50 PPM 3. LIQUID WASTES WITH HALOGENATED ORGANIC LOADING OF > OR = 1000mg/l AND LESS THAN 10,000 mg/l	PERTAINS TO ANY SITE IN WHICH ON-SITE LAND DISPOSAL OF PCB OR HOC CONTAMINATED WASTE IS AN ALTERNATIVE	3745-59-05 TO 06 3745-59-40 TO 44	CHEMICAL	ACTION	40CFR268.5(h)2	4/12/93
HW		3745-59-33	A,B,C,D,E,F,G	FIRST THIRD WASTES PROHIBITIONS	PROHIBITS ON-SITE LAND DISPOSAL OF FIRST THIRD WASTES UNLESS REQUIREMENTS OF PARAGRAPHS D,E,F,G ARE MET	PERTAINS TO ANY SITE IN WHICH ON-SITE LAND DISPOSAL OF FIRST THIRD HAZARDOUS WASTES IS AN ALTERNATIVE	3745-59-40 TO 44	CHEMICAL	ACTION	40CFR268.5(h)2	4/12/93
HW		3745-59-34	A-H	SECOND THIRD WASTES PROHIBITIONS	PROHIBITS ON-SITE LAND DISPOSAL OF SECOND THIRD WASTES UNLESS REQUIREMENTS OF PARAGRAPHS D,E,F,G ARE MET	PERTAINS TO ANY SITE IN WHICH ON-SITE LAND DISPOSAL OF SECOND THIRD HAZARDOUS WASTES IS AN ALTERNATIVE	3745-59-40 TO 44	CHEMICAL	ACTION	40CFR268.5(h)2	4/12/93
HW		3745-59-35	A-I	THIRD THIRD WASTES PROHIBITIONS	PROHIBITS ON-SITE LAND DISPOSAL OF THIRD THIRD WASTES UNLESS REQUIREMENTS OF PARAGRAPHS D,E,F,G ARE MET	PERTAINS TO ANY SITE IN WHICH ON-SITE LAND DISPOSAL OF THIRD THIRD HAZARDOUS WASTES IS AN ALTERNATIVE	3745-59-40 TO 44	CHEMICAL	ACTION	40CFR268.5(h)2	4/12/93

CATEGORY	ORC	OAC	PERTINENT PARAGRAPH	TITLE OR SUBJECT OF REGULATION	DESCRIPTION OF REGULATION	APPLICATION OF REGULATION	REF	ARAR TYPE 1	ARAR TYPE 2	FEDERAL REGULATION	LAST REVISION
-W		3745-59-40	A,B,C	APPLICABILITY OF TREATMENT STANDARDS	PROHIBITS ON-SITE LAND DISPOSAL OF RESTRICTED WASTE UNLESS THE WASTE IS TESTED USING TEST METHOD IN THE APPENDIX TO RULE OAC 3745-21-24 OR THIS RULE AND THE CONCENTRATION OF ANY HAZARDOUS CONSITUENT DOES NOT EXCEED THE CONCENTRATION SHOWN IN	PERTAINS TO ANY SITE IN WHICH ON-SITE LAND DISPOSAL OF RESTRICTED WASTE MAY BE AN ALTERNATIVE.	3745-59-42, 3745-51-24,3745-59-43	CHEMICAL	ACTION		4/12/93
					TABLE CCWE OF RULE 3745-59-41 OR TABLE CCW OF RULE 3745-59-43. A WASTE TREATED USING A TECHNOLOGY SPECIFIED UNDER RULE 3745-59-42 OR EQUIVALENT MAY BE LAND DISPOSED.						
W		3745-59-41	A	TREATMENT STANDARDS AS CONCENTRATIONS IN WASTE EXTRACTS	RESTRICTED WASTE SHOULD BE TREATED TO CONCENTRATION LEVELS SPECIFIED IN THIS RULE USING TEST METHOD IN THE APPENDIX TO RULE 3745-51-24 OR THE APPENDIX TO RULE 3745-59-40	PERTAINS TO ANY SITE IN WHICH ON-SITE LAND DISPOSAL OF RESTRICTED WASTE IS AN ALTERNATIVE	3745-51-24, 3745-59-40	CHEMICAL			4/12/93
W		3745-59-42	A,C,D	TREATMENT STANDARDS EXPRESSED AS SPECIFIED TECHNOLOGIES	ESTABLISHES TREATMENT STANDARDS FOR LIQUID HAZARDOUS WASTE CONTAINING PCBs, NON-LIQUID HAZARDOUS WASTE CONTAINING HALOGENATED ORGANIC COMPOUNDS (HOCs) AND LAB PACKS. RADIOACTIVE HAZARDOUS MIXED WASTES ARE NOT SUBJECT TO TREATMENT STANDARDS.	PERTAINS TO ANY SITE IN WHICH ON-SITE TREATMENT AND DISPOSAL OF HAZARDOUS WASTE CONTAINING EITHER PCB LIQUID WASTE OR HOC NON-LIQUID WASTE MIGHT TAKE PLACE	3745-59-40 TO 44	ACTION	CHEMICAL		4/12/93
W		3745-59-43	A,B,C	TREATMENT STANDARDS EXPRESSED AS WASTE CONCENTRATIONS	IDENTIFIES THE RESTRICTED WASTES AND THE CONCENTRATIONS OF THEIR ASSOCIATED HAZARDOUS CONSITUENTS WHICH MAY NOT BE EXCEEDED BY THE WASTE OR TREATMENT RESIDUAL FOR THE ALLOWABLE LAND DISPOSAL OF SUCH WASTE OR RESIDUAL	PERTAINS TO ANY SITE IN WHICH ON-SITE TREATMENT AND DISPOSAL OF RESTRICTED WASTE IS AN ALTERNATIVE	3745-59-41,3745-59-07,3745-57-40 TO 51	CHEMICAL			4/12/93
V		3745-59-50	A,B,C,D,E	PROHIBITION ON STORAGE OF RESTRICTED WASTE	PROHIBITS ON-SITE STORAGE OF HAZARDOUS WASTES RESTRICTED FROM LAND DISPOSAL BEYOND A SPECIFIED TIME FRAME STATED IN THE RULE.	PERTAINS TO ANY SITE IN WHICH STORAGE OF HAZARDOUS WASTE WILL OCCUR ON SITE TO FACILITATE PROPER RECOVERY, TREATMENT OR DISPOSAL. IN SOME CASES STORAGE OF RESTRICTED WASTES BEYOND ONE YEAR IS ALLOWED.					4/12/93
		3745-66-11	A,B	CLOSURE PERFORMANCE STANDARD	OWNER SHALL CLOSE FACILITY IN MANNER THAT MINIMIZES NEED FOR FURTHER MAINTENANCE AND REDUCES OR ELIMINATES POLLUTION OF GROUND WATER, SURFACE WATER OR ATMOSHPERE	CONSIDER FOR REMEDIAL PLANS THAT MAY REQUIRE EXTENDED OPERATION AND MAINTENANCE OF EQUIPMENT. CONSIDER ALTERNATIVES WITH LESS LONG-TERM O&M. APPLICABLE FOR RCRA FACILITIES, APPROPRIATE AND RELEVANT FOR OTHER SITES.					9/16/96
		3745-71-02		AMBIENT AIR QUALITY STANDARS - LEAD	THE AMBIENT QUALITY STANDARD FOR LEAD SHALL BE A MAXIMUM ARITHMETIC MEAN OF 1.5 MICROGRAMS PER CUBIC METER DURING ANY CALENDAR QUARTER.	CONSIDER FOR SITES WHERE INCINERATION OR WASTE FUEL RECOVERY MAY TAKE PLACE.		ACTION			
		3745-76-01	A,B	DEFINITIONS, NMOC LANDFILL GAS EMISSIONS	DEFINES TECHNICAL TERMS RELEVANT TO NONMETHANE GAS EMISSIONS FROM LANDFILLS	CONSIDER FOR OLD LANDFILL SITES					1/31/98
		3745-76-03	A-C	CONTROL REQUIREMENTS FOR MUNICIPAL SOLID WASTE LANDFILL	ESTABLISHES SIZE AND EMISSION RATE REQUIREMENT FOR NMOC GAS CONTROL. ESTABLISHES PERFORMANCE REQUIREMENTS OF 98 PERCENT GAS DESTRUCTION OR 20 PPM IN EXHAUST GAS.	CONSDIER FOR OLD LANDFILL SITES.					1/31/98
		3745-76-04		TEST METHODS AND PROCEDURES	REQUIRES CALCULATION OF GAS EMISSION RATE	CONSIDER FOR OLD LANDFILL SITES					1/31/98

OHIO UNIVERSAL ARARs

CATEGORY	ORC	OAC	PERTINENT PARAGRAPH	TITLE OR SUBJECT OF REGULATION	DESCRIPTION OF REGULATION	APPLICATION OF REGULATION	REF	ARAR TYPE 1	ARAR TYPE 2	FEDERAL REGULATION	LAST REVISION
APC		3745-76-05		REPORTING AND RECORDKEEPING GUIDELINES	REQUIRES RECORD KEEPING IN ACCORDANCE WITH 3745-76-12 AND 13	CONSIDER FOR OLD LANDFILL SITES					1/31/98
APC		3745-76-06	A,B	COMLIANCE TIMES	REQUIRES COMPLIANCE WITH TIME SCHEDULES ESTABLISHED IN 3745-76-06	CONSIDER FOR OLD LANDFILL SITES					1/31/98
APC		3745-76-07	A,B	STDS FOR AIR EMISSIONS FROM MUNICIPAL WASTE LANDFILLS	REQUIRES CALCULATION OF NMOC EMISSION VOLUMES, INSTALLATION OF GAS CONTROL SYSTEM IF THRESHOLD VOLUME OF 50 MEGAGRAMS/YEAR OF GAS IS EXCEEDED, AND START COLLECTION FROM EACH AREA THAT CEASES ACCEPTING WASTES. SPECIFIES STANDARDS FOR TERMINATION OF GAS COLLECTION.	CONSIDER FOR OLD LANDFILL SITES.					1/31/98
APC		3745-76-08	A-G	OPERATIONAL STANDARDS FOR COLLECTION AND CONTROL	SPECIFIES OPERATIONAL PARAMETERS FOR GAS CONTROL SYSTEMS, INCLUDING TEMPERATURES AND GAS COMPOSITIONS IN SOURCE WELLS, GROUND LEVEL GAS COMPOSITIONS, AND MONITORING REQUIREMENTS.	CONSIDER FOR OLD LANDFILL SITES					1/31/98
APC		3745-76-09	A-D	TESTS METHODS AND PROCEDURES	REQUIRES CALCULATION OF GAS EMISSION RATES, MEASUREMENT OF GAS COMPOSITION, MONITORING OF GAS VOLUMES AND COMPOSITONS COLLECTED, AND DETERMINATION OF CONTROL SYSTEM EFFICIENCY.	CONSIDER FOR OLD LANDFILL SITES					1/31/98
APC		3745-76-10	A-E	COMPLIANCE PROVISIONS	REQUIRES CALCULATION OF EXPECTED GAS EMISSION RATES, DEMONSTRATION OF ADEQUACY OF GAS CONTROL SYSTEM, OPERATION OF GAS CONTROL SYSTEM IN CLOSED AREAS, MEASUREMENT OF SURFACE GAS CONCENTRATIONS AND CORRECTIVE ACTIONS SHOULD EMISSION STANDARDS BE EXCEEDED.	CONSIDER FOR OLD LANDFILL SITES					1/31/98
APC		3745-76-11	A-F	MONITORING OF OPERATIONS	REQUIRES SAMPLING PORTS, MONITORING OF GAS TEMPERATURE, PRESSURE AND COMPOSITON, GAS FLOW RATES, AND FLAME TEMPERATURE. DEMONSTRATE ADEQUATE PERFORMANCE OF ALTERNATIVE COLLECTION SYSTEMS. MONITOR SURFACE GAS CONCENTRATIONS.	CONSIDER FOR OLD LANDFILL SITES					1/31/98
APC		3745-76-12	A-G	REPORTING REQUIREMENTS	ESTABLISHES REPORTING REQURIEMENTS FOR LANDFILL SUBJECT TO NMOC EMISSION CONTROL RULES. INCLUDES DESIGN AND TECHNICAL DETAILS OF EQUIPMENT AS WELL AS RESULTS OF EMISSION MONITORING.	CONSIDER FOR OLD LANDFILL SITES					1/31/98
APC		3745-76-13	A-E	RECORDKEEPING REQUIREMENTS	ESTABLISHES REQUIREMENTS FOR RECORDS TO BE KEPT AT SITES SUBJECT TO NMOC EMISSION RULES.	CONSIDER FOR OLD LANDFILL SITES					1/31/98
APC		3745-76-14	A-C	SPECIFICATIONS FOR ACTIVE COLLECTION SYSTEMS	REQUIRES ADEQUATE DURABILITY AND PERFORMANCE OF GAS COLLECTION EQUIPMENT. GIVES TECHNICAL REQUIREMENTS TO BE MET.	CONSIDER FOR OLD LANDFILL SITES.					1/31/98
APC		3745-76-15	A-D	FLARE REQUIREMENTS	SPECIFIES PERFORMANCE REQUIREMENTS FOR FLARES INCLUDING GAS FLOW RATES AND MINIMUM BTU CONTENT OF GAS TO BE FLARED.	CONSIDER FOR OLD LANDFILL SITES					1/31/98

CATEGORY	ORC	OAC	PERTINENT PARAGRAPH	TITLE OR SUBJECT OF REGULATION	DESCRIPTION OF REGULATION	APPLICATION OF REGULATION	REF	ARAR TYPE 1	ARAR TYPE 2	FEDERAL REGULATION	LAST REVISION
DW		3745-81-11	A,B,C	MAXIMUM CONTAMINANT LEVELS FOR INORGANIC CHEMICALS	PRESENTS MAXIMUM CONTAMINANT LEVELS FOR INORGANICS.	PERTAINS TO ANY SITE WHICH HAS CONTAMINATED GROUND OR SURFACE WATER THAT IS EITHER BEING USED, OR HAS THE POTENTIAL FOR USE, AS A DRINKING WATER SOURCE.		CHEMICAL			
DW		3745-81-12	A,B,C	MAXIMUM CONTAMINANT LEVELS FOR ORGANIC	PRESENTS MCLS FOR ORGANICS.	PERTAINS TO ANY SITE WHICH HAS CONTAMINATED GROUND OR SURFACE		CHEMICAL			
				CHEMICALS		WATER THAT IS EITHER BEING USED, OR HAS THE POTENTIAL FOR USE, AS A DRINKING WATER SOURCE.					
DW		3745-81-13	A,B	MAXIMUM CONTAMINANT LEVELS FOR TURBIDITY	PRESENTS MCLS FOR TURBIDITY.	PERTAINS TO ANY SITE WHICH HAS CONTAMINATED GROUND OR SURFACE WATER THAT IS EITHER BEING USED, OR HAS THE POTENTIAL FOR USE, AS A DRINKING WATER SOURCE.		CHEMICAL			
DW		3745-81-14	A-E	MAXIMUM MICROBIOLOGICAL CONTAMINANT LEVELS	PRESENTS MCLS FOR MICROBIOLOGICAL CONTAMINANTS.	PERTAINS TO ANY SITE WHICH HAS CONTAMINATED GROUND OR SURFACE WATER THAT IS EITHER BEING USED, OR HAS THE POTENTIAL FOR USE, AS A DRINKING WATER SOURCE.		CHEMICAL			
DW		3745-81-15	A,B	MAX CONTAMINANT LEVELS FOR RADIUM 226 228,GROSS ALPHAS	PRESENTS MCLS FOR RADIUM-226, RADIUM 228 AND GROSS ALPHA PARTICLE ACTIVITY.	PERTAINS TO ANY SITE WHICH HAS CONTAMINATED GROUND OR SURFACE WATER THAT IS EITHER BEING USED, OR HAS THE POTENTIAL FOR USE, AS A DRINKING WATER SOURCE.		CHEMICAL			
DW		3745-81-16	A,B	MAX CONTAM LEVELS FOR BETA PARTICLE & PHOTON RADIOACTIV	PRESENTS MCLS FOR BETA PARTICLE AND PHOTON RADIOACTIVITY FROM MAN-MADE RADIONUCLIDES.	PERTAINS TO ANY SITE WHICH HAS CONTAMINATED GROUND OR SURFACE WATER THAT IS EITHER BEING USED, OR HAS THE POTENTIAL FOR USE, AS A DRINKING WATER SOURCE.		CHEMICAL			
DW		3745-81-21	A,B	MICROBIOLOGICAL CONTAMINANT SAMPLING & ANALYTICAL REQ	PRESENTS SAMPLING AND ANALYTICAL REQUIREMENTS FOR MICROBIOLOGICAL CONTAMINANTS.	PERTAINS TO ANY SITE WHICH HAS CONTAMINATED GROUND OR SURFACE WATER THAT IS EITHER BEING USED, OR HAS THE POTENTIAL FOR USE, AS A DRINKING WATER SOURCE.		CHEMICAL			
DW		3745-81-22	A,B	TUBIDITY CONTAMINANT SAMPLING & ANALYTICAL REQUIREMENTS	PRESENTS SAMPLING AND ANALYTICAL REQUIREMENTS FOR TURBIDITY.	PERTAINS TO ANY SITE WHICH HAS CONTAMINATED GROUND OR SURFACE WATER THAT IS EITHER BEING USED, OR HAS THE POTENTIAL FOR USE, AS A DRINKING WATER SOURCE.		CHEMICAL			
DW		3745-81-23	A,E	INORGANIC CONTAMINANT MONITORING REQUIREMNENTS	PRESENTS MONITORING REQUIREMENTS FOR INORGANIC CONTAMINANTS.	PERTAINS TO ANY SITE WHICH HAS CONTAMINATED GROUND OR SURFACE WATER THAT IS EITHER BEING USED, OR HAS THE POTENTIAL FOR USE, AS A DRINKING WATER SOURCE.		CHEMICAL			
DW		3745-81-24	A-E	ORGANIC CONTAMINANT MONITORING REQUIREMENTS	PRESENTS MONITORING REQUIREMENTS FOR ORGANIC CONTAMINANTS.	PERTAINS TO ANY SITE WHICH HAS CONTAMINATED GROUND OR SURFACE WATER THAT IS EITHER BEING USED, OR HAS THE POTENTIAL FOR USE, AS A DRINKING WATER SOURCE.		CHEMICAL			
DW		3745-81-25	A-D	ANALYTICAL METHODS FOR RADIOACTIVITY	PRESENTS ANALYTICAL METHODS FOR RADIOACTIVITY.	PERTAINS TO ANY SITE WHICH HAS CONTAMINATED GROUND OR SURFACE WATER THAT IS EITHER BEING USED, OR HAS THE POTENTIAL FOR USE, AS A DRINKING WATER SOURCE.		CHEMICAL			
DW		3745-81-26	A,B,C	MONITORING FREQUENCY FOR RADIOACTIVITY	PRESENTS MONITORING REQIREMENTS FOR RADIOACTIVITY.	PERTAINS TO ANY SITE WHICH HAS CONTAMINATED GROUND OR SURFACE WATER THAT IS EITHER BEING USED, OR HAS THE POTENTIAL FOR USE, AS A DRINKING WATER SOURCE.		CHEMICAL			4/22/93

CATEGORY	ORC	OAC	PERTINENT PARAGRAPH	TITLE OR SUBJECT OF REGULATION	DESCRIPTION OF REGULATION	APPLICATION OF REGULATION	REF	ARAR TYPE 1	ARAR TYPE 2	FEDERAL REGULATION	LAST REVISION
DW		3745-81-27	A-E	ANALYTICAL TECHNIQUES	PRESENTS GENERAL ANALYTICAL TECHNIQUES FOR MCLS.	PERTAINS TO ANY SITE WHICH HAS CONTAMINATED GROUND OR SURFACE WATER THAT IS EITHER BEING USED, OR HAS THE POTENTIAL FOR USE, AS A DRINKING WATER SOURCE.		CHEMICAL			4/22/93
DW		3745-81-40	A,B,C	REQUIREMENTS FOR A VARIANCE FROM MCLS	PROVIDES CRITERIA BY WHICH DIRECTOR MAY GRANT VARIANCE FROM MCLS	PERTAINS TO ANY SITE WHICH HAS CONTAMINATED GROUND OR SURFACE WATER THAT IS EITHER BEING USED, OR HAS THE POTENTIAL FOR USE, AS A DRINKING WATER SOURCE		CHEMICAL			
DW		3745-81-46		ALTERNATIVE TREATMENT TECHNIQUE VARIANCE	ALLOWS FOR THE USE OF ALTERNATIVE TREATMENT TECHNIQUES TO ATTAIN MCLS.	PERTAINS TO ANY SITE WHICH HAS CONTAMINATED GROUND OR SURFACE WATER THAT IS EITHER BEING USED, OR HAS THE POTENTIAL FOR USE, AS A DRINKING WATER SOURCE.		CHEMICAL			
DW		3745-81-60	A,B,C	SANITARY SURVEYS	SANITARY SURVEY REQUIREMENTS FOR SITES WHICH DO NOT COLLECT FIVE OR MORE ROUTINE TOTAL COLIFORM SAMPLES PER MONTH.	PERTAINS TO ANY SITE WHICH HAS CONTAMINATED GROUND OR SURFACE WATER THAT IS EITHER BEING USED OR HAS THE POTENTIAL FOR USE AS DRINKING WATER SOURCE		CHEMICAL	ACTION		4/22/93
DW		3745-81-71	A,B	GEN REQ FOR FILTRATION & DISINFECTION FOR SURFACE WATER	TREATMENT STANDARDS FOR GIARDIA LAMBLIA, VIRUSES, HETEROTROPHIC PLATE COUNT BACTERIA, LEGIONELLA, TURBIDITY	PERTAINS TO ANY SITE WHICH HAS CONTAMINATED SURFACE WATER THAT IS EITHER BEING USED, OR HAS THE POTENTIAL FOR USE, AS A DRINKING WATER SOURCE	3745-81-72,3745-81-73	ACTION	CHEMICAL		4/22/93
DW		3745-81-72	A,B	DISINFECTION OF WATER FROM SURFACE WATER SOURCES	DISINFECTION REQUIREMENTS AND TREATMENT OF SURFACE WATER	PERTINS TO ANY SITE WHICH HAS CONTAMINATED SURFACE WATER THAT IS EITHER BEING USED , OR HAS THE POTENTIAL FOR USE, AS A DRINKING WATER SOURCE	3745-81-32,3745-81-27,3745-81-74	ACTION	CHEMICAL		4/22/93
DW		3745-81-73	A,B,C	FILTRATION OF WATER FROM SURFACE WATER SOURCES	CONVENTIONAL FILTRATION, SLOW SAND FILTRATION, OR OTHER FILTRATION TREATMENT TECHNOLOGIES FOR TREATMENT OF SURFACE WATER	PERTAINS TO ANY SITE WHICH HAS CONTAMINATED SURFACE WATER THAT IS EITHER BEING USED, OR HAS THE POTENTIAL FOR USE, AS A DRINKING WATER SOURCE	3745-81-27,3745-81-72,3745-81-74	ACTION			4/22/93
DW		3745-81-74	A-D	TURBIDITY AND DISINFECTION MONIT REQ FOR SURFACE WATER	TURBIDITY AND DISINFECTION MONITORING REQUIREMENTS FOR SURFACE WATER SYSTEMS	PERTAINS TO ANY SITE WHICH HAS CONTAMINATED SURFACE WATER THAT IS EITHER BEING USED OR HAS THE POTENTIAL FOR USE, AS A DRINKING WATER SOURCE	3745-81-72,3745-81-73	ACTION			4/22/93
GW		3745-9-04	A,B	LOCATION/SITING OF NEW GW WELLS	MANDATES THAT GROUND WATER WELLS BE: A) LOCATED AND MAINTAINED SO AS TO PREVENT CONTAMINANTS FROM ENTERING WELL. B) LOCATED SO AS TO BE ACCESSIBLE FOR CLEANING AND MAINTENANCE.	PERTAINS TO ALL GROUND WATER WELLS ON THE SITE THAT EITHER WILL BE INSTALLED OR HAVE BEEN INSTALLED SINCE FEB. 15, 1975. WOULD PERTAIN DURING THE FS IF NEW WELLS ARE CONSTRUCTED FOR TREATABILITY STUDIES.	3745-9-01	LOCATION	ACTION		3/18/93
GW		3745-9-05	A1,B-H	CONSTRUCTION OF NEW GW WELLS	SPECIFIES MINIMUM CONSTRUCTION REQUIREMENTS FOR NEW GROUND WATER WELLS IN REGARDS TO CASING MATERIAL, CASING DEPTH, POTABLE WATER, ANNULAR SPACES, USE OF DRIVE SHOE, OPENINGS TO ALLOW WATER ENTRY, CONTAMINANT ENTRY.	PERTAINS TO ALL GROUND WATER WELLS ON THE SITE THAT EITHER WILL BE INSTALLED OR HAVE BEEN INSTALLED SINCE FEB. 15, 1975. WOULD PERTAIN DURING THE FS IF NEW WELLS ARE CONSTRUCTED FOR TREATABILITY STUDIES.	3745-9-01	ACTION			
GW		3745-9-06	A,B,D,E	CASING REQUIREMENTS FOR NEW GW WELLS	ESTABLISHES SPECIFIC REQUIREMENTS FOR WELL CASINGS, SUCH AS SUITABLE MATERIAL, DIAMETERS AND CONDITION.	PERTAINS TO ALL GROUND WATER WELLS ON THE SITE THAT EITHER WILL BE INSTALLED OR HAVE BEEN INSTALLED SINCE FEB. 15, 1975. WOULD PERTAIN DURING THE FS IF NEW WELLS ARE CONSTRUCTED FOR TREATABILITY STUDIES.	3745-9-01	ACTION			

CATEGORY	ORC	OAC	PERTINENT PARAGRAPH	TITLE OR SUBJECT OF REGULATION	DESCRIPTION OF REGULATION	APPLICATION OF REGULATION	REF	ARAR TYPE 1	ARAR TYPE 2	FEDERAL REGULATION	LAST REVISION
GW		3745-9-07	A-F	SURFACE DESIGN OF NEW GW WELLS	ESTABLISHES SPECIFIC SURFACE DESIGN REQUIREMENTS, SUCH AS HEIGHT ABOVE GROUND, WELL VENTS, WELL PUMPS, ETC.	PERTAINS TO ALL GROUND WATER WELLS ON THE SITE THAT EITHER WILL BE INSTALLED OR HAVE BEEN INSTALLED SINCE FEB. 15, 1975. WOULD PERTAIN DURING THE FS IF NEW WELLS ARE CONSTRUCTED FOR TREATABILITY STUDIES.	3745-9-01	ACTION			
GW		3745-9-08	A,C	START-UP & OPERATION OF GW WELLS	REQUIRE DISINFECION OF NEW WELLS AND USE OF POTABLE WATER FOR PRIMING PUMPS.	PERTAINS TO ALL GROUND WATER WELLS ON THE SITE THAT EITHER WILL BE INSTALLED OR HAVE BEEN INSTALLED SINCE FEB. 15, 1975. WOULD PERTAIN DURING THE FS IF NEW WELLS ARE CONSTRUCTED FOR TREATABILITY STUDIES.	3745-9-01	ACTION			
DW		3745-9-09	A-C,D1,E-G	MAINTENANCE & OPERATION OF GW WELLS	ESTABLISHES SPECIFIC MAINTENANCE AND MODIFICATION REQUIREMENTS FOR CASING, PUMP AND WELLS IN GENERAL.	PERTAINS TO ALL GROUND WATER WELLS ON THE SITE THAT EITHER WILL BE INSTALLED OR HAVE BEEN INSTALLED SINCE FEB. 15, 1975. WOULD PERTAIN DURING THE FS IF NEW WELLS ARE CONSTRUCTED FOR TREATABILITY STUDIES.	3745-9-01	ACTION			
GW		3745-9-10	A,B,C	ABANDONMENT OF TEST HOLES & GW WELLS	FOLLOWING COMPLETION OF USE, WELLS AND TEST HOLES SHALL BE COMPLETELY FILLED WITH GROUT OR SIMILAR MATERIAL OR SHALL BE MAINTAINED IN COMPLIANCE OF ALL REGULATIONS.	PERTAINS TO ALL GROUND WATER WELLS ON THE SITE THAT EITHER WILL BE INSTALLED OR HAVE BEEN INSTALLED SINCE FEB. 15, 1975.	3745-9-01	ACTION			
GW		3745-9-11		USE OF WELLS FOR DISPOSAL	NO PERSON SHALL USE ANY WELL TO INJECT OR REINJECT ANY SUBSTANCE INTO THE GROUND WITHOUT NECESSARY PERMITS.	MAY PERTAIN TO SYSTEMS THAT ENTAIL INJECTION OR REINJECTION OF FLUID INTO THE GROUND. CONSIDER FOR IN-SITU BIOREMEDIATION, SOIL FLUSHING AND GROUND WATER PLUME CONTAINMENT.	3745-34-06	ACTION			3/19/93

P

OPTION A

REVIEW OF NEW SOURCES OF AIR TOXIC EMISSIONS

Ohio Environmental Protection Agency
Division of Air Pollution Control
1800 WaterMark Drive
Columbus, Ohio 43215

REVIEW OF NEW SOURCES OF TOXIC EMISSIONS

Synopsis

The following is a summary of the Ohio Environmental Protection Agency (EPA) policy for the control of toxic air emissions.

1. Determine if a threshold limit value (TLV) exists for the specific compound which is emitted from the source.

2. Divide the TLV by ten to adjust the standard from the working population to the general public (TLV/10).

3. Adjust the standard to account for the duration of the exposure (operating hours of the source) of "X" hours per day and "Y" days per week from 8 hours per day and 5 days per week. This formula is used to obtain the Maximum Acceptable Ground-Level Concentration (MAGLC).

$$\left(\frac{TLV}{10} \times \frac{8}{X} \times \frac{5}{Y}\right) = 4\frac{TLV}{XY} = MAGLC$$

4. The Director may, on a case-by-case basis, accept an alternate analysis from a new source applicant.

Introduction

The basis for the air program's activities have been based upon the ambient air quality standards for "criteria pollutants." These standards, designed to protect health and welfare, have been established by U.S. EPA for the following six (6) pollutants:

1. Total suspended particulates,
2. Sulfur dioxide,
3. Carbon monoxide,
4. Nitrogen dioxide,
5. Ozone, and
6. Lead (Pb).

Emission limitations for new and existing sources have been established under the federal National Emission Standards for Hazardous Air Pollutants (NESHAPs) for the following pollutants:

1. Vinyl chloride,
2. Asbestos,
3. Beryllium,
4. Mercury,
5. Benzene, and
6. Arsenic (proposed).

The federal New Source Performance Standards (NSPS) also address several additional pollutants which are:

1. Fluorides,
2. Sulfuric acid mist,

3. Hydrogen sulfide, and
4. Reduced sulfur compounds.

For new sources, the Permit to Install rules require the application of Best Available Technology, and emissions of non-specified contaminants can be controlled through this mechanism. However, this level of review may not be adequate for toxic emissions. U.S. EPA has been slow to promulgate NESHAPs for additional pollutants. In order to assist in the review of new sources of toxic contaminants, the following policy has been developed by the Air Quality Modeling and Planning Section of the Division of Air Pollution Control.

Background and Rationale

The American Conference of Governmental Industrial Hygienists (ACGIH) has been involved with the safety aspects of work places where individuals may be exposed to varying levels of toxic substances. The ACGIH publishes and continuously updates a list of "Threshold Limit Values" (TLVs) for many substances. These TLVs represent maximum concentrations under which it is believed that nearly all workers may be repeatedly exposed, day after day, without adverse effects. Most of the TLVs refer to time-weighted average concentrations for a normal work day, with certain excursions within limits permissible during that time period, as long as the weighted average is not exceeded. However, for certain substances, there are levels that should not be exceeded at any time.

As outlined below, there are certain limitations and dangers in the literal application of TLVs for air pollution control purposes.

1. Threshold Limit Values are based on the information gathered in industrial/commercial settings, through experience from medical research and practice, from experimental human and animal studies, and also from a combination of these sources. Only in a few instances have the values been established firmly on a basis of examinations of human subjects correlated with extensive environmental observations.

2. The TLVs were determined for a population of workers who are essentially healthy and who fall within a "working age group" of about 17 to 65 years.

3. Synergistic effects of mixtures of substances are not considered in the development of TLVs, although the TLVs for mixtures can be calculated via the appropriate formula.

4. Individuals vary in sensitivity or susceptibility to toxic substances.

5. Often a single value is given for substances which occur in different forms and may have different toxicities.

6. For most contaminants, a worker during a normal work schedule (8 hours per day, 5 days per week) receives 40 hours of exposure per week with daily and weekend periods in which the body may rid itself of the accumulated substances before toxic levels are reached. For a person living continuously in an environment containing such substances, however, these recovery periods do not exist. Exposure to TLV levels may, therefore, subject the person to an unacceptably high risk of injury.

In setting ambient goals for toxic substances, two time periods must be considered.

1. <u>Duration of Exposure</u> - This is the amount of time a person spends in contact with a toxic substance. (In this application, it is assumed that a person may continuously be exposed to the specific contaminants during the operating hours of a source.)

2. <u>Averaging Time</u> - This time period is used to measure compliance with the standard.

For example, the OSHA TLVs have a maximum allowable duration of exposure of 8 hours/day and 40 hours/week, but an averaging time of 8 hours for determining compliance with the rules. Similarly, the ambient lead standard has a continuous duration of exposure, but a quarterly averaging time for determining compliance. Also, the ACGIH publishes acceptable ceiling concentration values within an 8-hour

workday, and acceptable maximum peak concentrations for a short period of time, in addition to the time-weighed 8-hour weekday.

Determination of Maximum Acceptable Ground-Level Concentration (MAGLC)

Taking into account the duration of exposure and averaging time, the following stepwise procedure should be used to determine the allowable ambient air concentration for a toxic substance:

1. Determine if a TLV exists for the specific compound which is emitted from the source.

2. Divide the TLV by ten (10) to adjust the standard from the working population to the general public (TLV/10).

3. Adjust the standard to account for the duration of the exposure (operating hours of the source) of "X" hours per day and "Y" days per week from 8 hours per day and 5 days per week.

$$\left(\frac{TLV}{10} \times \frac{8}{X} \times \frac{5}{Y}\right) = 4\,\frac{TLV}{XY}$$

4. The TLVs are based on an averaging time of 8 hours per day. The standard method of determining the ambient air quality effect of the source is through dispersion modeling. The most readily adaptable averaging time for dispersion models is generally one hour. The approvability of a source will be based on the

predicted one-hour averaging time (under worst-case meteorology) in comparison to the MAGLC obtained from Step 3. If the impact of the source is greater than the MAGLC, additional measures by the source will be necessary before the Permit to Install can be issued. Because no adjustment is made to the formula in Step 3, an additional safety factor of approximately 30% is produced (see Appendix A for the derivation of the 30% safety factor).

$$MAGLC = \frac{4\ TLV}{XY}$$

By using a factor of 10 in Step 2 and by decreasing the averaging time in Step 3, the TLV has been adjusted for the greater susceptibility of the general population in comparison to healthy workers.

The 8/X and the 5/Y multipliers in Step 3 are used to relate the exposure to longer than 40-hour time periods and ascertain that the individual's total exposure will be no greater than that allowed by the TLV.

For less than 40 hours per week of plant operation, the MAGLC formula will yield a value greater than the TLV/10. Although excursions of up to three times the TLV can be calculated in some cases, it does not appear reasonable to permit this situation for the general population. A condition on the formula is,

therefore, necessary to limit the allowable concentration to TLV/10 for operating times less than 40 hours per week.

Thus, from the above analysis, the derivation of the maximum acceptable ground-level concentration (maximum one hour average) beyond the plant boundary of a continuous emitting source would be:

$$MAGLC = \frac{TLV}{10} \times \frac{8 \text{ hours}}{24 \text{ hours}} \times \frac{5 \text{ days}}{7 \text{ days}} = \frac{TLV}{42}$$

An example of this procedure is contained in Appendix B.

The application of the policy is for use as a guideline in the review of new source applications. There may be cases where the TLV values are inappropriate for this type of application. The Director may consider, on a case-by-case basis, other data in the determination of a Maximum Acceptable Ground-Level Concentration from a new source.

Comparisons of MAGLC to National Ambient Air Quality Standards Values

In order to determine the relative stringency of this procedure, a comparison was made using this method with the National Ambient Air Quality Standards (NAAQS) for sulfur dioxide and ozone, and with the NESHAP for beryllium:

A. Sulfur Dioxide

For a continuously emitting sulfur dioxide source, the acceptable one-hour ground-level concentration would be:

$$MAGLC = \frac{(4)(TLV)}{(X)(Y)} = \frac{(4)(5\ ppm)}{(24\ hr/day)(7\ days/week)} = 0.12\ ppm$$

Under the NAAQS, the three-hour standard is 0.5 ppm, not to be exceeded more than once per year.

B. Ozone

For an intermittent ozone source operating three hours per day, five days per week, the allowable impact would be:

$$MAGLC = \frac{(TLV)}{(10)} = \frac{.1\ ppm}{10} = 0.01\ ppm$$

The NAAQS for ozone is 0.12 ppm one-hour average, not to be exceeded more than once per year over a three-year period.

APPENDIX A

The vertical (σ_z) and horizontal (σ_y) dispersion parameters utilized in most gaussian models were developed by Pasquill[1] and modified by Gifford[2]. Although the original experiments were based on a ten-minute sampling time, in practice, σ_y and σ_z values are considered to represent dispersion for a one-hour average. Due to wind direction fluctuations and variations in wind speed, it is necessary to adjust predictions which are greater than one-hour to account for these meteorological phenomena. To apply the predictions to longer than a one-hour period, the following equation is suggested by Turner[3]:

$$X_s = X_k \frac{(t_k)}{(t_s)}^p$$

Where

X_s is the concentration predicted over an averaging time t_s,

X_k is the concentration predicted over an averaging time t_k, and

p is a constant and should be between 0.17 and 0.2.

---

[1] F. Pasquill, "The estimation of the dispersion of windborne material," Meteorological Magazine, Vol. 90, 1961, pp. 33-49.

[2] F.A. Gifford, "Use of routine meteological observations for estimating atmospheric diffusion," Nuclear Safety, Vol. 2, 1961 p. 47.

[3] D.B. Turner, "Workbook of Atmospheric Dispersion Estimates," Office of Air Programs Publication, No. AP-26, U.S. EPA, Research Triangle Park, North Carolina, 1970.

As shown below, applying this equation to the case of estimating an eight-hour average concentration, the one-hour predicted concentration should be reduced by 32%.

$$\frac{X_s}{X_k} = \frac{(t_k)^p}{(t_s)}$$

$$\frac{X_s}{X_k} = \frac{(1)}{(8)}\ 0.185$$

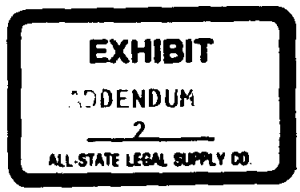
$$\frac{X_s}{X_k} = 0.680$$

By not allowing for this adjustment when reducing the averaging time from eight-hours to one-hour in step 4, an aditional safety factor of 32% is realized.

RESUMES OF:

Ann D. Christy, Ph.D., P.E.
Julie P. Weatherington-Rice
Truman W. Bennett
Steven Williamson
Ming Zhang
Duane A. Carey, C.P.G.
Linda Aller

OF BENNETT AND WILLIAMS



Ann D. Christy, Ph.D., P.E.

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Education

Ph.D., Environmental Systems Engineering
Clemson University, August 1991
Specialization: Hydrogeology
Dissertation title: "Ground water vulnerability assessment and agricultural chemical management policies in the South Carolina Piedmont."

M.S., Biomedical Engineering
The Ohio State University, December 1985
Specialization: Bioengineering / Bioremediation
Thesis title: "Models of a biological process for mercury decontamination."

B.S., Agricultural Engineering
The Ohio State University, June 1983

Major Fields of Specialization

Primary interests include *in-situ* bioremediation of soil and water contamination, solid and hazardous waste management, hydrogeology, engineered remediation system design, modeling of environmental fate and transport of agricultural and industrial chemicals, environmental geochemistry, and geographic information systems (GIS).

Professional Registration and Certification

- Registered Professional Engineer (Civil Engineering), State of Ohio
- OSHA Certification: Health and Safety for Hazardous Waste Site Operations (40-hr)
- OSHA Certification: Permit Required Confined Space Operations

Professional Experience

Senior Associate Engineer and Scientist, Bennett and Williams Environmental Consultants, Columbus, OH (1999-present).

Assistant Professor of Biosystems Engineering, Department of Food, Agricultural, and Biological Engineering, The Ohio State University, Columbus, OH (1996-present).

Senior Engineer, Killam Associates Consulting Engineers, Millburn, NJ (1992-1996). Project work included the design of ground water and soil remediation and treatment systems; numerical simulation of ground water flow and subsurface contaminant transport; construction dewatering design; storm and sanitary sewer system design; septic field design; municipal water supply wellfield design; geochemical modeling; and field investigations at Superfund sites, industrial facilities, landfills, and underground storage tank sites. Some specific projects are described below:

Reviewed remediation plans and specifications prepared for the Lipari Landfill Superfund site in Pitman Borough, NJ, on behalf of the affected residential community. Presented the community's concerns to the USEPA, Region II. This site was the #1 site on the National Priorities List when that list was first promulgated.

Assisted in designing and writing the sampling and field investigation plan as part of a Remedial Design Workplan for Hertel Landfill, a Superfund site in upstate New York. Assisted in designing, conducting, and analyzing two 48-hour aquifer tests. Modeled and numerically simulated the site hydrology, including ground water, streams, ponds, and wetlands, to investigate the effects of various landfill cap options on infiltration and contaminant transport.

Assisted in the remedial investigation and bioremediation design for a petroleum contaminated site. Headed the field surveying team. Performed and analyzed aquifer tests. Modeled and analyzed the complex fractured multiple-aquifer system. Drafted hydraulic cross-sections. Designed on-site pilot bioventing tests. Provided the preliminary design of the bioventing remediation system.

Developed a contaminant transport model to simulate the migration of a subsurface petroleum hydrocarbon plume. The modeling results were instrumental in securing regulatory approval of a natural bioremediation compliance plan for the site.

Current Research Program

1. Landfill bioreactors (Leachate recirculation and co-disposal of sewage sludge to enhance bioremediation of landfill materials): This is a joint project with the City of Columbus Sewerage and Drainage Division and the Solid Waste Authority of Central Ohio to study innovative landfill operation methods where landfills could be run as anaerobic solid state bioreactors. The study involves both laboratory-scale (small columns and large 2 yd^3 bins) and eventually pilot scale landfill cells. Managing municipal solid waste facilities as bioreactors would increase the capacity and working life of existing landfills, provide a beneficial use for waste sludge, lessen the risk of contaminant transport off-site, and thereby reduce the health risk presented by landfills to neighboring communities.

2. Hydrogeology of fractured aquifer systems: Widespread fractures and joints have been documented in Ohio's geological and soils literature. Investigations into failing and non-compliant landfills in the state indicate that fracturing in the clays beneath these sites may be the leading cause of failure in their containment structures. The persistence of these fractures and their critical importance in contaminant transport make research into the hydrogeology of fractured environments vital. This project is a multidisciplinary team effort to study why and how fractures form, to develop methods to quantify and model subsurface fractures and water movement through them, and to communicate their significance to the planners and decision makers who will have to evaluate the future land uses in light of Ohio's fractured landscape. Dr. Christy provides the bioenvironmental

engineering expertise to this team, and has been the principle designer of multiple-tiered field test pits to assess fracturing on a site specific basis.

Teaching Curriculum

Pollution Control and Waste Utilization (ACSM550): Management and utilization of animal wastes, fertilizers, pesticides, crop residues, milk, and food processing wastes, and farmstead and urban solid wastes to abate environmental pollution at the urban-rural interface.

Modeling and Design of Biological Systems (FABE 625): Bioengineering of systems which include microbial, plant, and animal components. Applications include bioremediation, fermentation, composting, and livestock waste management.

Environmental Engineering of Agricultural Structures (FABE 645): Design of heating, ventilation, and air conditioning systems for agricultural structures.

Publications

Christy, A.D., M.J. Myers, W.R.B. Gagliano, and O.H. Tuovinen. 1999. Solid-state bioreactor design for laboratory-scale landfill studies. Fifth International In Situ and On-Site Bioremediation Symposium. (in press).

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Myers, M.J., A.D. Christy, O.H. Tuovinen, A.J. Iosue, R.A. Stanley, and T.H. Marshall. 1998. Design of a laboratory-scale landfill bioreactor. *Proceedings of the Institute of Biological Engineering* 1:C27.

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formed, and why they persist. *Proceedings: Mass Transport in Fractured Aquifers and Aquitards* invitational conference, Copenhagen, Denmark. pp. 66-69.

Weatherington-Rice, J., L. Aller, T. Bennett, A.D. Christy, J. Bigham, G. Hall, M. Angle, S. Brockman, E. Miller, L. Tornes, N. Fausey, and J. Gerken. 1998. Research and educational outreach efforts relating to fracture formation and water/contaminant transport in Ohio. *Proceedings: Mass Transport in Fractured Aquifers and Aquitards* invitational conference, Copenhagen, Denmark. pp. 101-104.

Papritan, J.C., A.D. Christy, and M. Owens. 1998. *Barn Aid #4: Barn Roofs.* National Trust for Historic Preservation. Meredith Corporation Publishers. Denver, CO. 8 p.

Christy, A.D. and M. Lima. 1997. The use of student portfolios in biological engineering instruction. *1997 ASEE Annual Conference Proceedings*, American Society of Engineering Education.

Christy, A.D. and R.K. White. 1992. Environmental policy and decision making at hazardous waste sites in the Piedmont of South Carolina. In *Ground Water in the Piedmont.* C.C. Daniel, R.K. White, and P.A. Stone, ed. Clemson University, Clemson, SC, pp. 66-75.

Christy, A.D. 1992. Abstract: Ground water vulnerability assessment and agricultural chemical management policies in the South Carolina Piedmont. *Ground Water* 30(1):121.

Christy, A.D. 1992. Managing agricultural chemical use to protect ground water. *Geo Info Systems* 2(7):36-39.

White, R.K., A.W. Badr, and A.D. Christy. 1988. Groundwater Resources Assessment of the Piedmont Region in South Carolina. Water Resources Research Institute, Clemson University, Clemson, SC, Technical Report No. 129, 59 pp.

Christy, A.D., V.I. George, M.A. Burstein, and C.L. Hansen. 1986. Modeling of a biological process for mercury detoxification. In *Food Engineering and Process Applications, Vol. I: Transport Phenomena.* M. LeMaguer and P. Jelen, ed. Elsevier Applied Science Publishers Ltd., Barking, England, pp.389-397.

Awards

1999 Fellow of the Ohio Academy of Science.
1998 OSU Departmental Teaching Award
1992 Water Environment Federation Paper Competition
1991 Institute for GIS (Geographic Information Systems) in Education Award

Statement of

THE BOARD OF LAKE TOWNSHIP TRUSTEES

U.S. EPA Public Hearing Regarding the Uniontown Industrial Excess Landfill
March 2, 1999

We have come tonight bringing with us the hope that our input will be considered seriously, and that this meeting will turn out to be more than an obligatory hearing that must be held to comply with legal requirements. It should not have come as a surprise that the Industrial Excess Landfill became controversial when it was first discovered that it was located in the middle of a town. It has become a cancer on the landscape of our township.

As citizens, what do we know? For one thing, we know what the EPA's own experts have said in the past. As recent as 1995, Linda Kern, U.S. EPA, wrote a very detailed report **refuting the PRP's statement** that nothing need be done at this site. This report is very explicit that data up to July 1995, at least, made it clear that:

1. **This was a dangerous superfund site**
2. **A 1 to 2 foot separation between wastes and water was not acceptable,**
3. **This site came under RECRA Subtitle C with regard to the requirements**
4. **The PRP's were wrong when they stated the maximum contamination levels had gone down when in some instances those levels had in fact gone up**
5. **One full year of quarterly sampling data is necessary to accurately assess groundwater conditions**

and on and on. Anyone reading the Kern report would have to agree that up to July of 1995 certain serious factors were being considered, and answers to a number of very important questions had to be given before the ROD could be changed.

Now we jump ahead to March of 1997 – **one round of testing** – done by the PRP's and sent to a non-certified lab, **has changed everything that happened before**. The PRP's have remained constant in their opinion that nothing need be done at the site, and we can expect that. What we did not expect is that now the EPA has agreed! Is this March 19, 1997 test the new information referred to in the fact sheet released to the public?

In 1992, the EPA commissioned Clean Sites to make an independent study of this site. This report states clearly that in all testing, especially at a controversial site, **split samples must be taken** and **blind sampling must be done**. The Scientific Advisory Board, in their report, also stated **"verification of a lab should be done by a pre-award audit and by submitting blind samples to test the lab's reliability**. Having the polluters sample and then send samples to a non-certified lab of their choice is hardly blind testing!

On December 17, 1997, Mr. Ross del Rosario wrote to the PRP's laboratory stating "**in order to estimate the rates of natural attenuation to a degree suitable for assessing its contribution for achieving site goals, pertinent data must be collected in a time series of at least five significant time points at a number of sampling stations**." Again, such comments from U.S. EPA hardly condone the one shot testing that is now apparently being promoted.

This letter also casts serious doubts on the PRP's conclusions that there is no problem with the MCLs. The letter states in part: **"Tables show steady increases in concentrations from 1988-1997 for benzene and chloroethane in shallow wells, 1,1-dichloroethane, 1,2-dichloroethane and benzene in intermediate wells, and 1,1-dichloroethane and 1,2-dichloroethene in bedrock wells." "It is noted that these compounds are intermediate degradation products of chlorinated COCs, not end products. In some cases, these compounds are more toxic to human health than the parent compounds". "Cadmium, lead, arsenic,**

antimony, thallium and nickel are reported at concentrations higher than MCLs in every monitoring well", and again...on and on. In March of 1998, Dr. Mary Randolph stated in a letter that data **"suggests that the contamination plume could further expand, resulting in the contamination of ground water downgradient"** and that **"natural attenuation appears to be incompetent to reduce some toxic metals below MCLs in the ground water."** Interestingly, in Mr. del Rosario's instructions to both Dr. Mary Randolph and Dr. Luanne Vanderpool, he pointed out that monitoring wells 12 and 20 were considered as background wells. You will also notice in the fact sheet those wells are pointed out as background wells. He went so far as to state, regarding those same wells, that they **"suggest that certain metals occur naturally at elevated levels."** What he does not mention is that the Science Advisory Boards' report, which seemingly has become the EPA's Bible, clearly states that "**these two wells (12 and 20) would not be adequate to characterize the mean and variability of background radionuclide concentrations"...."given the radial nature of ground water flow at the IEL site,..."the two wells are clearly inadequate for characterizing background. Data from MW20 is particularly suspect, given the site flow patterns. This would also be true if the flow pattern were simple."** Yet here we are, several years later, with everyone being told that these same wells are to be used as the background wells. **WHAT ARE WE MISSING?**

We are told not to worry because more monitoring wells may be dug to determine future contamination problems. However, the whole issue is going to press using those suspect wells which the SAB has clearly stated are inadequate for such use.

In December of 1997, in a critique of the 1997 water tests, Mr. Lawrence Antonelli, Site Coordinator, wrote to Mr. del Rosario "**OEPA does not have any reason to believe that future releases of heavy metals will not occur**." ..."**metallics were found at very high concentrations in nearly all of the off-site**

monitoring wells."...."**Historical ground water data do not entirely demonstrate trends of decreasing contaminant concentrations over time for all monitoring points.**"....Not only was the data called into question, but so was the cap cover.

The EPA publication entitled "A Citizens Guide to Natural Attenuation" states "**Because the ability of natural attenuation to be an effective cleanup method depends on a variety of conditions, the site needs to be well-characterized to determine if natural attenuation is occurring or will occur.**"

Speaking of characterization of wastes, early in the program both TAG grant experts repeatedly called for core samples at the site. In the SAB report cores were referred to throughout the entire report. The report states **"The scientific studies used by the Agency to support the selection of a ground water monitoring program, and not a soil core sampling program, are summarized in correspondence from Region 5 Valdas Adamkus to Senator John Glenn. (1990-1991) Each letter includes a technical report; the first demonstrating the unfeasibility of the core monitoring program, and the second supporting the adequacy of ground water monitoring. Both of these reports include technical flaws and provide no clear evidence that ground water monitoring is more sensitive in detecting the presence of radioactive material in the landfill than would be a solid core sampling program"** For years CCLT has been calling for cores to be done. Now, after all these years, we hear from Mr. Kern of the Ohio Attorney General's office, who asks, **"what do you mean by cores?"** When I asked Mr. del Rosario the same question when he visited the township office, he also responded, **"What do you mean by cores?"** Perhaps they could speak with the TAG consultants or the SAB panel for their answer.

So, we have **reports** dated 1995, 97 and 98 **from EPA's own technical people**, added to what past TAG grant experts and others have said, and I believe

the inconsistencies are enough to warrant a rethinking of the new proposed remedy.

These years have been exhausting and frustrating for township officials and the community leaders. No one desires a healing of this environmental cancer more than we do. Our hope is that you will seriously consider our concerns and render a proper verdict

Lake Township will submit written comments to be entered into the administrative record.

CCLT	Concerned Citizens of Lake Township
MCL	Maximum Contaminant Level
OEPA	Ohio Environmental Protection Agency
PRP	Potentially Responsible Parties
ROD	Record of Decision
SAB	Science Advisory Board

JULIE P. WEATHERINGTON-RICE

Bennett & Williams

EDUCATION

BS EARTH SCIENCES EDUCATION - The Ohio State University, 1974
MS GEOLOGY - The Ohio State University, 1978
Ph.D. Soil Science and Geographic Information Systems - School of Natural Resources - The Ohio State University, in progress
Approved Dissertation topics: (working titles)
Ohio Journal of Science Special Issue on Till Fractures; The History of Landfill Siting in Ohio; GIS on a Shoestring – Establishing a GIS System for the Franklin Soil & Water Conservation District

FIELDS OF SPECIAL COMPETENCE

Geomorphology, stratigraphy and hydrogeology and mapping with special emphasis on Pleistocene geomorphology, materials (both soils and parent) and ground water movement investigations with GIS systems applications; Ground-Water Protection; Aquifer Characterization and Modeling; Wellfield Development; Solid, Hazardous, and Radioactive Waste Landfill Siting studies. Land Use Planning, including River Basin and Watershed Evaluations and Raparian Corridor Evaluations and Restorations; Sole Source Aquifer Designations; Wellhead Protection; Regional Planning; Stormwater Management; Landslide and Sedimentation Evaluations; Strip-Mine Reclamation. Presentations and training sessions on Ohio Geology; Ground Water Protection; Landfill Siting Criteria, Fractured Till, Stormwater Delivery and Management, Applications of GIS (data and mapping) to Water and Land-Use Planning Projects, Earth Science and Water Education, and related subjects.

EXPERIENCE

Typical Projects with Responsible Charge:

Northern Clark County Ohio

Extensive evaluation of the soils, glacial materials and routes for surface and ground-water contaminant migration from the proposed Clarkco Solid Waste Landfill into the underlying 100+ gpm sand & gravel aquifer and the adjacent Mad River Buried Valley Aquifer, part of the Great Miami Buried Valley Sole Source Aquifer. Evaluation included review of the proposed siting and design as it relates to Ohio's Solid Waste Siting Criteria; construction of an observation pit and identification of springs and seeps in the surrounding surface waterways; development of a GIS presentational format for agency, court and public education presentations; successful presentation of the site's limitations to the Environmental Review Appeals Commission (PTI remanded back to Ohio EPA). Preliminary investigation of the neighboring closed, failing and in remediation Tremont Landfill and the adjacent closed hazardous waste barrel fill as they relate to the proposed Clarkco Solid Waste Landfill and to regional surface and ground water contamination. Clients and cooperating agencies for this effort included the Clark County Commissioners, the City of Springfield, the Clark County Health Department, the Clark County Solid Waste District, the Clark County Prosecuting Attorney's Office, the German Township Trustees and local citizens.

Canal Winchester, Ohio

Surface water, stormwater runoff, ground water, public water supplies, and soils evaluation as they relate to land-use planning for Canal Winchester's new long range planning effort. Relationship of stormwater runoff to changes in land-use and disruption of soils. Impacts of land-use changes to down stream flooding frequencies and elevations. Current locations for ground-water recharge, maintaining the sustainability for well fields by managing stormwater detention/retention to augment ground-water recharge, targeting new development areas to preserve recharge capabilities. Identification of future well fields and planning for their preservation. Federal, State and local rules, programs and regulations that affect these issues. Identification of watershed partners, shared benefits, and non-traditional funding structures.

Franklin Soil & Water Conservation District

Systems analysis, systems design, coordination of funding, purchase specifications for hardware and software, staff hiring and training, data layer acquisition and creation, interagency coordination and ongoing oversight of the District's new GIS system. District representation and coordination for the Franklin County Greenways Project including involvement on the steering, technical, GIS subcommittee, and appropriations committees, contractual arrangements and oversight of the ODNR NatureWorks grant portion of the project.

Ongoing responsibility for or coordination of special ground water, surface water, sediment and erosion controls and soils investigations and training sessions in the county. Projects have been as diverse as the 1993 Drought inventory for portions of Plain and Jefferson Townships; an analysis of surface and ground water and soils and land-use development impacts on Pickerington Ponds; and coordination with and technical support for the City of Columbus on soil and water issues for their long range planning program. Periodic training sessions on USDA's Urban Hydrology for Small Watersheds.

East Central Ohio

Solid Waste District Management plan for a four county area (Licking, Fairfield, Perry and Coshocton). Evaluation of the current solid waste management needs and capabilities of the district. Identification of future facility shortfalls. Establishment of facilities siting criteria through group decision mechanisms. Presentation of plan in public meetings and hearings. Additional independent evaluation of the existing conditions and management efforts at one of the landfills in the District.

Dayton, Ohio

Ground Water Management plan for a five county area (MVRPC). Evaluation of ground-water resources throughout five counties, including assessment of pollution potential, ground-water use and availability, land-use planning, and geologic mapping. Development of database for management of ground-water resources use and protection. Numerous additional independent mapping, land-use suitability, surface, and ground water contamination studies in the region for local government and private clients.

Cincinnati, Ohio

Ground Water Management plan for a four county area (OKI). Evaluation of ground-water resources throughout four counties, including assessment of potential sources of pollution; status of ground-water resources throughout four counties, including assessment of potential sources of pollution; status of ground-water monitoring; and development of a master plan for the implementation of the regional ground-water

protection strategy. Additional independent mapping, land-use suitability, surface and ground water contamination studies in the region for local governments.

Allen County, Ohio

Geologic and hydrogeologic evaluation of the suitability of proposed solid waste landfill site overlying the wellhead protection area for the local community. Presentation of findings to Ohio EPA. Preparation of a successful Sole Source Aquifer Designation Petition for portions of five counties in the region. Continued support of SSA in local and regional land-use issues.

Oregon, Ohio

Geologic investigations (geologic mapping and the identification of surface and subsurface routes for contaminant migration, analysis of contaminant parameters) of the Envirosafe Hazardous Waste Landfill site and the surrounding region for the City of Oregon. Presentation of the geologic findings to the Hazardous Waste Siting Board of Ohio, Ohio EPA and US EPA.

Madison County Ohio

Glacial and hydrogeological evaluation of stratified glacial valley deposits (Teays River Valley) over an 85 square-mile area, including one of the first non-agency applications of computer-flow modeling (Modflow) in Ohio for the development of a major wellfield. Field collected data became the core for the first Groundwater Pollution Prevention Map (DRASTIC) created in Ohio.

Columbus, Ohio

Geologic and hydrologic evaluation of the southern portion of Franklin County for a variety of projects. These include evaluation of the Southerly Wastewater Treatment Plant construction dewatering of the water supply for the community of Shadeville, Ohio; Pleistocene depositional sequence identification, mapping and evaluation for the City of Columbus South Wellfield to help determine the sustainable yield for the wellfield; Pleistocene depositional sequence identification, mapping and evaluation to develop the input code for a regional ground-water model.

Franklin, Fairfield, Licking and Ross Counties Ohio

Drilling, surface soils and subsurface geologic, and hydrogeologic investigations of a number of locations in the four counties over the buried Teays River Valley mainstem in Ross County to southern Franklin County and Teays age tributaries including the Newark River located in southern Licking County, northern Fairfield County and southern Franklin County. Investigations have centered on locating and developing new well fields, installing new wells in existing well fields and developing wellhead protection programs for both new and existing well fields. All are public water supplies but ownership ranges from rural water supplies to county-owned water supplies to municipal water supplies with more limited distributions.

Miami-Erie Canal

Land-use and surface-water drainage evaluation of a 40-mile stretch of canal, including historical research and public works planning. Continuing involvement as canal lands have transferred to ODNR and have been prioritized for reconstruction and maintenance.

Maumee Watershed Conservancy District

Assistance with a variety of projects including evaluation and guidance in the preparation of a sub-district petition for the West Branch St. Joseph River in Williams County and the investigation of a private well contamination complaint in Van Wert County.

Reily, Ohio

Geologic and hydrogeologic evaluation of the suitability of a proposed solid waste landfill site for the local community, including observation of site drilling; pumping test; and presentation of findings to Ohio EPA hearing panel.

***State of* Ohio Agencies**

Development of presentations and training sessions on Ohio's Geology, Soils, and GIS Applications including the following:

"Taking First Cut at Landfill Siting" for the Ohio Federation of Soil and Water Conservation Districts;

"Ground Water - Ohio's Buried Treasure" for the Ohio Cooperative Extension Service;

"*Ground-Water Quantity and Quality, It's Relationship to Ohio's Geology*" for the Ohio Department of Health;

"Is There Any Good Way to Site a Landfill-A GIS Approach" for multiple agencies;

"Summer Field Workshop on Joints and Fractures in Ohio Tills: Site Investigation Techniques and Field Hydraulic Measurements" for The Ohio State University (Cooperative Extension), Ohio Dept. of Natural Resources and USDA (Natural Resources Conservation Service and Agricultural Research Service);

"TR# 55, Urban Hydrology for Small Watersheds", USDA Natural Resources Conservation Service's stormwater evaluation system for the Franklin Soil & Water Conservation District.

"GIS Applications for Environmental Planning, Assessment and Decision Making" for Ohio Department of Transportation, Environmental Section.

Guest Lecturer

Ohio State University, School of Natural Resources; Wright State University, Department of Geological Sciences; University of Cincinnati, Institute of Environmental Health.

Public and Private Clients

Site specific geologic investigations of existing solid waste landfills to determine nature and age of deposits on site, to determine suitability for continued use as solid waste landfills, to determine locations and types of monitoring well installations.

Westerville, Ohio

Stormwater management demonstration program, including hydrologic modeling and recalibration of rainfall volumes for storms of record for development of stormwater plan for City.

Central, Ohio

Glacial and hydrogeological evaluation and deposition for the plaintiff in Cline vs. American Aggregate, the landmark case regarding ground-water rights in Ohio.

Scioto River Basin

Evaluation on non-point source sedimentation and nutrient enrichment due to agricultural practices, including 208 planning study.

State of Ohio

Evaluation of several surface-mine reclamation sites, including geologic evaluation, landslide analysis and evaluation of micorbiological treatment of acid seeps, ponds and spoil materials.

Private Clients

Evaluation of geologic and hydrogeologic conditions regarding brine contamination of residential wells resulting from oil and gas brine disposal.

PROFESSIONAL ORGANIZATIONS

Association of Ground Water Scientists and Engineers.
Association of Ohio Pedologists, Distinguished Service Award, 1998.
American Institute of Professional Geologists, Past National Chair, Public Education Comm.
Ohio Academy of Science, Fellow, 1994.
Ohio Alliance for the Environment, Past Board Member.
Ohio Environmental Council, Past Board Member.
Soil and Water Conservation Society, Past Chair Environmental Education Committee, State and National levels.
Water Management Association of Ohio, R. Livingston Ireland Award, 1994, Past Officer, GIS Liaison to the Ohio GIS Conference.

APPOINTED AND ELECTED MULTI STATE, OHIO & COUNTY POSITIONS

Franklin Soil and Water Conservation District Board of Supervisors 1989-1997; District Representative to the Franklin County Greenways Committee, 1994-1997; Associate District Board of Supervisors, 1998 – present.
Freshwater Foundation/Kellogg Foundation, Ground Water Information System (GWIS) to the Great Lakes Region, Ohio Representative, 1992-1995.
Mid-Ohio Regional Planning Commissions Local Government Committee Member 1992-1997.
NASA Mission to Planet Earth, Technology Transfer Coordinator, Ohio Grant, 1994-1997.
Ohio Academy of Science, Lake Plains Working Group (Ohio Fractures in Pleistocene Materials Working Group), Coordinator, 1993-present.
Ohio Dept. of Health Private Water Supply Advisory Board 1983-1991.
Ohio Federation of Soil and Water Conservation Districts Board Member to the Ohio Environmental Council 1993-1997.
Ohio Federation of Soil and Water Conservation Districts Prime Farmland Preservation Task Force 1996-present.

Ohio Federation of Soil and Water Conservation Districts Urban Comm. 1989-1997.
Ohio Inter-Agency Ground Water Advisory Council, Executive Committee 1987-1994.
Ohio Oil and Gas Regulatory Review Commission 1986-1987.
Ohio State University Dept. of Agricultural Engineering Industry and Professional Advisory Group Member 1992-1996.
Walnut Grove Cemetery Advisory Board, City of Worthington and Sharon Township, 1997-present.
Water Management Association of Ohio GIS Liaison to the Ohio GIS Conference, 1996-present

REGISTRATION AND CERTIFICATIONS

American Institute of Professional Geologists - #7433, Geomorphology, stratigraphy and water resources.
Association of Ohio Pedologists – Pedologist.
Commonwealth of Kentucky # 2142
Ohio Facilitator, Project Wet (first training class in Ohio)

PUBLICATIONS AND AUDIO/VISUAL PRESENTATIONS

"Monitoring Landfills", Water Well Journal, July, 1979, Volume 33, No. 7, pp. 49-51.

"A 3-Dimensional Ground-Water Modeling Study for Development of the New Well Field at London Correctional Institute in Madison County, Ohio", Proceedings of the National Water Well Association Conference on Practical Applications of Ground Water Models, August 10-20, 1985, The Ohio State University, Fawcett Center for Tomorrow, Columbus, Ohio, pp. 197-211.

"Regional Ground-Water Management Planning in Ohio" with Truman Bennett, Nora Lake, Ann Shafor, and Ronald Schmidt, 32nd Annual Midwest Ground-Water Conference, Madison, Wisconsin, Oct. 28-30, 1987, Program Abstracts, p. 18.

"Ground Water-Ohio's Buried Treasure" A 45 minute slide-tape presentation for the Ohio Cooperative Extension Service, 1987.

"A Hypothesis for the Deposition of the Lockbourne Sand and Gravel", with Don Clabaugh and Truman Bennett, The Ohio Journal of Science, April Program Abstracts, 1988, Volume 88, No. 2, P.14.

"Establishing a Regional Ground-Water Monitoring Network for Buried Valley Aquifers", with Margo Lindahl and George Roadcap, The Ohio River Basin Consortium for Research and Education, Fifth Annual Scientific Symposium Abstracts, September 6 - 8, 1989, Ohio University, Stocken Center, Athens, Ohio, pp. 30-31.

"Beyond a State Ground-Water Protection Strategy; Where do we go from here?", with Ava Hottman, Proceedings of the National Water Well Association/Association of Ground Water Scientists and Engineers Cluster of Conferences, Ground Water Management and Wellhead Protection Section, February 20-22, 1990, Kansas City Convention Center, Kansas City, Missouri, in press.

"Taking a First Cut at Landfill Siting" a 30-40 minute slide script presentation for the Ohio Federation of Soil and Water Conservation Districts, Urban Committee.

"Pleistocene Stratigraphy of the Knox County Landfill," Karen Voisard and Julie Weatherington-Rice, The Ohio Journal of Science, April Program Abstracts, 1990, Volume 90, No. 2, p. 12.

"Is There Any Good Way to Site a Landfill", Four regional, one day training seminars on landfill siting criteria. January & February 1991, co-sponsored by Ohio Federation of Soil & Water Conservation Districts, ODNR Divisions of Soil & Water Conservation, Miami University, Ohio EPA, Ohio Environmental Council, Ohio Citizen Action, Franklin, Athens, Hancock, Montgomery and Portage Soil and Water Conservation Districts, Miami Valley Regional Planning Commission, Portage Co. Solid Waste District and Bennett & Williams, Inc., Athens, Findlay, Trotwood and Rootstown, Ohio.

"A Geologic, Hydrogeologic and Soils Survey as it Relates to Land Use Development in German Township, Montgomery County, Ohio", with Marc Racine, Peter Lurker and Stephen Dourson, The Ohio Journal of Science, May program Abstracts, 1992. Vol. 92, No. 2, page 20.

"Allen County Area Combined Aquifer System Sole Source Aquifer Proposed Designation", The Ohio Journal of Science, May Program Abstracts, 1992, Vol. 92, No. 2, page 20.

"Ohio's Lake Plains, Their Pleistocene Origin, Post Depositional History and Geotechnical Limitations", with Douglas Hunter and Ronald Trivisonno, The Ohio Journal of Science, April Program Abstracts, 1993, Vol. 93, No. 2, page 38.

"Fracture Flow in Fine-Grained Materials in Northern Ohio - Two Site Investigations", with Michael P. Angle, The Ohio Journal of Science, April Program Abstracts, 1994, Vol. 94, No. 2, p. 7.

"GIS for Land-Use and Water Planning Projections; A Demonstration Project", with John Bateman, Ayman Ismail and Todd Jackson, Geographic Information Systems Applications for Water Resources Conference Abstracts, page 29, May 12, 1994, Holiday Inn, I-670 Conference Center, Fairborn, Ohio, Water Management Association of Ohio, Ohio Section AWRA and NASA.

"How Deep are the Fractures in Ohio's Fine-Grained Materials?", The Ohio Journal of Science, April Program Abstracts, 1995, vol. 95, No. 2, P. A-42.

"Greenways: Bootstrapping Franklin County's GIS System through a County-Wide Waterways Inventory and Preservation Project", Geographic Information Systems Applications for Water Resources; Data, New Applications and Projects Conference Abstracts, page 18, May 16, 1996, Akron Hilton at Quaker Square, Akron, Ohio, Water Management Association of Ohio, Ohio Section of AWRA and NASA.

"Updating Ohio's Landuse/Landcover Data Base: NASA's Grant to Ohio", Gary Schaal, Bruce Mutsch, Ralph J. Haefner and Julie Weatherington-Rice, Geographic Information Systems Applications for Water Resources; Data, New Applications and Projects Conference Abstracts, page 20, May 16, 1996, Akron Hilton at Quaker Square, Akron, Ohio, Water Management Association of Ohio, Ohio Section of AWRA and NASA.

"Fracture Flow in High Clay Content Glacial Materials - Applying the FRACTRAN Model", The Ohio Journal of Science, April Program Abstracts, 1996, Vol. 96, No. 2, pages A-29 to A-30.

"Boston Till Identified as Lower Till of Uplands, West Side of Mad River, Northern Clark County Ohio", The Ohio Journal of Science, Program Abstracts, 1998, Vol. 98, No. 1, Page A-21.

Fractures in High Clay Content Unlithified Glacial Materials in Ohio; Where They are Found, How They are Formed and Why They Persist", with Linda Aller, Truman Bennett, Ann Christy, Jerry Bigham, George Hall, Mike Angle, Scott Brockman, Ed Miller, Larry Tornes, Norm Fausey and Jon Gerken, in Mass Transport in Fractured Aquifers and Aquitards Abstracts, pages 66-69, May 14 to 16, 1998, Geoscience Center, Copenhagen, Denmark, Sponsored by the Geological Institute University of Copenhagen, Geological Survey of Denmark and Greenland, the Danish Geotechnical Institute , Groundwater Group Danish Environmental Research Programme, and GRUNDFOS.

"Research and Educational Outreach Efforts Relating to Fracture Formation and Water/Contaminant Transport in Ohio" with Linda Aller, Truman Bennett, Ann Christy, Jerry Bigham, George Hall, Mike Angle, Scott Brockman, Ed Miller, Larry Tornes, Norm Fausey and Jon Gerken, in Mass Transport in Fractured Aquifers and Aquitards Abstracts, pages 101 to 104, May 14 to 16, 1998, Geoscience Center, Copenhagen, Denmark, Sponsored by the Geological Institute University of Copenhagen, Geological Survey of Denmark and Greenland, the Danish Geotechnical Institute , Groundwater Group Danish Environmental Research Programme, and GRUNDFOS.

"The Use of GIS to Manage, Analyze and Visualize Data Collected During an Investigation of a Proposed Landfill", Anthony Catalano, Ming Zhang and Julie Weatherington-Rice, in Eighteenth Annual ESRI International User Conference Proceedings, Redland, California, 1998, CD ROM.

"Field Workshop on Till Fractures and their Environmental Implications: Research and Educational Outreach on Subsurface Fracture Formation, Water Flow, and Contaminant Transport in Ohio", with Ann Christy, The Ohio Journal of Science, Program Abstracts, 1999, Vol. 99, in press.

TRUMAN W. BENNETT

Bennett & Williams

EDUCATION

BS Geology - University of Dayton, 1955
MS Geology - The Ohio State University, 1962

Clay Mineral Research (Clay-Organic Complexes) 1962-1964; American Chemical Society Fellowship - The Ohio State University

FIELDS OF SPECIAL COMPETENCE

Hydrogeology; Geochemistry; Stratigraphy; Techniques of subsurface investigation and interpretation; Pump test analyses; Infiltration and recharge evaluation; Regional ground water planning and management; Economic analyses of natural resources; Gas and Oil investigation; Dewatering; Slope stability; Solid and hazardous waste management.

SUMMARY OF EXPERIENCE

During the past 40 years, Mr. Bennett has worked in all regions of the United States, portions of the Caribbean, South America, Africa, Australia, Northeast Asia, and the Mid-East. Projects have included the location, design, development and maintenance of high-yield water supplies, typically between 5-150 MGD in size; regional and local ground-water management plans; selection, design and operation of sanitary and hazardous waste landfill sites; management and restoration of contaminated aquifers; drilling technology; strip mine reclamation and mine sealing; dewatering; intake siting and design; and a wide variety of related geotechnical work. The innovative application of state-of-the-art technology to field situations, and hands-on problem solving has been the hallmark of an extensive career.

PUBLICATIONS

Co-author of *"Fractures in High Clay Content Unlithified Glacial Materials in Ohio: Where They are Found, How They are Formed and Why They Persist"* with Julie Weatherington-Rice, Linda Aller, Ann Christy, Jerry Bigham, George Hall, Mike Angle, Scott Brockman, Ed Miller, Larry Tornes, Norm Fausey, and Jon Gerken in Mass Transport in Fractured Aquifers and Aquitards Abstracts, Conference Sponsored by the Geological Institute University of Copenhagen, Geological Survey of Denmark and Greenland, the Danish Geotechnical Institute, Groundwater Group Danish Environmental Research Programme and GRUNDFOS, Copenhagen Denmark, pp. 66-69, 1998.

Co-author of *"Research and Educational Outreach Efforts Relating to Fracture Formation and Water/Contaminant Transport in Ohio"* with Julie Weatherington-Rice, Linda Aller, Ann Christy, Jerry Bigham, George Hall, Mike Angle, Scott Brockman, Ed Miller, Larry Tornes, Norm Fausey, and Jon Gerken, in Fractured Aquifers and Aquitards Abstracts, Conference Sponsored by the Geological Institute University of Copenhagen, Geological Survey of Denmark and Greenland, the Danish Geotechnical Institute, Groundwater Group Danish Environmental Research Programme and GRUNDFOS, Copenhagen Denmark, pp. 101-104, 1998.

Co-author of *"The Importance of Geologic Setting in Bioremediation"* with Linda Aller and Richard E. Cowles in Emerging Technologies in Hazardous Waste Management VI; edited by D. William Tedder and Frederick G. Pohland, pp 77-99, 1996.

Co-author of *"Handbook of Suggested Practices For The Design and Installation of Ground-Water Monitoring Wells"* with Linda Aller and Glen Hackett, Rebecca J. Petty, Jay H. Lehr, Helen Sedoris and David M. Nielsen. Environmental Monitoring Systems Laboratory, Office of Research and Development, U.S. EPA, 396 pp. 1989.

Co-author of *"DRASTIC: A Standardized System for Evaluating Ground-Water Pollution Potential Using Hydrogeologic Settings"* with Linda Aller, Jay H. Lehr, Rebecca J. Petty and Glen Hackett. Robert S. Kerr Environmental Research Laboratory, U. S. EPA, 622 pp. with 11 color maps and corresponding legends, 1987.

Co-author of *"A Cost-Effective Water Supply Alternative for the Chicago Suburban Area: Artificial Ground-Water Recharge"* with Tyler Gass, Jay H. Lehr, Linda Aller, and David M. Nielsen. Water Resources Council of Chicagoland, Chicago, Illinois, 70 pp., 1982.

Co-author of *"Manual of Water Well Maintenance and Rehabilitation Technology"* with Tyler E. Gass, James Miller and Robin Miller. U.S. EPA Grant R805211-02-1, 247 pp., 1981.

"Cooling Water Intakes Utilizing Ranney Collectors or Ranney Intakes" in Larval Exclusion Systems for Power Plant Cooling Water Intakes, Argonne National Laboratory Workshop Proceedings, 1978.

Contributor to *"The Report to Congress, Waste Disposal Practices and Their Effects on Ground Water"*. OWS and OSWMP, U.S.EPA, 1977.

Chairman of Midwestern Committee for Development of Water Well Standards and Co-author of *"Manual of Water Well Construction Practices"*, Environmental Protection Agency Office of Water Supply, EPA-570/9-75-001, 1976.

Co-author of *"A Manual of Law, Regulations and Institutions for Control of Ground Water Pollution"*, with L. E. Sturtz, LL.B, J. R. Hanson, LL.B, W. A. Pettyjohn, Ph.D., and Jay H. Lehr, Ph.D., 1976.

"On the Design and Construction of Infiltration Galleries", Ground Water, Vol. 8, No. 3, pp. 16-24.

PROFESSIONAL ORGANIZATIONS

American Geophysical Union
Association of Ground Water Scientists and Engineers
American Water Works Association
American Association for the Advancement of Science

GEOLOGICAL REGISTRATION

Indiana	#147
Virginia	#298
North Carolina	#585
South Carolina	#291
Florida	#829

OTHER ACTIVITIES

Member of the American Water Works Association Research Foundation Project Advisory Committee on "Development of a Guidance Document on Restoration of Water Supply Wells"

Member of the American Water Works Association Research Foundation Project Advisory Committee on "Development of a Guidance Document on Deep Well Standards".

Appointed to the Blue Ribbon Panel Commission to Report on the Possibility of Siting a Low-level Radioactive Waste Facility in Ohio in Response to the Mid-west Compact. *(The panel promoted public discussions / participation for establishing appropriate criteria for the State of Ohio when considering siting a low-level radioactive waste facility. The panel submitted the report to the Governor and Legislature in September of 1993.)*

AWARDS

R. Livingston Ireland Award - presented by The Water Management Association of Ohio on November 9, 1993. This award is presented to professionals to recognize life long service to the environment and water resource management in the State of Ohio.

Fellow - Ohio Academy of Science

STEVEN C. WILLIAMSON

Bennett & Williams

EDUCATION

B.S., Wright State University, 1976 - Environmental Health
M.S., Wright State University, 1989 - Hydrogeology

SUMMARY OF EXPERIENCE

Mr. Williamson has managed and participated in numerous environmental quality assessments at hazardous, radioactive and non-hazardous waste disposal sites. His experience includes management of large-scale environmental investigations, preparation and review of RFI reports and work plans, and collection of field data and samples. He has designed and installed groundwater monitoring systems, and has reviewed and integrated groundwater flow and quality data. He has participated in a very wide range of hydrogeological investigations, from water supply and wellhead protection projects to the Program Manager of large-scale RCRA investigations. He has been responsible for estimating costs; regulatory and contractual compliance; technical quality of deliverables; project health and safety; cost and schedule control; quality assurance and quality control; personnel scheduling; cost tracking/reporting; project P&L; daily management of environmental services department staff; and ensuring client service and satisfaction.

Mr. Williamson has also served as a public health sanitarian, working in these programs: private water supply, private sewage disposal, school sanitation and safety, migrant labor camp safety and sanitation, housing, food service, food establishment, solid waste landfill, marina sanitation, swimming pool sanitation and vector-borne disease control.

RELATED PROJECT EXPERIENCE

Portsmouth Uranium Enrichment Plant, Piketon, Ohio

Served as Program Manager for a contract to conduct four large-scale RCRA Facility Investigations at the U.S. DOE's Portsmouth Uranium Enrichment Facility in Piketon, Ohio. The project included the investigation of over 70 SWMUs for hazardous and radioactive contamination (Project Budget = $35 million). Responsibilities included management and supervision of 12 to 15 full time project staff, preparation of RFI documents, estimation of costs, quality assurance/quality control, cost tracking and reporting, as well as accounts receivable, accounts payable, staff utilization and project profitability.

Private Water Company, North Central Illinois

Project hydrogeologist for Source of Supply and Safe Yield Study for a municipal water supply. The project was undertaken because the growth in customer base and aquifer contamination at existing wellfields require expanding the system to a six million-gallons per day (mgd) system. This project included installation and development of observation wells; long-term evaluation of surface and ground water relationships; performance and evaluation of a 72-hour pumping test; technical consultation and management of Modflow computer model development; analysis of contaminant trends at existing wellfields in the area; and an extensive literature review of geologic, hydrogeologic, and geochemical information about the area. This work led to Phase II of the study, to identify sources of contamination and possible areas that may be suitable for wellfield development, which is currently under way.

Fernald Environmental Management Project, Fernald, Ohio

Coordinated laboratory services between the FEMP and several laboratories for a large number of samples which were analyzed for organic, inorganic, and radioactive constituents. Technical author/lead of an information booklet regarding ground water conditions at the site. Provided coordination/support services for data validation and waste characterization tasks.

Ross County, Ohio

Revised a wellhead protection plan for a 2.2 MGD wellfield along the Scioto River in accordance with OEPA comments. Responsibilities included analysis of existing geologic and hydrologic data, evaluation of one and five year time-of-travel capture zones, identification of possible control mechanisms for the wellfield, and the location of all potential sources of contamination.

NASA Lewis Research Center and Plum Brook Station, Cleveland and Sandusky, Ohio

Project hydrogeologist responsible for the investigation, removal and closure Project hydrogeologist responsible for the investigation, removal and closure of 42 underground storage tanks. The project included the development and implementation of a remedial investigation of the leaking USTs. Developed the Preliminary Engineering Report for the removal/replacement of all underground storage tanks at the facilities.

Portsmouth Uranium Enrichment Plant, Piketon, Ohio

Served as the company Project Manager and lead hydrogeologist for the dewatering, detoxification and clean closure of two RCRA waste lagoons, and construction of two

monocells to hold the treated waste from the lagoons. Responsible for the installation of boreholes; oversight of filter cake and soil sampling; quality control of monocell construction, sludge emplacement, and monocell closure; decontamination of personnel and equipment; and project compliance with all DOE and OSHA health and safety requirements.

Dayton Power and Light, Dayton, Ohio

Conducted field investigations and collected historical data regarding PCB-containing equipment usage, placement and maintenance. The study identified portions of the company's service area that could be potentially sensitive to an accidental release of PCBs (e.g., the City of Dayton's water supply wellfields). These sensitive areas were delineated on maps, then the locations of DP&L's PCB-containing equipment was compared to these maps to determine if it was in a sensitive area. The study was performed so that a cost-risk analysis could be performed in order to prioritize the replacement of the PCB-containing equipment, to obtain the largest reduction in risk in the most cost-effective manner.

Jefferson Proving Ground, Madison, Indiana

Site lead and team hydrogeologist for the development of an Enhanced Preliminary Assessment and Master Environmental Plan related to base closure of Jefferson Proving Ground, a munitions testing facility, located outside Madison, Indiana. Work was done in cooperation with the USATHAMA Base Closure Office.

Geff Alternative Site, Geff, Illinois

Served as project hydrogeologist, responsible for the proper development and hydraulic testing of wells that were installed in order to determine the geologic suitability of the area for the construction of the Illinois Department of Nuclear Safety's low level radioactive waste repository.

Portsmouth Uranium Enrichment Plant, Piketon, Ohio

Task Manager of investigations at X-701B, a waste disposal site at the facility. The investigations included soil gas probe installation and sampling, waste sampling, groundwater monitoring system design and installation, well development and hydraulic testing of wells.

Fairfield Sanitary Landfill, Amanda, Ohio

Designed a phased groundwater monitoring system, developed workplan, and site health and safety plan. Supervised field personnel during monitoring well installation. Met with OEPA officials to negotiate design specifications and to defend installation procedures. Wrote the sampling and analysis plan.

Allied Landfill Expansion, McArthur, Ohio

Conducted preliminary investigations for location of expansionareas, including drilling and sampling of site soils. Conducted background research on area, including strip mine records and maps. Designed a preliminary groundwater monitoring system.

Ohio Department of Health, Southwest District Office

Responsible for investigations and consultations in the areas of private water supply, private sewage disposal, migrant labor camp sanitation and safety (OSHA), school sanitation (including preliminary asbestos investigations), housing, and vector-borne disease prevention. Conducted lead paint investigations as well as investigations regarding elevated blood lead levels in children.

Hamilton County Health Department, Cincinnati, Ohio

Responsible for inspections and investigations in food service, food, establishment, landfill, swimming pool, campground, marina, and mobile home park sanitation; housing, and vector control.

Greene County Health Department, Xenia, Ohio

Conducted inspections of food services, food establishments, housing, ,swimming pool sanitation, private water supply, private sewage disposal, solid waste disposal, and vector control.

CREDENTIALS/REGISTRATIONS

Certified Professional Geologist: AIPG # 8420
Certified Professional Geologist: State of Indiana
Professional Geologist: Commonwealth of Pennsylvania
Registered Geologist: State of Arkansas
Security Clearance: U.S. DOE " L" (PORTS)

MING ZHANG

Bennett & Williams

EDUCATION

MS, Civil Engineering, The Ohio State University, 1994-1996
MCRP, City and Regional Planning, The Ohio State University, 1994-1996
MS, Urban Planning, Tongji University, Shanghai, China, 1983-1985
BA, Urban Planning, Tongji University, Shanghai, China, 1978-1983

FIELDS OF SPECIAL COMPETENCE

System design and implementation of Geographic Information Systems; GIS application development in the fields of planning, spatial data management, environmental investigation, and scientific visualization; Urban And Regional Planning; Urban Design; Transportation Planning and Traffic Engineering.

SUMMARY OF EXPERIENCE

Mr. Zhang has over 14 years of experience in urban and regional planning, geographic information system (GIS) application, civil engineering, and environmental investigation in both China and the United States. Mr. Zhang currently serves as the GIS Coordinator responsible for management of the ArcInfo based GIS system, spatial data conversion, image processing, and GIS application development. Prior to coming to the United States, he served in upper management positions with the Shanghai Urban Planning & Design Institute where he was responsible for land use planning, physical planning, and urban design for City of Shanghai's central city. At the same time, Mr. Zhang served on the Science & Technology Committee of the Shanghai Urban Development and Construction Commission and the Computer Applications Subcommittee, which was responsible for GIS development for urban planning, development, and management.

Mr. Zhang conducted a number of planing projects in his early professional career in China, ranging from comprehensive planning to detailed urban design. He also worked on new town planning as well as historical preservation planning. Several of these projects were considered to have national importance. One project on new town planning received two national awards. He also received three regional level professional awards.

Mr. Zhang has over 10 years experience in GIS design, implementation, and GIS application development. With his unique cross-disciplinary expertise, Mr. Zhang has successfully applied cutting-edge GIS technology for local governments in the fields of urban & regional planning and transportation modeling; utilities; environmental studies; and many others.

Mr. Zhang is also proficient with advanced scientific data visualization technology and can display modeling results in a graphic form that is more easily understood by decision-makers. Mr. Zhang develops the computerized information systems that integrate environmental modeling with GIS and scientific visualization software. His specialties include realistic 3-D representations of spatial data and environmental models, computer animations of surface and subsurface formations, ground-water flow, and contamination transport through time and space.

RELATED PROJECT EXPERIENCE

New Town Master Plan, Gudao New Town, China

Conducted master plan and the first phase of a detailed plan for the Gudao New Town Planning project. This plan was implemented in April 1984. The project received the First Prize in the 1986 National Urban Planning and Architecture Annual Award and the First Prize of 1986 Science & Technology Progress Award issued by the China Ministry of Urban and Rural Construction and Environmental Protection. Today, this seven square kilometer new town, outside Victory Oil Fields in Shandong Province, China, is well known in the Chinese planning community and is regarded as the landmark of the most successful new town planning project.

Historical Preservation Planning of Shanghai Old Town, Shanghai, China

Conducted the preservation-planning project of the Yu Garden historical district. This area has more than 800 years of history and was the birthplace of Shanghai Old Town. This was the first planning effort to preserve Old Town instead of replacing it with modern construction while still providing redevelopment opportunities. The framework for Old Town conservation was developed, and a complete set of historical preservation planning principles and urban design guidelines were developed and proposed. The plan was adopted by the Shanghai Government and was begun in 1989. Today, Old Town is a major tourist attraction in Shanghai. This planning project became the landmark for historical preservation planning in China.

Comprehensive Planning and Development Planning for the Special Economic Development Zone, Pudong New Area, China

Conducted the comprehensive planning and development planning of Pudong New Area. With a projected population of 2.5 million people, this area will be the largest and most important special economic development zone in China, and is expected to be the testing area for many economic reform initiatives. Mr. Zhang successfully incorporated market-based economics into its urban planning and development. Mr. Zhang developed many innovative concepts, such as free trade zone, high-tech development park, and export industrial park in the planning for this area. Many of these new concepts have been successfully implemented and have had significant influence in China, which is in the process of shifting its centrally-controlled economy to a market-based economy.

GIS Feasibility Study, System Design, and Implementation Plan for Shanghai Planning Bureau, Shanghai, China

Conducted a GIS feasibility study for the Shanghai Government. This led to the development of the GIS implementation plan and establishment of the GIS Center for Shanghai Urban Development. Mr. Zhang was a member of the technical committee that oversaw GIS development, and reviewed the technical specifications of the system. He led the system design and pilot project phases of the implementation plan, and provided technical support services for the City Planning Bureau for GIS related matters.

Spatial Data Conversion, GISOM Project, State of Ohio

Provided independent consulting expertise for the GISOM (Generating Information from Scanning Ohio Maps) project, which was a joint project of the United States Geological Survey (USGS), The Ohio State University, and the State of Ohio. The purpose of this project was to convert the 800 USGS 1:24,000 scale topographic quadrangle maps into Digital Line Graph (DLG-3) files. Each USGS quad map contains seven layers of topographic features that were scanned, warped, vectored/digitized and attributed. Automatic and visual quality control functions were then performed to ensure the maps were properly converted.

GIS Based Wetland Restoration Modeling, OEPA, State of Ohio

Assisted in the Cuyahoga River Basin Wetland Restoration project while working as intern at the Ohio EPA. Created the project base map from DLG-3 files, and generated a 10-meter resolution hydrologically correct digital elevation model (DEM) for the Cuyahoga River Basin covering six counties in northeast Ohio. Performed land surface characterization analysis and surface water modeling.

GIS Assisted Transportation Modeling and Network Encoding, Ohio Department of Transportation (ODOT), State of Ohio

Evaluated GIS based transportation modeling software. Successfully transferred TranPlan-based Lama metropolitan area travel demand model to TransCAD and re-calibrated the model. Recommended utilizing the existing ODOT Road Inventory Database to create a transportation model network. After joining B&W, successfully conducted the pilot project and demonstrated the feasibility, efficiency, and flexibility of this approach. This new concept and method will be adopted in ODOT's upcoming Ohio Statewide Travel Demand Model project.

GIS Based Water Supply Distribution Model, Private Water Company, Ohio

Created the GIS based water supply distribution model for a rural water supplier that was providing water for five rural counties in Southern Ohio. Developed a loosely coupled integration procedure which combined the water pipeline and node information to existing high accuracy GIS road network files. Generated the water distribution network using dynamic segmentation techniques, and used the GIS data to create the water distribution model. SPOT satellite images were used to update the network. This method greatly increased the accuracy of the network and modeling results, linked important road and subsurface water network information together, and paved the way to integrate the water distribution network with the regional public works GIS system. This work was published in the 1998 ESRI International User Conference Proceedings, and was presented at the same Conference in July 1998.

GIS Assisted Environmental Litigation Support, Clark County, Ohio

Developed a GIS application for a hydrogeological investigation of a proposed landfill expansion site in the State of Ohio. Incorporated both publicly available digital spatial data and field data in this application to analyze and visualize the spatial relationships between the various geological, hydrological, and geographic features as they relate to the proposed landfill expansion. This GIS application was used during the litigation process to present the complex geological and environmental observations in an easily-understood manner.

Integration of GIS with Stream Flow and Flooding Hazard Modeling, Perry County, Ohio

Developed procedures and programs to integrate GIS and the HEC/RAS Stream Flow Modeling package. Wrote AMLs that generated HEC/RAS inputs from surface and stream channel data in ArcInfo LATTICE, TIN and ARC coverage format, and

displayed the HACRAS output in ArcInfo or ArcView. The program was used to evaluate stream channel modification and mitigation of flooding hazards.

GIS Support for Various Planning Projects for Municipalities

Provided GIS services and technical support on a number of planning projects in the State of Ohio, ranging from municipality land use planning and zoning to county comprehensive planning. Scopes of work have included base map generation, land use evaluation, zoning maps, and development suitability analysis.

GIS Assisted Ground-Water Flow Modeling, Private Water Company, Illinois

GIS and ground-water flow modeling support for Source of Supply and Safe Yield Study for a municipal water supply. The project was undertaken because the growth in customer base and aquifer contamination at existing wellfields require expanding the system to six million-gallons per day (mgd). Mr. Zhang developed GIS applications to manage the data acquired from the public domain and field observations. He used GIS technology to generate ground-water flow model input, and to display and model output. He also developed a ground-water flow model using ModFlow and performed model calibration.

PUBLICATIONS

Zhang, Ming, DeWitt, T., Robinson, M., and Sprout, R., 1998. *"Rural Ohio Utility Discovers GIS (Geographic Information Systems) to Water Flow Modeling and Water Supply Planning"*, Eighteenth Annual ESRI International User Conference Proceedings, Redland, California, CD ROM.

Catalano, A, Zhang, M., and Weatherington-Rice, J., 1998. *"The Use of GIS to Manage, Analyze and Visualize Data Collected During An Investigation of a Proposed Landfill"*, Eighteenth Annual ESRI International User Conference Proceedings, Redland, California, CD ROM.

Zhang, Ming, 1991. *"Local Planning of Approaching Area of Nanpu Bridge"*, Shanghai Urban Planning Review, vol. 1, pp. 31-33.

DUANE A. CAREY, C.P.G.

Bennett & Williams

EDUCATION

BS GEOLOGY - Bloomsburg University of Pennsylvania, 1991

Continuing education includes two short courses in Human Health and Environmental Risk Assessment, a ground-water modeling course, supervisor training for health and safety at hazardous materials sites, and numerous seminars and conferences.

FIELDS OF SPECIAL COMPETENCE

Project management of investigations under CERCLA, RCRA, solid-waste, UST, municipal ground-water supply, and voluntary remedial actions; geophysical studies; logging geologic samples and supervising the various drilling techniques including: hollow- and solid-stem augers, cable-tool, mud rotary, air rotary, dual-wall reverse rotary, and down-the-hole air hammer; performance and analysis of aquifer tests (slug tests, pumping tests, packer tests) and soil-gas surveys; environmental site assessments; ground-water sampling; and contaminant migration investigations.

EXPERIENCE

Remedial Investigation/Feasibility Study (RI/FS), Shieldalloy Metallurgical Corp., Cambridge, Ohio

Project Management of hydrogeological investigation; prepare RI Scoping Document, work plan, field sampling plan, and RI report on behalf of two multinational industries, on an extremely aggressive schedule; negotiate terms of investigation with three regulatory agencies (Ohio EPA, US NRC, Ohio Department of Health); design and implement a plan to drill through a pile of radioactive slag (without creating any fugitive dust) to obtain representative samples for chemical and radiological analyses, determine the total depth of the pile, and evaluate the presence of perched water within the pile; conduct long-term ground-water study to determine interaction between ground water and site wetlands; implement low-flow ground-water sampling plan to significantly reduce anomolously high concentrations of metals (including radionuclides) in previous ground-water samples; prepare hydrogeological maps and cross sections; design, conduct, and analyze aquifer pumping tests and slug tests; supervise field crew. Analysis of nearby soil resources for use as capping material to cover the slag piles in accordance with Ohio EPA solid waste regulations.

Unpermitted RCRA Storage Facility, Jefferson County, Ohio

Project Management; returned client to compliance with Ohio EPA regulations by developing and implementing contingency plans, waste-labeling plans, notification plans and a RCRA closure plan. Significantly reduced client's punitive fine by negotiating with Ohio EPA and obtaining closure certification on schedule.

On-site Industrial Landfill, Washington County, Ohio

Project Management; prepare a preliminary risk assessment of apparent metals contamination in ground water at a closed industrial landfill. Develop alternate ground-water monitoring network and sampling and analysis plan to successfully demonstrate that apparent contamination originated off-site.

Contaminant Investigation/Water Supply Investigation, Central Illinois

Project Management; develop sampling and analysis strategy using Geoprobe ®-type sampling and on-site mobile laboratory to delineate extent of perchloroethylene plume in ground water beneath a 6 MGD municipal wellfield; aquifer testing and analysis; treatment system evaluation comparing air stripping to granular activated carbon; exploratory study for new/additional source of ground-water supply; ground-water flow and contaminant fate and transport modeling.

Construction of Research Facility through Wetlands near a National and State Scenic Waterway, Madison County, Ohio

Project Geologist; assist in wetlands delineation; field management of check-dam construction in wetlands to control siltation in the waterway during construction; sampling and management of contaminated soil excavated from the construction site.

CERCLA Remedial Investigation/Feasibility Study (RI/FS), Pickaway County, Ohio

Project Hydrogeologist for ground-water sampling at a manufacturing facility and a public water supply to support a CERCLA investigation

Voluntary Contaminant Investigation Under CERCLA Guidelines, Cuyahoga County, Ohio

Project Hydrogeologist for delineation of lateral and vertical extent of soil and ground-water contamination at former automobile manufacturing facility.

Emergency Remedial Action, Farmville, Virginia

Project Hydrogeologist for emergency site investigation of UST release involving free-product discharge to a river and storm sewer; supervision of contaminant interception installation and treated ground water reinjection trench installation; removal of five USTs, including three previously unknown; ground-water sampling.

Hazardous Waste Landfill, Clermont County, Ohio

Project Hydrogeologist; critical technical review of RCRA Facility Investigation/ Corrective Measures Study (RFI/CMS), risk assessment for closure, risk assessment of remedial alternatives, Corrective Measures Implementation (CMI) work plan, and RCRA closure plan.

Unclosed, Former City landfill, Richland County, Ohio

Project Geologist; soil gas surveys in support of Explosive Gas Monitoring Plan; test drilling for gas interception trench design; review of local hydrogeological information in preparation of U.S. EPA and Ohio EPA evaluation for possible Superfund status.

Closed County Landfill, Knox County, Ohio

Project Hydrogeologist; ground-water sampling at closed municipal landfill; preparation of hydrogeological maps; statistical analysis of ground-water quality.

PROFESSIONAL ASSOCIATIONS

Geological Society of America; Hydrogeology and Engineering Geology Divisions
Association of Ground-Water Scientists and Engineers; National Ground Water Association
American Water Works Association

CERTIFICATIONS

Certified Professional Geologist - American Institute of Professional Geologists
Licensed Professional Geologist - State of Illinois

40 hour OSHA Hazwoper
8-hour OSHA Hazwoper Supervisor
American Red Cross First Aid and CPR

PUBLICATIONS/PRESENTATIONS

Christy, A., D. A. Carey, and L. McFarland. *The use of test pits for environmental site investigations to quantify subsurface fracturing in unconsolidated materials.* Pending publication in special journal on fractures published by the Ohio Academy of Science.

Carey, D. A. *Analysis of an Alluvial Aquifer: An Example of a Water Supply and Contaminant Investigation.* Water Management Association of Ohio, 27th Annual Conference, November 1998.

Carey, D. A. *Performance and Monitoring of Slug Tests.* Ohio Academy of Science Field Day, Summer, 1997.

Carey, D. A., and D. D. Braun. *The Ricketts Glen Waterfalls: A Product of Pleistocene Stream Derangement.* Pennsylvania Academy of Science, Winter, 1991.

LINDA ALLER

Bennett & Williams

EDUCATION

BA GEOLOGY - The Ohio State University, 1977

Graduate courses in Hydrogeology at The Ohio State University Columbus, Ohio; Ohio University, Athens, Ohio; and Wright State University, Dayton, Ohio.

Numerous continuing education courses have been completed related to ground-water modeling, ground-water management, safety at hazardous disposal sites, risk assessment, remote sensing and geographic information systems.

FIELDS OF SPECIAL COMPETENCE

Hydrogeology; Evaluation and Assessment of Hydrogeologic Settings with regard to Potential for Pollution and Contaminant Migration; Facility Siting; Ohio Stratigraphy; Drilling and Sampling Technology; Water and Soil Treatment and Remediation; Project Management; Community Relations; Technical Training Programs.

SUMMARY OF EXPERIENCE

For 20 years, Ms. Aller has been actively involved in both the management and technical aspects of ground-water protection and investigations. She has worked extensively with local, state, and federal officials and legislators providing technical information on policies and regulations that affect ground water. She chaired the committee that developed regulations for domestic wells in the state of Ohio and served as chairman of Ohio's public ground-water task force. She is recognized for her knowledge of Ohio geology and has served as a gubernatorial appointee to the Ohio Geological Advisory Committee.

Ms. Aller has lectured throughout the United States and internationally on all aspects of ground-water occurrence and potential for pollution and on ground-water clean-up technologies. She has conducted training programs on many topics including ground-water and radionuclide contamination. She has helped develop a prototype expert system on underground storage tanks. She has also created slide shows that have been translated into two foreign languages and that are used to educate people throughout the world about ground-water location and development.

Ms. Aller has published state-of-the-art documents on evaluating ground-water pollution that are being used extensively by federal, state, and local governments and private concerns to prioritize clean-up, monitoring and capital expenditures.

Additional state-of-the-art publications include design and construction practices for ground-water monitoring wells, ways to locate abandoned wells and methods to ensure mechanical integrity of injection wells. She has also conducted field investigations to troubleshoot ground-water contamination incidences and to evaluate ground-water quality.

She is currently involved in subsurface investigations to determine presence and extent of soil and ground-water contamination by hazardous and non-hazardous substances and hydrocarbons. She is also involved in well design and wellhead protection.

TYPICAL SELECTED PROJECTS

Confidential Client Eastern Ohio	Oversaw preparation of a RI scoping document, work plan, sampling plan and RI report on behalf of two multinational industries. Oversaw design and implementation of a plan to drill through a pile of radioactive slag (without creating any fugitive dust) to obtain representative samples for chemical and radiological analyses. Conducted long-term ground-water study to determine interaction between ground water and site wetlands. Implemented low-flow ground-water sampling plan to significantly reduce anomalously high concentrations of metals (including radionuclides).
US Nuclear Regulatory Commission Chicago, Illinois	Conducted training program for regional personnel relating to ground-water flow, monitoring well design, and sample collection specifically as it relates to radionuclides.
Confidential Client Southern Ohio	Performed review of all available data on numerous radioactive ground-water plumes at Fernald. Evaluated sources of potential contamination and prepared recommendations relating to plume interception and ground-water remediation alternatives.
Confidential Client Southern Ohio	Performed site assessment as part of an underground storage tank closure for five tanks to define the extent of hydrocarbon migration. Responsibilities included soil drilling and sampling; interpretation of site stratigraphy; installation of ground-water monitoring wells; soil remediation and submission of a site assessment/closure report to state officials.

State of Ohio Northern Ohio	Supervised geotechnical and hydrogeologic investigation to define the extent of subsurface contamination at a former stamping manufacturing plant. Chemicals of concern included hydrocarbons, PCBs and volatile and semi-volatile compounds. Defined stratigraphy; installed monitoring network; evaluated remedial technologies to determine feasibility and cost-effectiveness in geologic scenarios; and provided recommendations and cost estimates on remedial alternatives.
Oregon, Ohio	Participated in the review of a complete Part B application for RCRA hazardous waste disposal site; evaluated monitoring well analytical data; evaluated results of pumping tests on site.
Confidential Client Southern Ohio	Conducted investigation of former auto salvage site to determine extent of subsurface contamination as part of road right-of-way acquisition. Developed innovative alternatives for dealing with low levels of contamination that were accepted by state officials. Site was successfully remediated.
Confidential Client Eastern, Ohio	Project manager for proposed solid waste landfill. Prepared permit-to-install; performed hydrogeologic evaluation; obtained permit to operate.
Confidential Client Southern Ohio	Supervised site investigation as part of a property transfer. Conducted soil gas survey; soil borings; sample collection; and soil remediation so that building could be constructed on former contaminated site. Contaminants of concern were primarily hydrocarbons.
City of Chillicothe Chillicothe, Ohio	Project manager for a closed solid waste landfill. Conducted landfill closure including capping; installation of passive gas venting system; installation of ground-water monitoring network utilizing flow-through monitoring wells; performance of detection and assessment monitoring programs; submittal of corrective measures. Also conducted research investigation and remediation activities regarding very unusual biofouling organism.

Confidential Client Eastern Ohio	Project manager for a proposed solid waste landfill. Conducted a complete site evaluation; computed water balance and ground-water flow; defined stratigraphy; and presented design recommendations including liner design and leachate collection system.
Confidential Client Southeastern Ohio	Prepared amendments to closure plan for a surface impoundment and waste piles at a wood treating facility under RCRA interim status. Creosote and related compounds were the contaminants of concern. Investigations included soil sampling and monitoring well installation. A proposed bioremediation plan for soil remediation was prepared as part of the submitted closure plan.
Model Landfill Franklin County, Ohio	Project manager for solid waste landfill closure. Performed extensive review of potential ground-water contamination; supervised modeling, including water balance and evaluation of longterm efficacy of capping with regard to leachate minimization; evaluated impact of quarry operation upon potential leachate migration scenarios; evaluated leachate levels at time of gas extraction system construction; assisted in establishing longterm emergency contingency procedures to prevent public exposure in the event of leachate outbreak.
F.E. Warren Air Force Base Cheyenne, Wyoming	Performed technical evaluation of the proposed remedial actions for several operable units including spills related to TCE. Proposed modifications to design of slurry wall and recovery trenches. Evaluated designs relative to risk posed to offsite housing.
Major Waste Disposal Firm New York	Designed, developed and presented flow models before an administrative hearing judge to demonstrate saturated and unsaturated flow conditions beneath a landfill located in a glaciated setting.
Confidential Client Sydney, Australia	Provided review and recommendations for remediation of several environmental problems at Olympic site for year 2000. Site included: several landfills in former wetland areas; presence of arsenic in soils; occurrence of PCBs in estuarine sediments,

	and contaminants in ground water and soils. Airborne emissions from the landfills were also a concern. Proposed clean-up levels; provided technical evaluation methods for laboratory; evaluated and proposed remedial alternatives to control ground-water contamination including slurry walls and trenches; and provided recommendations on landfill gas control.
Robins Air Force Base Marietta, Georgia	Provided technical review of several operable units including evaluation of wetland and clean-up of contaminants in the wetlands; options for controlling ground-water contamination from a former fire training area; found contamination in a previously-thought clean area during site walkover; prepared recommendations for alternative remedial designs to control ground-water flow toward major river.
Fairfield County, Ohio	Project manager for exploration for new municipal wellfield. Responsible for choosing potential site, overseeing exploratory investigation of potential sites and estimating aquifer safe yield. Investigative techniques included geophysical investigation, boring and well installation, and pump testing of aquifer. A preliminary wellhead protection plan was developed as part of the well site approval process. Oversaw water treatment plant design. Participated in process to obtain land by eminent domain.

PUBLICATIONS

Weatherington-Rice, Julie, Linda Aller, Truman Bennett, Ann Christy, Jerry Bigham, George Hall, Mike Angle, Scott Brockman, Ed miller, Larry Tornes, Norm Fausey, and Jon Gerken, 1998. *Fractures in High Clay Content Unlithified Glacial Materials in Ohio: Where They are Found, How They are Formed and Why They Persist in Mass Transport in Fractured Aquifers and Aquitards Abstracts*, Conference Sponsored by the Geological Institute University of Copenhagen, Geological Survey of Denmark and Greenland, the Danish Geotechnical Institute, Groundwater Group Danish Environmental Research Programme and GRUNDFOS, Copenhagen Denmark, pp. 66-69.

Weatherington-Rice, Julie, Linda Aller, Truman Bennett, Ann Christy, Jerry Bigham, George Hall, Mike Angle, Scott Brockman, Ed Miller, Larry Tornes, Norm Fausey, and Jon Gerken, 1998. Research and Educational Outreach Efforts Relating to Fracture Formation and Water/Contaminant Transport in Ohio in Fractured Aquifers and Aquitards Abstracts, Conference Sponsored by the Geological Institute University of Copenhagen, Geological Survey of Denmark

and Greenland, the Danish Geotechnical Institute, Groundwater Group Danish Environmental Research Programme and GRUNDFOS, Copenhagen Denmark, pp. 101-104.

Aller, Linda, Richard E. Cowles and Truman Bennett, 1996. The Importance of Geologic Setting in Bioremediation in Emerging Technologies in Hazardous Waste Management VI, D. William Tedder and Frederick G. Pohland, editors, American Academy of Environmental Engineers, pp.77-100.

Aller, Linda and Steven Gardner, 1994. Well Design, Construction and Development in Ground Water Sampling - A Workshop Summary; Dallas, Texas, November 30 - December 2, 1993; United States Environmental Protection Agency, EPA/600/R-94/205, pp. 72-81.

Aller, Linda and Karen L. Ballou, 1994. Ground-Water Pollution Potential of Geauga County, Ohio; Ohio Department of Natural Resources, Division of Water, Columbus, Ohio, Report No. 12, 64 pp., 1 map.

Aller, Linda and Karen Ballou, 1994. Ground-Water Pollution Potential of Ashtabula County, Ohio; Ohio Department of Natural Resources, Division of Water, Columbus, Ohio, Report No. 10, 77 pp., 1 map.

Aller, Linda and Karen Ballou, 1991. Ground-Water Pollution Potential of Lake County, Ohio; Ohio Department of Natural Resources, Division of Water, Columbus, Ohio; Report No. 8, 55 pp., 1 map.

Aller, Linda and Karen Ballou, 1990. Ground-Water Pollution Potential of Knox County, Ohio; Ohio Department of Natural Resources, Division of Water, Columbus, Ohio; Report No. 23, 101 pp., 1 map.

Aller, Linda, Truman W. Bennett, Glen Hackett, Rebecca J. Petty, Jay H. Lehr, Helen Sedoris and David Nielsen, 1989. Handbook of Suggested Practices for the Design and Installation of Ground-Water Monitoring Wells; U.S. Environmental Protection Agency, 396 pp.

Wagner, Terry D., M. Jim Hendry, Linda Aller and Jay H. Lehr, 1988. DRASTIC: A Demonstration Mapping Project; Botetourt, Carroll, Henrico, Middlesex, Prince William and Rockingham Counties, Virginia, Virginia Water Control Board, Richmond, Virginia, 50 pp.

Aller, Linda, Truman W. Bennett, Jay H. Lehr, Rebecca Petty and Glen Hackett, 1987. DRASTIC: A Standardized System for Evaluating Ground-Water Pollution Potential Using Hydrogeologic Settings; U.S. Environmental Protection Agency, Publication Number 600/2-87/035, 622 pp.

Aller, Linda, Truman W. Bennett, Jay H. Lehr and Rebecca Petty, 1986. "DRASTIC: A System to Evaluate the Pollution Potential of Hydrogeologic Settings by Pesticides"; Evaluation of Pesticides in Ground Water, ACS Symposium Series 315, American Chemical Society, Washington, DC, pp. 141-158.

Aller, Linda, Jay H. Lehr, Truman W. Bennett and Rebecca J. Petty, 1985. "DRASTIC: A Standardized System for Evaluating Ground-Water Pollution Potential Using Hydrogeologic Settings"; Proceedings of the Conference and Exposition on Petroleum Hydrocarbons and Organic Chemicals in Ground Water, Water Well Journal Publishing Company, Dublin, Ohio, pp. 38-57.

Alexander, W. Joseph, Jay H. Lehr and Linda Aller, 1985. "Training Manual for Using DRASTIC Hydrogeologic Factors in Conducting a National Ground-Water Vulnerability Assessment"; Research Triangle Institute, Research Triangle Park, North Carolina, 166 pp.

Aller, Linda, Jay H. Lehr, Truman W. Bennett and Rebecca J. Petty, 1985. DRASTIC: A Standardized System for Evaluating Ground-Water Pollution Potential Using Hydrogeologic Settings; U.S. Environmental Protection Agency, Publication Number EPA/600/2-85/018, 163 pp.

Aller, Linda, Rhonda G. Hackundy and David M. Nielsen, 1985. Enforcement of Regulations Governing Ground-Water Contamination From Underground Injection or Disposal of Salt Water in Kansas and Texas; U.S. Environmental Protection Agency, Publication Number EPA/600/2-85/034, 75 pp.

Aller, Linda, 1984. "Abandoned Wells - How To Find Them"; Proceedings of the Seventh Ground-Water Quality Symposium, Water Well Journal Publishing Company, Worthington, Ohio, pp. 288-305.

Nielsen, David M. and Linda Aller, 1984. Methods for Determining the Mechanical Integrity of Class II Injection Wells; U.S. Environmental Protection Agency, Publication Number EPA/600/2-84/121, 263 pp.

Aller, Linda, 1984. "Survey of Available Technologies for Locating Abandoned Wells"; Proceedings of the First National Conference on Abandoned Wells: Problems and Solutions, May 30-31, 1984, Environmental and Ground Water Institute, University of Oklahoma, Norman, Oklahoma, pp. 125-143.

Nielsen, David M. and Linda Aller, 1984. "Artificial Recharge: A Water Supply Alternative for the Chicago Suburban Area"; Proceedings of the NWWA Eastern Regional Conference on Ground-Water Management, Water Well Journal Publishing Company, Worthington, Ohio, pp. 85-121.

Nielsen, David M. and Linda Aller (editors), 1984. Proceedings of the NWWA Eastern Regional Conference on Ground-Water Management; Water Well Journal Publishing Company, Worthington, Ohio, 788 pp.

Nielsen, David M. and Linda Aller (editors), 1984. Proceedings of the NWWA Western Regional Conference on Ground-Water Management; Water Well Journal Publishing Company, Worthington, Ohio, 369 pp.

Aller, Linda, 1984. Methods for Determining the Location of Abandoned Wells; U.S. Environmental Protection Agency, Publication Number EPA/600/2-84/123, 130 pp.

Nielsen, David M. and Linda Aller (editors), 1983. Proceedings of the Sixth National Ground-Water Quality Symposium; Water Well Journal Publishing Company, Worthington, Ohio, 318 pp.

Lehr, Jay H. and Linda Aller, 1983. "Ground Water Use and Abuse"; Proceedings of the Diversion of Great Lakes Water: Critical Resource, Critical Issue, Kalamazoo, Michigan.

Bennett, Truman W., Tyler E. Gass, Jay H. Lehr, Linda Aller and David M. Nielsen, 1982. "A Cost-Effective Water Supply Alternative for the Chicago Suburban Area: Artificial Ground-Water Recharge"; Water Resources Council of Chicagoland, Chicago, Illinois, 70 pp.

Official Publications of the Ohio Department of Health

a) Ohio's Soil Manual for Sanitarians
b) Home Sewage Disposal Drawings
c) Selecting a Homesite - What you should know about sewage disposal
d) Emergency Disinfection of Drinking Water
e) Plans for Developing a Cistern Water Supply

Newsletter and Journal Articles

Editorial - Aller, Linda and Jay H. Lehr, 1986. "Iron Bacteria: Not Unlike the Common Cold"; Water Well Journal, February, 1987, pp. 4-5.

Editorial - Lehr, Jay H., Linda Aller and Truman W. Bennett, 1986. "Quantifying Wisdom: A Double-Edged Sword"; Ground Water Monitoring Review, Spring, 1986, pp. 4-7.

Editorial - "Artificial Ground-Water Recharge: Its Time Has Come"; Water Well Journal, February, 1985, pp. 8-9.

Editorial - "The Pipeline to the Consumer's Pocketbook"; Water Well Journal, November, 1983, pp. 8-9.

Numerous articles in the Bureau of Environmental Health Update pertaining to interpretation of private water system rules.

"That Which We Call Soil By Any Other Name Would Still Be Dirt"; Ohio's Health, Volume 32, Number 4, April, 1980, pp. 10-13.

"The New State-Wide Private Water System Program"; Ohio Journal of Environmental Health, November-December, 1979, pp. 23-26.

PROFESSIONAL ORGANIZATIONS

American Institute of Professional Geologists (Secretary to Ohio Chapter, term 1996-1998)
Association of Ground-Water Scientists and Engineers (A Division of the National Ground Water Association)
Ohio Environmental Health Association

Ohio Academy of Science
Geological Society of America

PUBLIC SERVICE

Member – Central Ohio Public Advisory Group, Ohio's Source Water Assessment and Protection Program (November, 1997 – Present)
Member – State Coordinating Committee on Ground Water, Well Construction Standards Workgroup (May, 1996 – Present)
Chairman - Ground-Water Task Force, State of Ohio Public Advisory Group (January, 1985 - January, 1987)
Co-Chairman - Technical/Policy Committee, Interagency Ground-Water Task Force, State of Ohio (October, 1987 - December, 1988)
Member - Executive Committee to Advise Governor of Ohio on Ground Water (January, 1989 - May 1990)
Member - Non-Point Task Force, Ohio Department of Natural Resources, (March, 1987 - December, 1988)
Gubernatorial Appointee - Ohio Geological Advisory Council (May, 1990 - May, 1991)
Gubernatorial Appointee to the Governor's Blue Ribbon Task Force on Water Resources Planning and Development (January, 1993 - May, 1994)

REGISTRATION AND SAFETY TRAINING

Licensed Professional Geologist, #30310, Minnesota
Licensed Professional Geologist, #000631, Illinois
Registered Professional Geologist, #PG668, State of Wyoming
Registered Professional Geologist, #1036, State of Wisconsin
Registered Professional Geologist #RG 0287, State of Missouri
Registered Professional Geologist #354, State of Florida
Registered Professional Geologist #367, State of Arkansas
Registered Professional Geologist #TN0800, State of Tennessee
Registered Professional Geologist #AA207, State of Alaska
Registered Professional Geologist #554, State of Delaware
Registered Professional Geologist #PG-000190-G, State of Pennsylvania
Registered Professional Geologist #220, State of Kentucky
Registered Professional Geologist #604, State of Alabama
Certified Professional Geologist #791, State of Indiana
Certified Professional #CP141, Voluntary Action Program, State of Ohio
Certified Professional Geological Scientist #6919, AIPG
Certified Ground-Water Professional #187, AGWSE
Registered Sanitarian #911, State of Ohio
Certified Professional Hydrogeologist #846, AIH
Hazardous Materials Training-29CFR 1910.120(e)(8)
Supervisor's Safety at Hazardous Materials Sites