

US EPA ARCHIVE DOCUMENT

BLUE RIDGE ENVIRONMENTAL DEFENSE LEAGUE

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FAX COVER SHEET



TO: SHERRI L. WALKER 202-260-3125

FROM: LOUIS ZELLER

RE: BUNCOMBE COUNTY, NC XL PROJECT

TODAYS DATE: 5/15

Number of pages including this cover: 4

Comments on Draft of 4/13/00

May 12, 2000

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- 4. The November 1 & 2, 1999 sampling results were not provided to the NC Division of Waste Management until our staff requested to see the landfill monitoring records. At the very least, EPA must review the most recent test results—which should be available very soon—before moving forward. EPA must also investigate the drilling of a new monitoring well at the landfill site following a supposed vandalization.
- 5. Buncombe County officials cannot be trusted to provide information to EPA, the NC DWM, or the affected public.

BREDL Recommendations

- 1. We recommend that EPA not move forward with any XI project at the Buncombe County landfill.
- 2. We recommend that EPA review the agreement resulting from BREDL v. NCDENR to determine the County's obligation to the affected community.
- 3. We recommend that EPA review the hearing record for the public hearing and comment period prior to the permitting by NC DENR of the Buncombe County landfill.
- 4. We recommend EPA secure all records of groundwater monitoring at the BCSWMF.
- 5. We recommend that BREDL and north Buncombe residents be included at every decision-making point in this project.

Specific Comments

I C. Purpose of the Agreement

Throughout the draft are phrases regarding intent of the parties to this Agreement. The Agreement "is not an enforceable contract" and "does not create legal rights." But section VI B outlines the legal basis for the project and appears to remove some important legal protections: "This Agreement itself is not subject to judicial review or enforcement." The Agreement continues, "Nothing any Party does or does not do that deviates from a provision of this Agreement...can serve as the sole basis for any claim for damages, compensation, or any other relief against any Party."

II B. Liner and LCRS performance

The alternative liner system in Buncombe County, although approved by the NC Department of Waste Management, is not proven to be an effective containment system for leachate. The alternative composite liner system used in Cell 3 comprised of 18 inches of 10^{-5} cm/sec clay, GCL, and 60-mil HDPE does not meet 40 CFR 258.40(a)(1) requirements. It is not approved by EPA and, in fact, may already be showing signs of leakage. The most recent Buncombe County New Facility report revealed groundwater contamination in the three year old facility. Landfill samples gathered on November 1 and 2, 1999 contained methylene chloride in monitoring well 8D at 2 $\mu\text{g/liter}$. The report also identified acetone at site SW-3 at 28 $\mu\text{g/liter}$. For comparison, the North Carolina groundwater standard [15A NCAC 2L .0200] for methylene chloride is 5 $\mu\text{g/liter}$ and for acetone is 700 $\mu\text{g/liter}$.

II B. Specific Project Elements

The Agreement identifies the BCSWMF as being in a seismic impact zone (SIZ). EPA's Subtitle D rules [40 CFR Section 258.14] restrict landfilling in areas identified as seismic impact zones

Esse quam videre

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May 12, 2000
Louis A. Zeller

Comments to EPA Region IV on the DRAFT Final Project Agreement for the Buncombe County Leachate Recirculation/Gas Recovery Project submitted April 13 by the Buncombe County General Services Department.

Background

My co-worker Janet Zeller spoke at length with Michelle Glen of the Region IV EPA XI Program. She communicated our concerns about the following: 1) The Buncombe County Solid Waste Management Facility site located in north Buncombe is characterized by fractured bedrock which can lead to groundwater contamination; 2) The landfill site has within the footprint and buffer area a minimum of nine streams, which make the site vulnerable to groundwater contamination and hydrological unpredictability; 3) The site exists in the seismically active zone; 4) People in the surrounding area drink from groundwater; and 5) Recognizing that the site selection was based on low voter turnout and other political considerations, north Buncombe was selected based on political rather than geological criteria.

Janet also reported to Michelle Glen that Buncombe County has a record of misinformation and outright lying to the public about the massive groundwater contamination at the old Buncombe County landfill site in Woodfin. (BREDL will provide water test data, Buncombe County Commission minutes, newspaper articles, and other documents upon request.) We were appalled that Bob Hunter, at the May 2nd meeting, denied knowledge of the court ruling establishing Buncombe County's agreement with BREDL and North Buncombe Against the Dump. Further, we were surprised that Mr. Hunter professed no knowledge of the methylene chloride groundwater contamination at the new BCSWMF landfill.

BREDL Conclusions

- 1. Because of geologic, hydrologic, and seismic uncertainties, the BCSWMF is a poor site for any XI Project.
- 2. The existence of methylene chloride contamination in MW-8D and acetone contamination in SW-3 should rule out the Buncombe County landfill as an XL project which consists of leachate recirculation. This recirculation could result in contaminant concentration and greater groundwater contamination.
- 3. The landfill liner will be perforated by the concentrated leachate contaminant. The resulting fingers of groundwater contamination may not be detected by the groundwater monitoring wells which are located hundreds of feet apart. According to Dr. G. Fred Lec Subtitle D landfill monitoring wells should be located every ten feet in order to detect the smaller plumes of contamination.



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stating that "new MSWLF units and lateral expansions shall not be located in SIZs unless the owner or operator demonstrates to the Director of an approved state that all containment structures, including liners, leachate collection systems, and surface water control systems, are designed to resist the maximum horizontal acceleration in lithified earth material for the site." North Carolina's solid waste rules [15A NCAC 13B .1622(5)(a)] contain similar language. EPA identifies Buncombe County as being in a region with over 200% of the horizontal acceleration deemed safe. Adding liquids back into the landfill will make the mass of buried waste less stable. Therefore, common seismic events in western North Carolina will have greater relative impact on the landfill after recirculation. This instability will increase the stress on liners and distribution/collection systems embedded in the waste.

Laboratory studies have shown that organic solvents present in common household cleaners can pass through the high-density polyethylene liners within one to thirteen days. According to G.Fred Lec, Ph.D, P.E., the clay liners will be breached within three to five years, resulting in poisoning of the groundwater. Once contaminated by municipal solid waste landfill leachate, groundwaters are no longer suitable for domestic water supply. As of August 1995, North Carolina does not oversee or keep records on the determination of borderline hazardous wastes which can go into a Subtitle D solid waste landfill. Furthermore, according to North Carolina rules, a pollution zone can be declared around a landfill which will never have to be cleaned up. [15A NCAC 2L Section .0106] For these reasons, municipal water supplies should be provided to the households surrounding the BCSWMF at the earliest date possible; whether or not the XL Project moves forward, providing a safe drinking water supply to the residents of north Buncombe must be a county priority and a state priority, based on the power of the state health director to take immediate action.

III A.2.b. Expedited methane generation/recovery

Buncombe County intends to burn the methane extracted from the landfill in a "flare." It makes little sense to go to the expense of recovering flammable gas only to burn it in this manner with no function. The greenhouse gas reductions and cost-effectiveness calculations cited in the Agreement are based on CO₂ offsets which result from substitution of the waste gas for fossil fuel. The Agreement does not include any analysis of wasting the recovered gas in a flare.

III A.2.c. Lessening long-term risk and need for monitoring

Lessening long-term risk may increase short-term hazards. Waste decomposition which results in subsidence can cause pipeline rupture. If leachate recirculation is effective in accelerating decomposition, gas collection/liquid recirculation manifolds and associated distribution pipes will be subject to higher stress than normal. Therefore, collection/distribution line breakage may occur sooner and with greater frequency.

III A.3.a. Maximizing landfill gas control and minimizing fugitive methane/VOC emissions

The Agreement states that monitoring of the air quality performance of the BCSWMF "will not include surface emission testing." The Agreement asserts that any installation of gas collection will be environmentally beneficial. The landfill is subject to Clean Air Act NSPS (New Source Performance Standards) but early installation of gas collection and control systems in accord with 40 CFR Subpart WWW will not necessarily improve air quality. Testing of the gas samples from the collection system will not provide information on local ambient air impacts. Baseline tests for ambient air should be done before the Project begins. Tests should continue during



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operation of the gas collection system to assure compliance with NSPS. We must state that, against the recommendations during numerous public comment opportunities, the NC DWM has continued to exempt solid waste landfills from the NC air toxics rules: a program which limits toxic air pollutant emissions at property boundaries to one additional cancer death per million. Dr. G. Fred Lec has detailed and quantified toxic air pollutant emissions from solid waste landfills in several studies. To date, however, North Carolina refuses to test landfills for any air poisons other than methane. The volatile contaminant methylene chloride, identified in MW-8D is also a toxic air pollutant under the NCAC 2D.1100. BRFDL will request air sampling for methylene chloride and acetone at this facility.

III C. Stakeholder Involvement and Support

The Agreement limits stakeholder involvement to elected and appointed officials. Informing the public via a "televised presentation at the Buncombe County Commissioners' Annual Planning Retreat" is not adequate. The stakeholders to be actively contacted and involved in the Project by the EPA, county, and state include adjacent landowners, local citizens' groups, and statewide environmental organizations. The broad implications of the EPA XL Project, including permit modifications and solid waste rulemaking, require that these groups be involved early in the process. BRFDL was notified by reporter Jason Sanford of the Asheville Citizen-Times about the XL Project. Only later did county officials attempt to communicate with affected north Buncombe residents. To date, this project has hardly been a model of stakeholder involvement.

IX. Transfer of Project Benefits and Responsibilities to a New Owner

The conditions for transfer of the Project to a public or private owner/operator leave out the public entirely. The Agreement states that transfer of the XL Agreement to any future owner is subject to "the satisfaction and *unreviewable* discretion of EPA, the State of NC, and all applicable local agencies..." (emphasis added) This provision poses a danger to the community and all future XL programs.

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ADDENDA - 5 pages

- 1) TEST RESULTS - GROUNDWATER + SW NOV 1999 - 2pp
- 2) SEISMIC IMPACT ZONE INFORMATION --- 3pp

Buncombe County New Facility

Sample Date	Site ID	Analyte	Result	Units
11/02/1999	SW-1	TRANS-1,2-DICHLOROETHYLENE	<1	ug/L
11/02/1999	SW-1	TRANS-1,3-DICHLOROPROPENE	<1	ug/L
11/02/1999	SW-1	TRANS-1,4-DICHLORO-2-BUTENE	<4	ug/L
11/02/1999	SW-1	TRICHLOROETHYLENE	<1	ug/L
11/02/1999	SW-1	TRICHLOROFLUOROMETHANE	<1	ug/L
11/02/1999	SW-1	VINYL ACETATE	<5	ug/L
11/02/1999	SW-1	VINYL CHLORIDE	<1	ug/L
11/02/1999	SW-1	XYLENES	<1	ug/L
11/02/1999	SW-1	CONDUCTIVITY IN FIELD	115	umhos/cm
11/02/1999	SW-1	DIBROMOCHLOROPROPANE	<.02	ug/L
11/02/1999	SW-1	ETHYLENE DIBROMIDE	<.02	ug/L
11/02/1999	SW-1	pH IN FIELD	7.41	pH UNITS
11/02/1999	SW-1	TEMPERATURE IN FIELD	11.5	DEG C
11/01/1999	MW-8D	Antimony	<5	ug/L
11/01/1999	MW-8D	Arsenic	<5	ug/L
11/01/1999	MW-8D	Barium	50	ug/L
11/01/1999	MW-8D	Beryllium	<1	ug/L
11/01/1999	MW-8D	Cadmium	<1	ug/L
11/01/1999	MW-8D	Chromium	2	ug/L
11/01/1999	MW-8D	Cobalt	<5	ug/L
11/01/1999	MW-8D	Copper	<5	ug/L
11/01/1999	MW-8D	Lead	<4	ug/L
11/01/1999	MW-8D	Nickel	<5	ug/L
11/01/1999	MW-8D	Selenium	<5	ug/L
11/01/1999	MW-8D	Silver	<5	ug/L
11/01/1999	MW-8D	Thallium	<2	ug/L
11/01/1999	MW-8D	Vanadium	<5	ug/L
11/01/1999	MW-8D	Zinc	30	ug/L
11/01/1999	MW-8D	1,1,1,2-TETRACHLOROETHANE	<1	ug/L
11/01/1999	MW-8D	1,1,1-TRICHLOROETHANE	<1	ug/L
11/01/1999	MW-8D	1,1,2,2-TETRACHLOROETHANE	<.2	ug/L
11/01/1999	MW-8D	1,1,2-TRICHLOROETHANE	<1	ug/L
11/01/1999	MW-8D	1,1-DICHLOROETHANE	<1	ug/L
11/01/1999	MW-8D	1,1-DICHLOROETHYLENE	<1	ug/L
11/01/1999	MW-8D	1,2,3-TRICHLOROPROPANE	<1	ug/L
11/01/1999	MW-8D	1,2-DICHLOROETHANE	<1	ug/L
11/01/1999	MW-8D	1,2-DICHLOROPROPANE	<1	ug/L
11/01/1999	MW-8D	2-HEXANONE	<5	ug/L
11/01/1999	MW-8D	4-METHYL-2-PENTANONE	<5	ug/L
11/01/1999	MW-8D	ACETONE	<5	ug/L
11/01/1999	MW-8D	ACRYLONITRILE	<4	ug/L
11/01/1999	MW-8D	BENZENE	<1	ug/L
11/01/1999	MW-8D	BROMOCHLOROMETHANE	<1	ug/L
11/01/1999	MW-8D	BROMODICHLOROMETHANE	<.6	ug/L
11/01/1999	MW-8D	BROMOFORM	<1	ug/L
11/01/1999	MW-8D	CARBON DISULFIDE	<1	ug/L
11/01/1999	MW-8D	CARBON TETRACHLORIDE	<1	ug/L
11/01/1999	MW-8D	CHLOROBENZENE	<1	ug/L
11/01/1999	MW-8D	CHLOROETHANE	<1	ug/L
11/01/1999	MW-8D	CHLOROFORM	<1	ug/L
11/01/1999	MW-8D	CIS-1,2-DICHLOROETHYLENE	<1	ug/L
11/01/1999	MW-8D	CIS-1,3-DICHLOROPROPENE	<1	ug/L
11/01/1999	MW-8D	DIBROMOCHLOROMETHANE	<1	ug/L
11/01/1999	MW-8D	ETHYLEBENZENE	<1	ug/L
11/01/1999	MW-8D	METHYL BROMIDE	<1	ug/L
11/01/1999	MW-8D	METHYL CHLORIDE	<1	ug/L
11/01/1999	MW-8D	METHYL ETHYL KETONE	<5	ug/L
11/01/1999	MW-8D	METHYL IODIDE	<1	ug/L
11/01/1999	MW-8D	METHYLENE BROMIDE	<1	ug/L
11/01/1999	MW-8D	METHYLENE CHLORIDE	2	ug/L
11/01/1999	MW-8D	o-DICHLOROBENZENE	<1	ug/L
11/01/1999	MW-8D	p-DICHLOROBENZENE	<1	ug/L
11/01/1999	MW-8D	STYRENE	<1	ug/L
11/01/1999	MW-8D	TETRACHLOROETHYLENE	<1	ug/L
11/01/1999	MW-8D	TOLUENE	<1	ug/L
11/01/1999	MW-8D	TRANS-1,2-DICHLOROETHYLENE	<1	ug/L
11/01/1999	MW-8D	TRANS-1,3-DICHLOROPROPENE	<1	ug/L
11/01/1999	MW-8D	TRANS-1,4-DICHLORO-2-BUTENE	<4	ug/L
11/01/1999	MW-8D	TRICHLOROETHYLENE	<1	ug/L

Buncombe County New Facility

Sample Date	Site ID	Analyte	Result	Units
11/02/1999	SW-2	ETHYLEBENZENE	<1	ug/L
11/02/1999	SW-2	METHYL BROMIDE	<1	ug/L
11/02/1999	SW-2	METHYL CHLORIDE	<1	ug/L
11/02/1999	SW-2	METHYL ETHYL KETONE	<5	ug/L
11/02/1999	SW-2	METHYL IODIDE	<1	ug/L
11/02/1999	SW-2	METHYLENE BROMIDE	<1	ug/L
11/02/1999	SW-2	METHYLENE CHLORIDE	<1	ug/L
11/02/1999	SW-2	o-DICHLOROENZENE	<1	ug/L
11/02/1999	SW-2	p-DICHLOROENZENE	<1	ug/L
11/02/1999	SW-2	STYRENE	<1	ug/L
11/02/1999	SW-2	TETRACHLOROETHYLENE	<1	ug/L
11/02/1999	SW-2	TOLUENE	<1	ug/L
11/02/1999	SW-2	TRANS-1,2-DICHLOROETHYLENE	<1	ug/L
11/02/1999	SW-2	TRANS-1,3-DICHLOROPROPENE	<1	ug/L
11/02/1999	SW-2	TRANS-1,4-DICHLORO-2-BUTENE	<4	ug/L
11/02/1999	SW-2	TRICHLOROETHYLENE	<1	ug/L
11/02/1999	SW-2	TRICHLOROFLUOROMETHANE	<1	ug/L
11/02/1999	SW-2	VINYL ACETATE	<5	ug/L
11/02/1999	SW-2	VINYL CHLORIDE	<1	ug/L
11/02/1999	SW-2	XYLENES	<1	ug/L
11/02/1999	SW-2	CONDUCTIVITY IN FIELD	161	umhos/cm
11/02/1999	SW-2	DIBROMOCHLOROPROPANE	<.02	ug/L
11/02/1999	SW-2	ETHYLENE DIBROMIDE	<.02	ug/L
11/02/1999	SW-2	pH IN FIELD	6.61	pH UNITS
11/02/1999	SW-2	TEMPERATURE IN FIELD	13.6	DEG C
11/02/1999	SW-3	Antimony	<5	ug/l
11/02/1999	SW-3	Arsenic	<5	ug/l
11/02/1999	SW-3	Barium	130	ug/l
11/02/1999	SW-3	Beryllium	<1	ug/l
11/02/1999	SW-3	Cadmium	<1	ug/l
11/02/1999	SW-3	Chromium	12	ug/l
11/02/1999	SW-3	Cobalt	50	ug/l
11/02/1999	SW-3	Copper	9	ug/l
11/02/1999	SW-3	Lead	<4	ug/l
11/02/1999	SW-3	Nickel	90	ug/l
11/02/1999	SW-3	Selenium	<5	ug/l
11/02/1999	SW-3	Silver	<5	ug/l
11/02/1999	SW-3	Thallium	<2	ug/l
11/02/1999	SW-3	Vanadium	15	ug/l
11/02/1999	SW-3	Zinc	70	ug/l
11/02/1999	SW-3	1,1,1,2-TETRACHLOROETHANE	<1	ug/L
11/02/1999	SW-3	1,1,1-TRICHLOROETHANE	<1	ug/L
11/02/1999	SW-3	1,1,2,2-TETRACHLOROETHANE	<.2	ug/L
11/02/1999	SW-3	1,1,2-TRICHLOROETHANE	<1	ug/L
11/02/1999	SW-3	1,1-DICHLOROETHANE	<1	ug/L
11/02/1999	SW-3	1,1-DICHLOROETHYLENE	<1	ug/L
11/02/1999	SW-3	1,2,3-TRICHLOROPROPANE	<1	ug/L
11/02/1999	SW-3	1,2-DICHLOROETHANE	<1	ug/L
11/02/1999	SW-3	1,2-DICHLOROPROPANE	<1	ug/L
11/02/1999	SW-3	2-HEXANONE	<5	ug/L
11/02/1999	SW-3	4-METHYL-2-PENTANONE	<5	ug/L
11/02/1999	SW-3	ACETONE	28	ug/L
11/02/1999	SW-3	ACRYLONITRILE	<4	ug/L
11/02/1999	SW-3	BENZENE	<1	ug/L
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11/02/1999	SW-3	BROMOFORM	<1	ug/L
11/02/1999	SW-3	CARBON DISULFIDE	<1	ug/L
11/02/1999	SW-3	CARBON TETRACHLORIDE	<1	ug/L
11/02/1999	SW-3	CHLOROENZENE	<1	ug/L
11/02/1999	SW-3	CHLOROETHANE	<1	ug/L
11/02/1999	SW-3	CHLOROFORM	<1	ug/L
11/02/1999	SW-3	CIS-1,2-DICHLOROETHYLENE	<1	ug/L
11/02/1999	SW-3	CIS-1,3-DICHLOROPROPENE	<1	ug/L
11/02/1999	SW-3	DIBROMOCHLOROMETHANE	<1	ug/L
11/02/1999	SW-3	ETHYLEBENZENE	<1	ug/L
11/02/1999	SW-3	METHYL BROMIDE	<1	ug/L
11/02/1999	SW-3	METHYL CHLORIDE	<1	ug/L
11/02/1999	SW-3	METHYL ETHYL KETONE	<5	ug/L

7.9 FAULT AREAS

Section 258.13 of the new Subtitle D regulations restrict the siting of new landfills and lateral expansions of existing landfills within 200 feet of a fault which has experienced displacement during or since, the Holocene geologic epoch. These regulations define a Holocene fault "zone" to include not only the actual primary fracture along which strata on one side has been displaced with respect to the other side, but also, the appropriate zone (or zones) of rock which have been fractured in any geologic material along which there has been an observable amount of displacement of the sides relative to each other.

EPA has effectively banned siting and construction of landfills within 200 feet of Holocene fault zones unless a demonstration to the Director of an approved State program can be made which verifies that the integrity of the landfill will be protective of human health and the environment, and, that the structural integrity of the landfill will not be compromised if built within a Holocene fault zone.

The United States Geological Survey (USGS) has published a field study map (Howard, et al., 1978) which illustrates the occurrence of "young" faults throughout the United States. Figure 7-3, which presents a portion of this map, illustrates the structural setting and occurrence of Holocene or younger faults in the vicinity of Buncombe County. As seen, no Holocene or younger faults are illustrated in the county and hence near the proposed solid waste management facility site. Therefore, it is concluded that the site is not located within 200 feet of a Holocene fault zone and thus the site complies with this regulation.

7.10 SEISMIC IMPACT ZONES

Section 258.14 of the new Subtitle D regulations restrict the siting of new landfills and lateral expansion of existing landfills in seismic impact zones (SIZ). The rules state that "new MSWLF units and lateral expansions shall not be located in SIZs unless the owner or operator demonstrates to the Director of an approved State that all containment structures, including

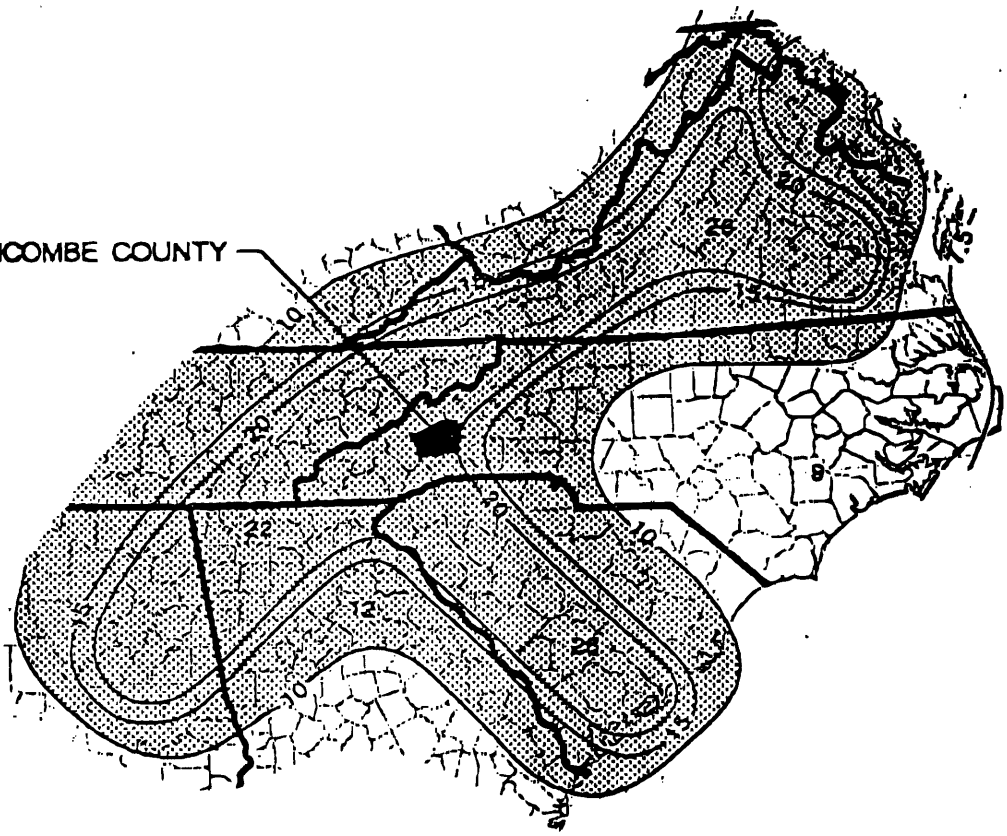
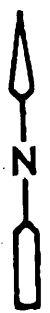
liners, leachate collection systems, and surface water control systems, are designed to resist the maximum horizontal acceleration in lithified earth material for the site". EPA defines a SIZ as those "areas having a 10 percent or greater probability that the maximum expected horizontal acceleration in hard rock, expressed as a percentage of the earth's gravitational pull (g), will exceed 0.10g in 250 years".

Several different sources exist which define the location and extent of SIZs, however, the primary source referenced in the Subtitle-D regulations is a United States Geological Survey (USGS) Open File Report (Algermissen et al. 1982) which delineates a risk map for those areas in the United States which exceed 10 percent or more probability of seismic impact. Figure 7-4 presents a portion of the risk map which covers the entire State of North Carolina. As can be seen in this figure, Buncombe County, like almost half of the State of North Carolina, lies in the shaded area indicating that is within what is defined as a seismic impact zone. During preparation of the Construction Plan Application, the proper calculations and design considerations will be addressed and completed to insure that the proposed solid waste disposal areas are designed to withstand the threshold horizontal acceleration specified above.

7.11 UNSTABLE AREAS

Section 258.15 of the new Subtitle D regulations restrict the siting of new landfills and lateral expansions of existing landfills in geologically unstable areas, such as those areas characterized by poor foundation conditions, areas susceptible to mass movements, and Karst terrains. The regulations require owners or operators of new MSWLF units, lateral expansions, and existing MSWLF units located in unstable areas to demonstrate to the satisfaction of the Director of an approved State program that the integrity of the structural components of the unit will not be disrupted. The structural components include liners, leachate collection systems, final cover systems, run-on and run-off control systems, and any other component used in the construction and operation of the MSWLF unit that is necessary for protection of human health and the environment.

BUNCOMBE COUNTY



EXPLANATION

— 5 — Contour--Horizontal acceleration expressed as percent of gravity. Some areas show acceleration values without contours. Hachures indicate closed area of lower acceleration. No data available for Hawaii and Puerto Rico

Albers Equal Area Projection

SCALE 1:7,500,000



HORIZONTAL ACCELERATION
(90 PERCENT PROBABILITY OF NOT BEING EXCEEDED IN 250 YEARS)

(From Algermissen et al., 1990)

CDM

environmental engineers, scientists,
planners & management consultants

HORIZONTAL ACCELERATION MAP

Figure 7-4