ATTACHMENT 10

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MACON COUNTY
SOLID WASTE MANAGEMENT
DEPARTMENT

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Memo

Date: February 20, 2008
To: Members, EEHW
From: Sherri L. Ludlam, Director
Subj.: Clinton Landfill #3 Chemical Waste Unit

Please find attached a synopsis of Department research into the Clinton Landfill #3 Chemical Waste Unit. The research included reviewing the Official Application, the Toxic Substances Control Act (TSCA), The Illinois Environmental Protection Act, the DeWitt County Siting Resolution and Findings of Fact, Agency for Toxic Substances and Disease Registry, the landfill's operating record, and conversations with the USEPA permit reviewer and our Regional Manager of IEPA.

The information gathered demonstrated that points made by both organizations were valid.

The Application seems to meet and/or exceeds the requirements of TSCA.

Clinton LF #3 Chemical Waste Unit

The Permit Application

As stated in the presentations, the permit application filed with USEPA is for a 22 acre unit in the southwest corner of a Resource Conservation and Recovery Act (RCRA) Subtitle D landfill. It will share one composite liner. At the base of the units will be an earthen berm, and the CWU will have additional liner components on one side of the berm, municipal solid waste (MSW) will be tipped on the other. After a certain amount of fill, the "cells" will be separated by daily or intermediate cover. However, the design indicates, and plans state that MSW will be placed above portions of the CWU. The siting application for the Subtitle D unit was incorporated in the USEPA TSCA application.

The application Operating Plan clearly states that the Chemical Waste Unit (CWU) will accept RCRA regulated non-hazardous industrial process and pollution control wastes, but will not accept municipal solid wastes (MSW). The "Manner of Waste Placement" section also states on page 6-11 "the facility will not accept wastes that are incompatible with PCBs and PCB items, such as organic solvents".

The Technical Requirements of the Application

The TSCA regs are written so that the Regional Administrator of the USEPA "may" issue a permit when all of the listed conditions and requirements are met. The State's Attorney's Office would be the source to clarify the differences between statutory "may", "shall", or "will".

As mentioned above, the Regional Administrator "may" approve the application if all the conditions are met. The proposed landfill operator must submit an initial report (basically the application), and any other information that the Regional Administrator may find reasonably necessary to determine whether the CWU should be approved. As shown in the table, Area has addressed each issue and in some cases exceeded the requirements.

Technical Requirements (excerpted from 40 CFR 761.75)

Statute	Requirement	Area Application
(1) Soils. The landfill site shall be located in thick relatively impermeable formations such as large-area clay pans.		Exposed to Berry Clay, backfilled with compacted 1 x 10^{-7} clay
(i) In place soil thickness	4 feet or compacted 3 feet	
(ii) Permeability (cm/sec)	$\geq 1 \times 10^{-7}$	
(iii) Soil Passing #200 Sieve	>30 %	
(iv) Liquid Limit	>30 % and	
(v) Plasticity Index	>15%	
(2) Synthetic membrane liners.	A minimum of 30 mils	Multiple 60 mils

(3) Hydrologic conditions. The bottom of the LF shall be above the historical high groundwater table.	Floodplains, shorelands, and groundwater recharge areas shall be avoided. There shall be no hydraulic connection between the site and standing or flowing surface water. The site shall have monitoring wells and leachate collection. The bottom of the LF liner system or natural in-place soil barrier shall be at least 50 ft. from the historical high water table.	Yes
(4)Flood Protection (i) Below the 100 year flood (ii)Above 100 year flood	 Requires diversion dykes to above 100 year level Requires diversion for 24 hour 25 year storm	 No Yes
(5) Topography	Low to moderate relief	Yes
(6) Monitoring systems (i) Water sampling (A) Ground and surface water (B)Surface water monitoring (C) Surface water monitoring (ii) Groundwater monitoring wells (A) Homogenous, impermeable, and uniformly sloping earth materials (B) Monitoring wells (iii)Water Analysis	 Monitoring before operations As designated by Regional Administrator Designated 3 wells equally spaced Cased, backfilled, cemented, capped Samples, and record keeping for PCBs, pH, Specific conductance, and Chlorinated organics	 Yes As designated Every 6 months post closure 9 wells equally spaced Yes Yes
(7) Leachate collection	Compound leachate collection	Yes
(8)Operations (i) Waste placement and compatibility (ii) Operations plan (iii)Ignitable wastes banned (iv)Records		 Yes Yes Yes Yes

(9)Supporting facilities (i) 6 foot fence	Prevent unauthorized persons or animals access	Yes
(ii)Roads	Adequate to support operations and maintenance without safety or nuisance problems or hazardous conditions	Yes
(iii)Operated and maintained	Prevent safety problems or hazardous conditions	Yes

Section (c) (3) Contents of Approval states: "the Regional Administrator may not approve a chemical waste landfill for the disposal of PCBs and PCB Items, unless he finds that the landfill meets all of the requirements of paragraph (b) of this section." The Regional Administrator may include in an approval any other requirements or provisions that he finds are necessary to ensure that the facility does not present an unreasonable risk of injury to health or the environment from PCBs.

History of the Toxic Substances Control Act

The Toxic Substances Control Act (TSCA) was first enacted in 1976 and has been amended significantly 3 times. The Act provides the USEPA authority to regulate the manufacture, use, distribution in commerce and disposal of chemical substances (a "cradle to grave" program authority).

The major objective of TSCA is to characterize and evaluate the risks posed by a chemical to humans and the environment before the chemical is introduced into commerce. It has requirements for health and environmental testing, quality control in production processes and notification of possible adverse health effects from use. It includes "importing" under "manufacturing" and therefore applies various requirements to both manufacturers and importers.

It also gives the EPA authority to ban the manufacture or distribution, limit uses, require labeling or place other restrictions on chemicals that pose unreasonable risks. A ban on the manufacture of polychlorinated biphenyls(PCBs) went into effect in 1977. Specific regulations for PCBs are under Section 6 of TSCA. Then, in 1988, EPA issued final amendments to the "Uncontrolled PCBs Rule" which excluded materials containing less than 50 ppm PCBs from some regulations under certain conditions and industries.

Congressional committees, however, cited concerns about EPA's disposal program, particularly, 1) the lack of an effective system to track PCB wastes in a "cradle to grave" method; and 2) the lack of oversight of activities and qualifications of PCB waste brokers and intermediate storage facilities. So the Notification and Manifesting Rule was published in December 1989, which is based upon the RCRA model for tracking hazardous wastes. The Rule tightened up tracking and notification of waste activities, written approvals for storage facility standards, additional record keeping and reporting requirements to facilitate EPA's enforcement of the regulations.

Polychlorinated biphenyls

Polychlorinated biphenyls (PCB's) are indeed a nasty class of chemicals which did a fine job serving their original purpose, until it was discovered that they have some difficult side effects. In the case of PCB's, one of its benefits is also the source of "unreasonable risk of injury to human health and the environment". They do not break down readily in the environmental and may remain there for very long periods of time. They can travel long distances by air and be deposited far away from the original release site. In water, a small amount (generally dependent of the specific PCB chemical) may remain dissolved but most deposit to organic particles and bottom sediments. They bind strongly to soils. Thus PCBs stability manifests in bioaccumulation in the food chain, as the chemicals are taken up and stored in fatty tissues.

Most of the studies of the health effects of PCBs examined occupational exposure. The most common effects from exposure to large amounts of PCBs are acne and rashes. Specimen samples from exposed workers have shown changes that may indicate liver damage. Others indicate an association with certain kinds of cancers - cancer of the liver or biliary tract. Liver cancer developed in rats ingesting high levels of PCBs during two year studies. The Department of Health and Human Services has concluded that PCBs may reasonably be anticipated to be carcinogens. Most of the studies in the general population examined children of mothers exposed to PCBs, either occupationally, or from contaminated fish, and indicated lower birth weights, motor skill problems and a decrease in short-term memory when compared to non-exposed mothers. There are no reports of structural birth defects or of health effects in older children. The mostly likely route of exposure for infants is through breast milk. In most cases, the benefits of breast-feeding outweigh the risks from exposure to PCBs in mother's milk.

When tested, it is found that most people normally have low levels of PCBs in their bodies because of widespread environmental exposure.

The Resource Conservation and Recovery Act

The Resource Conservation and Recovery Act (RCRA) and the Toxic Substances Control Act (TSCA) were both passed in 1976. RCRA was amended with the Hazardous and Solid Waste Amendments in 1984, which significantly expanded the scope and requirements of RCRA.

Subtitle C of RCRA regulates hazardous wastes, under specific definitions; and Subtitle D non-hazardous waste, and provide the basis for landfill regulations as administered by delegation from the Federal EPA to the state level at Illinois EPA. The Feds did not delegate authority of TSCA. Due to that regulatory relationship, the siting authority of Section 39.2 of the Illinois Environmental Protection Act does not apply to TSCA waste.