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HAZARDOUS WASTE: STORAGE RIGHTS IN SALT MINES

House Bill 4055 (Substitute H-1) First Analysis (6-17-97)

Sponsor: Rep. Ilona Varga
**Committee: Conservation, Environment
and Recreation**

THE APPARENT PROBLEM:

During the late 1980s, Michigan joined other states in a search for new options for disposing of hazardous waste. At the time, the state had no commercial hazardous waste incinerators, and only one commercial hazardous waste landfill, which was rapidly reaching capacity. Proposals to use salt formations for waste disposal sparked the interest of the Michigan's waste management industry. The concept was not new. Salt mines were contemplated for nuclear waste disposal during the late 1950s. During the 1960s and 1970s, federal research by the Atomic Energy Commission and the National Academy of Sciences on nuclear waste disposal in the salt deposits of New Mexico led to the Waste Isolation Pilot Plant (WIPP) project. In Germany, hazardous waste has been stored in an abandoned potash mine at the Herfa-Neurode site since 1972. (See BACKGROUND INFORMATION.)

One salt mine in Michigan was being considered for subsurface hazardous waste disposal. Crystal Mines, Inc. (CMI) in Detroit had purchased mineral rights from surface owners, and the company had announced that it would apply for a hazardous waste disposal facility permit. The facility would have been located in open and idle spaces of the mine. The conversion never took place. However, speculation over the proposal reportedly led to plummeting property values on properties located over or near the mine. Declining property values led to falling property taxes, and the area -- near the River Rouge -- has never recovered economically. Many people have maintained, since then, that property owners in the area were inadequately compensated when they sold the mineral rights to their land. It has been suggested that they should also have been compensated for the space, as well as the minerals, beneath their property. In order to ensure that, in the future, property owners are adequately compensated in such situations, legislation has been proposed to require that a person who is planning to store hazardous waste in a salt mine first purchase storage and passage rights from surface owners.

THE CONTENT OF THE BILL:

The bill would add a new section to Part 111 of the Natural Resources and Environmental Protection Act, which regulates Hazardous Waste Management, to require that a person who seeks to use a salt bed formation for a treatment, storage, or disposal facility first obtain the storage and passage rights for that portion from surface owners, or the persons who have acquired those rights, before submitting an application for a construction permit. In addition, the applicant would have to provide for sealing off all openings to other portions of the salt bed formation in which the applicant did not hold the storage and passage rights. Evidence of compliance with this provision would have to be submitted together with a construction permit application.

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BACKGROUND INFORMATION:

Hazardous waste is disposed of through a variety of disposal and treatment methods, including incineration, recycling treatment to remove or neutralize hazardous constituents, and injection down wells to geologic formations below the earth's surface. In addition, the potential for using salt mine space to store hazardous waste was debated in Michigan for several years. The Legislative Service Bureau's (LSB) Science and Technology Division prepared a report on the subject, entitled *Michigan Salt Formations: Potential for Use in Hazardous Waste Management*, dated February, 1989. The report noted that Michigan's lower peninsula is commonly termed a "geological basin," meaning an area where extensive layers of sedimentary rocks have formed over a period of millions of years. One of these layered rock formations is the Salina Formation, which includes thick layers of limestones and bedded deposits of rock salt more than 1,000 feet below the surface of the earth.

The LSB report identified three reasons why large, subsurface rock salt deposits such as the Salina formation

House Bill 4055 (6-17-97)

could be particularly useful for hazardous waste disposal: plasticity, dryness, and the ability to withstand large loads. Salt can handle a great deal of stress without fracturing, since it deforms plastically (i.e., it changes shape permanently). This same plasticity enables salt to move into cracks and fractures to seal up openings. Also, salt is soluble in water. Therefore, where there are large quantities of salt, it is not expected that there will be much water. Other safety and economic benefits are identified in the report. For example, the area of the state that generates the most hazardous waste also covers massive salt deposits. Therefore, the waste would not need to be transported far. In addition, underground storage is less expensive than surface disposal, since it takes up less land. Another benefit is that salt does not react with most wastes. Finally, the Michigan geological basin lies in a region of the country that has been geologically stable in recent times, having had few earthquakes.

Crystal Mines, Inc. (CMI), which occupied a 30-acre site six and one-half miles southwest of downtown Detroit, near the River Rouge, was highlighted in the LSB report as a possible hazardous waste disposal facility. However, several concerns regarding CMI were also identified in the report. The most significant of these were water and drainage problems. Water from overlying rock formations drains into the mine along the mine shafts. At the time, this water could easily be pumped out. However, a closure plan is required as part of an operating license for hazardous waste disposal facilities, and the mine shaft would have to be sealed to ensure there was no leakage of hazardous waste. If water entered the mine after it was sealed, solid wastes could leak out. CMI's plans were never finalized. In any case, according to the Department of Environmental Quality, the state has reduced its generation of hazardous waste since the mid-1980s, and the option of storing waste in salt mines is no longer being considered.

FISCAL IMPLICATIONS:

According to the House Fiscal Agency (HFA), the bill has no fiscal implications for the state. (6-11-97)

ARGUMENTS:

For:

No one wants to live near hazardous waste, no matter how far below the earth's surface it is stored, nor how up-to-date is the technology used to contain it. So, once rumors circulated that Detroit's old salt mine would be used as a hazardous waste storage facility, property owners in the area of the mine found it next to impossible to sell their homes or businesses. Plans to use the mine never materialized. However, property

values in the area near the mine have remained depressed. This would not have been the case had CMI been required to purchase rights to the space left after salt mining is completed. The bill should, however, act as an insurance policy for persons now attempting to sell property in the area, since concerns that hazardous waste might be stored in the mine would be overridden by the assurance that mine-owners would have to compensate them for their storage rights.

POSITIONS:

The Department of Environmental Quality (DEQ) supports the bill. (6-11-97)

The Michigan Environmental Council (MEC) has no position the bill. (6-11-97)

The National Federation of Independent Business (NFIB) has no position on the bill. (6-11-97)

The Michigan Bankers Association has no position on the bill. (6-11-97)

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■ This analysis was prepared by nonpartisan House staff for use by House members in their deliberations, and does not constitute an official statement of legislative intent.