

**BENZENE IN BRINE RAISES NEW TOXICITY QUESTIONS - Columbus Dispatch, The (OH) - April 17, 1986 - page 1E**

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The environmental surprise of 1986 in Ohio just may be a toxic potion called benzene in brine.

Brine is a salt-water remnant from when seas covered Ohio. Brine is deep in the earth but brought to the surface by drillers seeking oil and gas. Released from its tomb, it is a pollutant in our world, spoiling wells and streams and killing vegetation unless properly handled.

The Ohio General Assembly thought it disposed of the brine problem last year when it enacted legislation phasing out the use of earthen holding pits, more tightly regulating brine shipment and disposal, and increasing penalties for brine dumping. But that was before the benzene was detected.

BENZENE, a poisonous industrial compound and a known carcinogen, is not the sort of stuff you want in your drinking water. There is no federal standard, but the proposed maximum is five parts per billion in public water supplies, with a preferred goal of less than one part per billion.

Renee Houser, chief of the Oil and Gas Division of the Ohio Department of Natural Resources, said recent brine samples from 25 drilling sites revealed benzene concentrations ranging from 70 to 10,000 parts per billion. The average concentration was 2,000 parts per billion, she said.

WORD OF the high benzene concentrations led to a March 7 conference March 7 of officials of the Ohio Department of Natural Resources, the Ohio Environmental Protection Agency and Gov. Richard F. Celeste's office. They decided to conduct more tests while moving to restrict the use of brine as a road de-icer. Brine is used for this in many southern and southeastern Ohio counties.

"I would say at this point the benzene is viewed as a concern rather than as an emergency," Natural Resources Director Joseph Sommer said. The initial sampling raised a host of questions that need to be resolved before other steps can be considered, he said.

Nevertheless, the administration announced Tuesday it will seek legislation to prohibit the use of brine as a de-icer on roads and will move by regulation to prevent brine from being disposed of by putting it back in operating oil and gas wells.

The latter technique, called "annular" disposal, seeks to return brine to its original deposits by putting it down between the well casings. State officials say the casings leak and brine gets into ground water aquifers, thus the technique should be phased out over a five-year period.

"The governor's office is very interested in moving forward on this and not waiting for further test results," Sommer said.

STATE OFFICIALS also could move to classify brine as a hazardous waste material in Ohio, which would limit disposal options and require drillers and brine haulers to prepare detailed manifests on

all brine shipments.

Ohio produces 160,000 barrels of brine a day, and much of that is used for county snow and ice removal, a practice allowed by the 1985 brine control bill. Houser said about 200 local governments use brine wastes on their roads.

Kirk Jordan, executive vice president of the Ohio Oil and Gas Association, said use of brine on roads reduces industry disposal costs while saving local governments money on salt.

"It would cost some jurisdictions \$100,000 a year to replace brine with other salts," he said.

BECAUSE BENZENE evaporates quickly when exposed to the air, it is questionable whether the concentrations found represent a real threat to ground water, Jordan said. "They tested the brine in the tank essentially in the same form it came out of the ground. The question is what happens to that benzene as it is transferred to the tank truck, spread on the road surface and interacts with the soil."

The association is asking Battelle Memorial Institute in Columbus to evaluate benzene risks in view of the effects new controls would have on drillers, he said.

Russell Stein, chief of the Ohio EPA's Groundwater Section, said benzene has never been detected in brine-polluted wells and aquifers because nobody ever specifically looked for it. Before brine could be categorized as a hazardous waste material, evidence would have to show excess concentrations of benzene in ground water, not just in brine, he said.

Stein said he suspects brine is a relatively inconsequential source of benzene pollution as compared to the benzene known to seep into the atmosphere from gasoline pumps or into the ground from leaking gasoline or fuel oil tanks or pipelines.

Nevertheless, he said, he supports controls on road use of brine.

"I think we have to take a close look at how brine is disposed of in Ohio. It should only go into injection wells where it can be returned to the same place it came from," he said.

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