



PDR

40-8502

ED HERSCHLER
GOVERNOR

Department of Environmental Quality

LAND QUALITY DIVISION
DISTRICT IV OFFICE

30 EAST GRINNELL STREET

TELEPHONE 307-672-6488

SHERIDAN, WYOMING 82801

TO THE FILE

TO FILE: Wyoming Mineral Corporation, Permit No. 478
FROM: Dennis Morrow, District IV Engineer *DM*
DATE: July 8, 1980
SUBJECT: Evaporation Pond Leak



Donna Wichers called this morning to report a leak in high TDS evaporation pond "C". The leak was detected yesterday as part of the weekly pond monitoring. Leakage from the pond was estimated to be between 15-20 gpm.

Approximately 8 - 12" of water was discovered in the tubes under the pond. A partial analysis of a sample of the tube water was available as follows:

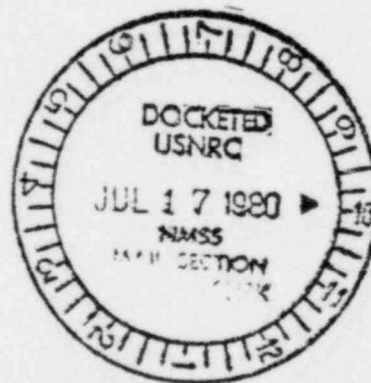
Cl. 2,809
Cond. 11,940

These values are somewhat lower than the pond water, indicating possible absorption of contaminants by the soil. Ammonia and uranium analyses will also be run on the water in the tubes. Uranium concentration in the water and precipitate near the bottom of the pond is approximately 500 ppm.

Plans are to pump pond "C" water into pond "D" while visually checking the pond "C" liner for leaks. Water will also be pumped from the leak detection tubes to hopefully lessen seepage into the ground.

DM/kn

cc: Donna Wichers
Terry Vandell



FEE EXEMPT 16804

THIS DOCUMENT CONTAINS
POOR QUALITY PAGES

8008010/82

In situ operation leaks chemicals; 'politics' pollutes the situation

For most of us energy from uranium is a little like steak — we eat it, but we'd rather not watch the steer being killed.

That attitude may make in situ uranium mining more palatable to a public afraid of big, dusty open pit mines: in situ involves no digging, few workers, and no radioactive dust around the site. You inject a chemical solution into one well, it leaches the uranium, and you retrieve it through another well.

No mess, no fuss.

But in the southern Powder River Basin, Wyoming's first commercial-scale in situ uranium mine has made a mess. Its toxic leaching agent, along with traces of uranium, has leaked into underground aquifers above the uranium ore bodies. And it may cause a fuss among finger-pointing regulators.

After a brief shutdown in April, the operation is going again, using a less toxic leaching agent. The federal Nuclear Regulatory Commission let Wyoming Minerals Corp. start up again without first cleaning up the aquifers it dirtied.

Meanwhile, the state Department of Environmental Quality sits on its hands and bites its tongue. Sources within the department say there are serious technical questions about the environmental dangers of the project. They say those questions have been shoved aside for a "political-type decision."

An aide to Gov. Ed Herschler (D) denies any political tampering. At most, he says, the governor has simply done some "agenda-setting" to avoid regulatory delays.

Maybe so. But the state's handling of the Wyoming Minerals operation is pumping up a lot of questions.

Why, for instance, did the state take the risk of approving a toxic leaching agent on its first commercial-in situ project, when less dangerous chemicals are also available?

Why hasn't the state insisted that the "excursions" of toxics into the water table be completely cleaned up before Wyoming Minerals goes back to work?

Why hasn't the state stepped in and set its own standards for protecting its environment, instead of letting the feds take the lead? And what can we expect

from the state in regulating two more commercial in situ uranium projects this summer?

Anonymous voices from DEQ say that the Wyoming Minerals project has been rushed before vital technical questions are answered. "Politics," they say. "Agenda-setting," says the governor's office. In this case, it's hard to see the distinction.

-6-



Opinion

Bomb the Bob if necessary

The current debate over allowing oil and gas exploration activities in wilderness areas (see "Bombing the Bob," page 10) seems unnecessarily complicated. A Utah rancher and former Montana named Cecil Garland put it in perspective for us.

If getting the oil and gas out of prime wild lands "were the last shot for man, I guess I'd let 'em do it," he told a recent gathering of the Utah Wilderness Association.

"But will I tear up the String of Pearls (a cluster of several Montana wilderness areas) for some kids to go driving up and down State Street waving at one another? No, I won't.

"Will I tear up the String of Pearls so a family can go over to Hawaii and have leis put around their necks and sit in the sun and drink pineapple juice? No I won't.

"Will I tear up the String of Pearls to fuel that vast war machine of the world? Not only no, but hell no!"

-JN



Handwritten numbers: 117, 18

ENVIRONMENT

In situ uranium project springs leak, but pumps again 478-

by Bob T. Lopez and Geoffrey O'Gara

The fate of Wyoming's first commercial-size in situ uranium mine remains uncertain following a Nuclear Regulatory Commission decision giving the operation 90 days to prove it can operate without polluting ground water near Buffalo, Wyo.

Wyoming Minerals Corp. presented a plan to the NRC last month that it claimed would prevent more "excursions" of toxic chemicals from the mine's production zone.

In situ uranium mining involves pumping chemicals down wells into a uranium deposit; there, the chemicals dissolve the mineral in solution. The uranium and the chemical leaching agent — called a "lixiviant" — are then pumped to the surface through other wells. In the case of Wyoming Minerals, the lixiviant was ammonium bicarbonate, a toxic substance that environmentalists fear may reach livestock or human water supplies.

When test wells around the site showed signs of chlorides, uranium and ammonia in April, the NRC briefly shut down the mine. NRC demanded cleanup of the stray chemicals and a new plan for preventing future leaks.

The NRC is allowing the mine to operate again for three months using a different lixiviant, sodium carbonate-bicarbonate, which would be less harmful to ground water. Sources in the

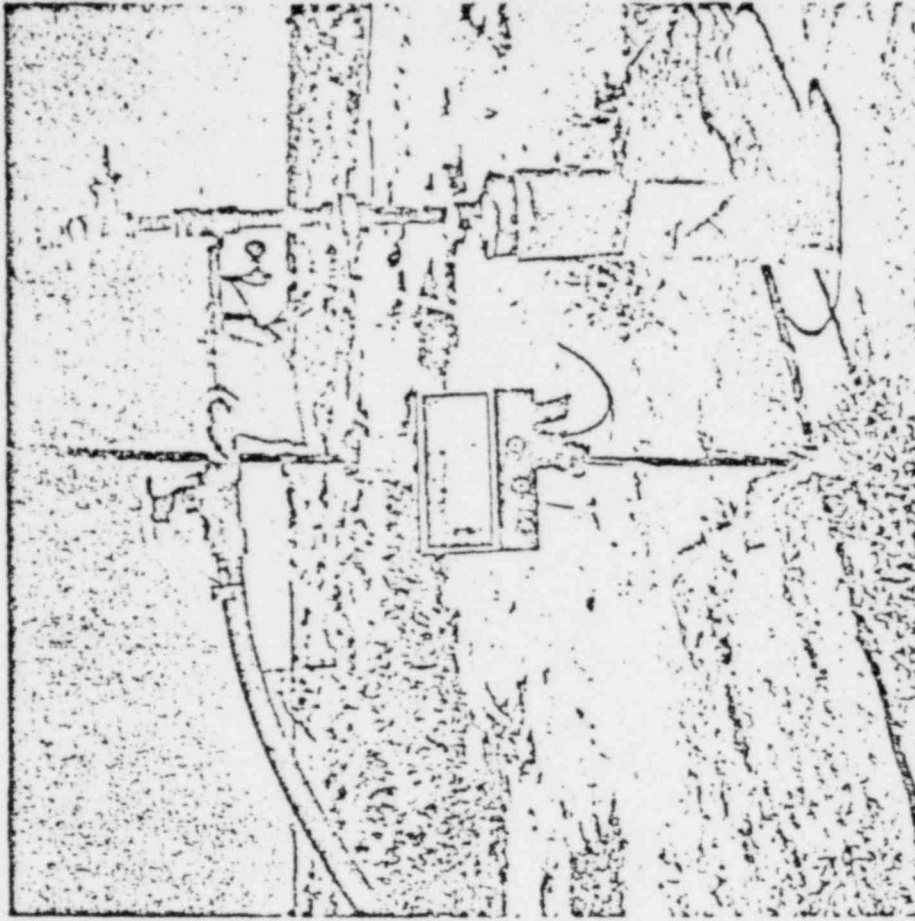
independently. Joe Roman, an attorney for the state, said, "The basis on which (the NRC) permitted (Wyoming Minerals') plan may not have been correct. We're re-evaluating."

Two sources in DEQ, who asked that their names be withheld, said that the decision to allow the mine to continue operating was, like its initial approval in 1978, "political." They said that despite numerous technical questions raised by DEQ, Gov. Ed. Herscher decided to let the operation move ahead.

The NRC has given Wyoming Minerals 90 days to present more sophisticated data proving that a confining layer of impermeable material is present above the ore zone and that the company can control the lixiviant, according to John Linehan, section chief for operating uranium recovery facilities for the Nuclear Regulatory Commission.

But previous leaks will not be cleaned up right away. "Until we know exactly what the geology is between surface and ore zone, it'll be difficult," said Linehan. "Once we know that, we'll have a pretty good idea of how to clean it up."

Ten to 15 acres were affected by the leaks. If Wyoming Minerals presents data at the end of the 90-day period indicating it can control excursions, it could be permitted to expand its operations to the 50 acres for which it was licensed. Eventually, Wyoming Minerals may agree to purchase more acreage.



INJECTION WELLS, like the one above, are used to pump chemical solutions into uranium ore bodies in the in situ mining process. After use, well heads are taken away, the well is plugged, and casings are removed to below ground level.

Photo courtesy of Wyoming Minerals Corp.

the pollution dangers of Wyoming Min- measure the extent of the problem.

Wyoming Department of Environmental Quality say the start-up was allowed before shallow sands in the area were thoroughly cleaned up. Presently, fresh water is being pumped into the contaminated area to clear contaminants. Margie Holbert of DEQ said the test wells that showed chlorides — an indication of leaks — were still within drinking water standards. One test well, she said, indicated low-level uranium and ammonia contamination.

The DEQ could close down the mine on its own, though for the moment Holbert said her agency would "go along with the NRC." But the state may move

But Konan is skeptical. "We won't let them expand," he said.

Konan's attitude is reflected among staff at DEQ, but they are less certain that the decision will be theirs. Their technical questions about the Wyoming Minerals operation have been overruled before, said one, when "it looked like (the company) just couldn't control the excursions."

Said another DEQ source: "That area is so messed up it may never get back to normal."

Reed Zars of the Powder River Basin Resource Council, which has publicized

tion may go to court. "If we feel the contamination is continuing and not cleaned up, we would strongly consider legal action," he said. But Zars said it was difficult to know how serious the contamination had been, or would be, because monitoring wells couldn't fully

Despite the problems Wyoming has experienced with its first commercial in situ uranium mining operation, a second such operation was approved last week, and a third is expected to gain approval this summer.

Exxon Corp. recently got a go-ahead from the Wyoming Department of Environmental Quality for a 70-acre in situ uranium mining operation near its Highland surface mine in the southern Powder River Basin.

Exxon will send the leaching chemical sodium carbonate-bicarbonate 400 feet down to one uranium ore body and 500 feet to another.

Exxon applied for permits 17 months ago, only to have DEQ toughen its requirements midway in the process. Initially, the agency required that the water in the mining area — which is now within federal drinking water standards — would have to be restored only to a quality suitable for livestock. Now DEQ is demanding that the water regain its original drinkability. The water is well below the aquifers presently tapped for domestic and livestock uses.

Exxon will post a bond — which a DEQ spokeswoman called "an insurance policy for the state" — of about \$71,000 for the first year of operation,

Zars, "just these little-ident warning lights like you have in your car."

Bob Tkacz is a freelance writer based in Casper, Wyo.

Incipient in situ

in addition to \$16 million in bonds already put up for its Highland operations in general. The bond is held until the area is reclaimed after extraction is completed, sometime in 1991.

The Nuclear Regulatory Commission has already approved the Exxon project.

In addition, Ogle Petroleum is about six weeks away from DEQ approval for a 56-acre in situ uranium project in the Bison Basin in Fremont County.

The Ogle operation, according to DEQ's Ed Francis, will use sodium bicarbonate as a leaching agent, or, perhaps, some more advanced technique. While sodium solutions are considered fairly safe environmentally, experts say more benign solutions are being researched.

Francis said the process of publishing Ogle's mine plans and making some adjustments will take about six weeks. Unless objections to the operation are raised during that time, DEQ will approve the plan and Ogle will begin mining.

According to DEQ's Becky Mathison, the two new operations will bring total in situ uranium mining in the state to three commercial operations and 14 smaller research and **168001** operations.



THREE COMMERCIAL in situ uranium projects are operating, approved