



ENEMIES OF THE PEOPLE:

ASBESTOS

AND THE RESERVE MINING TRIAL

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On April 20, 1974, at 5:15 P.M., United States District Court Judge Miles W. Lord issued an order from his Minneapolis courtroom enjoining Reserve Mining Company from discharging wastes into the water and air of Lake Superior. At the heart of this ruling was concern about the potential health effects of a substance found in the wastes: asbestos or asbestos-like mineral fibers. Judge Lord's injunction shut down one of the largest iron-mining enterprises in the United States. From its base in northeastern Minnesota, Reserve employed 3,200 workers. It supplied 15 percent of the iron used annually by the American steel industry—and nearly all the iron requirements of Reserve's joint owners, Armco and Republic Steel corporations, the nation's third and fourth largest steel firms.¹

FACING PAGE: Cars loaded with taconite moving through the dumper building at Reserve Mining Company's Silver Bay plant, about 1960

Since 1955 Reserve had been depositing vast quantities of ore tailings (reaching 67,000 tons daily after 1964) directly into Lake Superior, the greatest freshwater lake in the world. These tailings were the detritus left from milling taconite, a low-grade iron-bearing rock mined from northern Minnesota's Mesabi Range. Concerns about this discharge had embroiled Reserve, the State of Minnesota, and the federal government in a divisive political struggle since 1969.

Although the U.S. Court of Appeals temporarily stayed the injunction two days later and Reserve Mining resumed operation, Lord's order proved to be an important piece of one of the longest environmental trials in American history. It was a significant moment for Minnesota's—and the nation's—environmental movement, rising in the 1970s as a countervailing force to the power of American industry. The asbestos controversy was an early instance in which medical evidence about environmental carcinogens was presented in a court case that pitted the dire consequences of a potential public-health disaster

against the dire consequences of a potential economic and social collapse. During the August 1973–April 1974 trial, almost every asbestos expert in the world testified or presented evidence for the plaintiffs or defendants. The terms of this debate—the contentious interweaving of law and science—are now a hallmark of environmental disputes in the United States.

In February 1972, at the behest of the Environmental Protection Agency (EPA), the Department of Justice had filed suit against Reserve in the U.S. District Court in Minneapolis for violating federal pollution-control laws. The Honorable Miles Lord was selected as judge for the case. Since it was a civil suit for an injunction, Lord would sit without

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Miles Lord, 1959, during his tenure as state attorney general

a jury, determining all legal issues himself. Growing up in northern Minnesota, the judge had been raised in a family dependent on the iron-

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mining industry. At the University of Minnesota law school he was introduced to Democratic-Farmer-Labor Party politics, establishing friendships with leaders such as Hubert H. Humphrey and subsequently serving terms as state attorney general and U.S. Attorney. Humphrey gave Lord his oft-quoted moniker, "the people's judge," and helped him win appointment to the federal bench in 1966. Lord eventually became known as a pugnacious liberal activist from the bench, but in early 1972 he had not achieved this recognition. Generally, both plaintiffs and defendants viewed his assignment to the Reserve case with favor. Indeed, he had relatives working for the mining company.²

By late 1972, before the case came to trial, its direction had begun to shift. During that year, the International Joint Commission of the United States and Canada had held hearings on Lake Superior, impelled

in part by concerns about the Reserve situation. In Duluth, the commissioners heard arguments against the discharge of tailings into the lake. Originally, concerns centered on their effects on the lake's ecology, marine life, and water turbidity. Among the protestors was Arlene Lehto, a zealous young woman who had grown up on Minnesota's North Shore. As a spokeswoman for the Save Lake Superior Association, Lehto was the first person to raise the question of asbestos. The night before the hearing, a geologist told her that cummingtonite-grunerite, the mineral particles that composed 40 percent of the mining discharge, resembled the asbestiform fibers

asbestos and discovered that they included cummingtonite-grunerite. "The first thing that struck me was, we're drinking that stuff," she later explained. Testifying before the commission, Lehto declared that the taconite tailings included "the same fibrous amphibole" as the asbestos in talc-dusted rice: "To our knowledge, no one has ever suspected that this might be a cancer-producing agent."³

Initially, scientists from the EPA's National Water Quality Laboratory in Duluth and the Minnesota Pollution Control Agency (PCA) viewed Lehto's remarks with skepticism. As far back as 1969, scientists had traced cummingtonite throughout the immense western section of the lake, suggesting interstate pollution under federal laws, and had found it in the water supplies of Duluth and other North Shore communities. Reserve officials had disputed this finding, claiming in any case that the minerals in the tailings were merely sand. In building their case, however, both state and federal scientists in-



Aerial view of the Silver Bay taconite plant and harbor, about 1965

dependently began to investigate the mineral in Reserve's wastes. Led by Director Grant J. Merritt, the Minnesota PCA had already considered analyzing Reserve's ore body for asbestiform minerals. After discussing Lehto's presentation, the agency hired a mineralogist who in January 1973 began taking samples from Reserve's mine pit near Babbitt and

exposure for maximum benefit in his quest to eradicate the environmental causes of disease.⁵

On June 6, 1973, Selikoff agreed to serve as chief medical witness for the government, pointing out that "mineral fibers related to the species being discharged into Lake Superior have been found to cause cancer in man." He proposed a study headed by

"No Need to Panic Over Lake Water," read the front-page headline of the *Duluth News-Tribune*.

at the Silver Bay beneficiation plant. At the same time, national water-lab scientists began testing Duluth water as evidence for the trial. By May 1973 they realized that the cummingtonite they were tracing was similar to a variety of asbestos known as amosite. The water lab reported this discovery to Justice Department attorneys, who introduced the issue to EPA officials in Washington as an important turn of events.⁴

In early June 1973 a debate raged within the upper echelons of the EPA about the importance of the asbestos revelations. The tide turned when federal lawyers contacted the Mount Sinai School of Medicine in New York City for advice. Experts there, led by Environmental Sciences Laboratory Director Dr. Irving Selikoff, were considered the principal specialists in the world on asbestos exposure and public health. A 1964 study by Selikoff and his colleagues had supplied the first incontrovertible evidence that exposure to asbestos was a carcinogenic hazard. By the early 1970s media discussions of asbestos invariably centered on the charismatic Mount Sinai doctor, and he proved adept at manipulating this

Mount Sinai to seek data on "possible serious human health effects." When federal officials first broached the asbestos discovery to Miles Lord on June 11, the stunned judge blurted out that this could "potentially be the ecological disaster of our time" and clamped a secrecy order on the information. By June 15, however, rumors were afloat. Reserve attorneys were furious that the lawsuit had taken this turn, that unsubstantiated scientific evidence now dominated the discussions. Lord deliberated with Selikoff, then allowed the EPA to release an asbestos warning to the public.⁶

"No Need to Panic Over Lake Water," read the front-page headline of the *Duluth News-Tribune* on June 16, 1973. The day before, the EPA had reported to the citizens of Minnesota, Wisconsin, and Michigan that "high concentrations of asbestos fibers" had been "discovered in the water supply of Duluth and several communities on the Minnesota shore of Lake Superior," affecting approximately 200,000 people. Reserve's discharge was believed to be the source of the fibers. "While there is no conclusive evidence to show that the present drinking water supply in this area is unfit for human



Buying pure water in a Duluth supermarket, June 1973. Packaged by local dairies, the cartons warned, "Use sparingly. Do not waste."

consumption," the EPA announced, "prudence dictates that an alternative source be found for very young children." Tests of Duluth water showed an abnormally high concentration—100 billion fibers per liter of water—"1000 times higher" than any asbestos level previously found in any water sample. At the same time, Merritt of the Minnesota PCA issued a report summarizing his agency's geological study that identified large quantities of fibers "in every way identical" to asbestos in Reserve ore and tailings.⁷

The immediate response to the EPA announcement was twofold. First, a wave of panic buying of bottled water ensued in Duluth and the surrounding region. State authorities and Duluth officials, assisted by the EPA, contracted with local dairies to supply bottled water to meet the burgeoning demand. At the same time, impelled by U.S. Congressman John A. Blatnik, a Democrat-Farmer-Laborite from Chisholm, the

Army Corps of Engineers brought to Duluth a water-purification unit primarily used to filter “bizarre water contaminants” in Vietnam. Though it ultimately proved inefficient, tests on Duluth water suggested that a filtration plant could remove the fibers from municipal water supplies.⁸

Second, the general public erupted with outraged incredulity that a body of water as large as Lake Superior could have been contaminated, from a single industrial source, with a carcinogen to which thousands of citizens had been unwittingly exposed since the late 1950s. One group of angry activists and government leaders demanded an injunction from the Department of Justice or the PCA to close down the mining company. Typical of this group was Representative Gerald Ford (R-Mich.), who joined congressional colleagues such as Senator Philip Hart (D-Mich.) in the effort to stop the dumping. From another camp came indignation that government regulators could wield such tenuous evidence to foster widespread alarm and potentially cut off the economic lifeblood of an entire

region. Characteristic of this view were the comments of 85-year-old Edward W. Davis. A University of Minnesota engineer and the innovator of the taconite-beneficiation process, Davis was considered the economic savior of the Iron Range. (The Silver Bay plant was named for him.) Upon hearing of the asbestos-tailings evidence, Davis exploded in fury: “There is no asbestos in it! It’s all supposition that this material will have the same effect as asbestos. It’s all hypothetical . . . we’ve been drinking this water for years.”⁹

On June 18, Dr. Selikoff and an entourage of Mount Sinai staff swept into Duluth for the first of many visits during the Reserve litigation. Their main goals, before the trial opened in August, were threefold, and all three objectives would prove extraordinarily controversial. First,

of Congressman Blatnik, President Richard M. Nixon established a task force to organize asbestos-monitoring projects, headed by the Council on Environmental Quality and coordinated by the Chicago-based Region 5 of the EPA. This task force moved the federal role to disaster-level status.¹⁰

Thus, by late July 1973 the context for the Reserve litigation had shifted away from earlier ecological concerns. Scientific knowledge of asbestos would now define the political and legal terms of dispute. Judge Lord desperately sought assistance in interpreting the avalanche of technical information piling up in advance of the trial. He retained Dr. Arnold Brown, chief pathologist at the Mayo Clinic, to serve the court as an advisor on scientific issues. Though not an asbestos specialist, Brown was recognized nationally for his exper-

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they would survey cancer records of the Duluth area for deviations from the expected disease rates that might be connected to asbestos exposure. Second, they would collect autopsy tissues from Duluth hospitals culled from residents who had lived during the period in which Reserve discharged its wastes into Lake Superior. Any asbestos fibers embedded through ingestion via drinking water would show up in these tissues. Third, to quantify the human exposure, they undertook to sample and measure asbestos fibers in Reserve’s air and water discharges, in the water of Lake Superior, and in the water supplies and ambient air of Duluth and surrounding communities. Following on their heels, at the request

tise in environmental carcinogens. His analysis of the evidence would prove crucial to the arguments of the defendants and plaintiffs, as well as to the judge.¹¹

In Duluth, where the mining industry had close ties to the community, the *News-Tribune* editorialized caution and dubiously listed EPA reports as the “Asbestos Box Score.” Mayor Ben Boo, however, unequivocally advocated the construction of a multimillion-dollar filtration plant for the city’s water supply, regardless of the outcome of health-hazard studies. Consequently, the development of an expensive water-filtration system for Duluth, using novel technology, became a major issue that at times would overshadow other concerns.¹²



Edward Davis pulling the switch to dump the first carload of taconite into the Silver Bay plant, about 1955

On August 1 the trial opened before Judge Lord in the federal court building in Minneapolis. Initially, the proceeding was to deal with asbestos and the public-health enigma. The first plaintiff witness, Dr. William Phinney, chief geologist for the National Aeronautics and Space Administration, asserted that the asbestiform cummingtonite mineral in Lake Superior almost certainly emanated from the Babbitt area where Reserve mined its ore. In a process foreshadowing the next nine months, Reserve attorneys then spent the remainder of the day cross-examining Phinney and challenging the complicated studies on which he based his conclusions. Early in the trial, Jane Brody, reporting for the *New York Times*, likened the litigation to the plot of Henrik Ibsen's play *An Enemy of the People*, in which a physician in a Norwegian town discovers that the local baths, a major source of income for the community, have been contaminated by a powerful industry. For his revelation, the doctor and his friends are ostracized as enemies of the people. As potential "enemies of the people," Brody implied, EPA officials—and perhaps Dr. Selikoff and Judge Lord—now faced a similar struggle.¹³

Everyone agreed that the critical moment would come when Selikoff testified on the health ramifications



Hauling taconite at the Peter Mitchell mine, Babbitt, 1961

impending testimony represented the unexploded bombshell of a public-health emergency. Reserve might be forced into an immediate shutdown followed by demands that the state provide uncontaminated water for Duluth and other North Shore communities. Subsequently, Armco and Republic could permanently close Reserve, or the state might be compelled to assist the company in altering its tailings discharge or relocating its plant. All were daunting scenarios.¹⁴

Mirroring the attitude of many in northeastern Minnesota, Congressman Blatnik believed the case "had

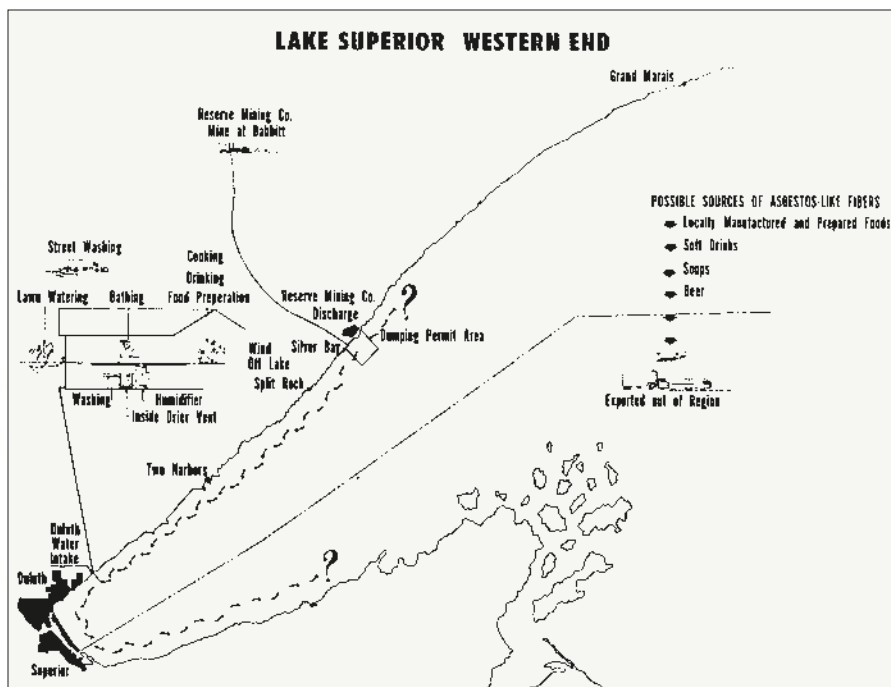
convention that blamed "certain college professors" wielding "personal rancors and incessant news media publicity given to opinions, not facts" for "the prospect of economic disaster" and "the near circus-like atmosphere and attendant publicity" in the trial.¹⁵

A number of the plaintiff experts who preceded Selikoff to the stand revealed the difficulties that asbestos science posed to the court case. Esoteric mineralogy became a crucial area of contest. Essentially, the government could strengthen its suit if Reserve tailings were defined as asbestos. Thus, various specialists declared that the fibers found in Lake Superior water and ambient air were "similar, and in some instances, identical to those used in commercial asbestos." In an effort to refute these claims, the defense brought in several world-renowned geologists who uniformly, and not unexpectedly, testified that there was "no evidence of asbestos-type fibers of any sort" in Reserve ore. During the ensuing years of controversy, the liti-

Esoteric mineralogy became a crucial area of contest.

of exposure to the fibers. The defense, alarmed at his participation and funded by the generous coffers of Republic and Armco, gathered as consultants an unprecedented array of asbestos experts. For DFL Governor Wendell Anderson and other Minnesota leaders, Selikoff's

to be decided on the basis of facts scientifically established, not on the basis of emotionalism which the newspapers, particularly the Minneapolis press, are giving so much play." Blatnik also endorsed a resolution presented by Duluth and Iron Range union locals at the state AFL-CIO



Map showing the possible route of the “asbestos-like fibers,” kept along with the results of water-purification tests in Congressman Blatnik’s asbestos research files

gants rehearsed asbestos mineralogy in exhaustive detail. However, their basic positions were set by the first scientists to testify: the plaintiff’s embrace of a relatively ambiguous definition of asbestos in contrast to the defense’s fierce adherence to a rigidly circumscribed one.¹⁶

of the tissue study that had been launched with such fanfare in June. The Mount Sinai group had quietly dropped the investigation upon discovering that the autopsy specimens had been contaminated with fiber-burdened city water and that contriving a way to discover an infinitesimal

Residents of Silver Bay and Babbitt claimed they were all “perfectly healthy” and took to calling the physician “Dr. Sillycough.”

On September 18, 1973, Selikoff took the stand. The voluble doctor launched into an evangelical disquisition on asbestos diseases and their relation to the Reserve Mining situation, offering an expansive portrait of how the pathology of asbestos exposure could become manifest in the western Lake Superior region. Significantly, though, Selikoff could present no evidence of the health risk of ingesting Duluth water. Absent from his testimony was discussion

fiber in selected human tissues was incomparably difficult.¹⁷

Most of the publicity after Selikoff’s court appearance had to do with incendiary comments he made during his third day on the stand. He declared that a “distinct public health hazard” faced residents of northeastern Minnesota: drinking water from Lake Superior was “a form of Russian roulette.” Further, the physician ominously warned against breathing the allegedly asbestos-laden air in

the vicinity of the Reserve plant in Silver Bay: “I think we would want to have a sign entering town saying, ‘Please close your windows when driving through.’ I certainly would want to close mine.” Selikoff then asserted that North Shore children faced great peril through inhalation of “literally millions of fibers each year” and that airborne fibers from Reserve operations even threatened citizens of Duluth, 55 miles to the southwest. Such pronouncements made under oath in a court of law by the leading asbestos expert in the world were given great play in the media and shocked the public. The next day in court, worried that his remarks were being misinterpreted, Selikoff softened his stance by insisting that his utterances in regard to Silver Bay and Duluth air were a “facetious figure of speech” and “not meant to be taken seriously.” He did not, however, retract his claim that the “asbestos pollution” was dangerous and the airborne fibers in Silver Bay were an “immediate hazard and should be controlled.” In a letter to a Duluth woman, he suggested, “The only ‘facetiousness’ was that the phrase. . . was being taken literally.” There was “no facetiousness about this concern at all towards the question of asbestos contamination.”¹⁸

Interviewing Dr. Irving Selikoff (with chief government attorney John Hills) after a day of testimony, September 1973



An uproar followed the Mount Sinai expert's presentation. Defenders of Reserve lashed into what they believed were irresponsible statements. Residents of Silver Bay and Babbitt claimed they were all "perfectly healthy" and took to calling the physician "Dr. Sillycough." The mining company's legal team considered Selikoff to be nothing more than a charlatan who engaged in a "word game" about asbestos with the intent of inducing public panic for political ends. He had placed Reserve in the impossible position of "proving a negative"; in the defense view, all the evidence strongly suggested no health hazard. Reserve litigators argued that Selikoff was using press conferences to conduct his scientific

investigations and accused the doctor of employing "fear psychosis" in an effort to close the plant.¹⁹

Sensing a "small glimmer of light at the end of a long tunnel," mining company executives diligently set about collecting copies of court proceedings showing "contradictions and contrasts" in Selikoff's testimony. One Reserve official now was confident that the company's stable of "world-renowned doctors and scientists from other countries [would] lay to rest any questions about hazards to human health." A large array of defense experts proceeded to the courtroom stand, each reiterating the view that the fibers in the tailings were not hazardous and that the government's evidence to

the contrary was a collection of "severely biased legal pronouncements" intended to harass industry and foster "panic-like fears whipped up by sensational and emotional reporting in the news media."²⁰

As the debate peaked during late 1973, the *New Yorker* published a five-part series on asbestos. In it, author Paul Brodeur limned the asbestos "medical-industrial complex": the web connecting the asbestos business, industry science, and inept government agencies that obscured many occupational health tragedies and distorted efforts to regulate asbestos exposure. Brodeur discussed the struggles of Selikoff and the Mount Sinai group with the asbestos industry, and he concluded with a



Silver Bay, Lake Superior: the tailings dump, mining company, and town, about 1956

portrait of the Reserve Mining trial and its correlation with previous asbestos controversies. Many Reserve opponents immediately attempted to induce Judge Lord to read these pieces. Others publicized the relationship that Reserve consultants had with the asbestos industry, as described by Brodeur. Defense lawyers, not surprisingly, objected that the articles were “inadmissible and prej-

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udicial hearsay in a court of law.”²¹ It is unclear whether Lord read the articles at this time.

The Reserve debate took another turn in November 1973 when scientists from 13 countries gathered in Durham, North Carolina, for a conference on the biological effects of ingested asbestos. Sponsored by the National Institute of Environmental Health Sciences, the meeting was intended to grapple with concerns about the risks posed by water-borne asbestos. The issue, of course, had burst forth following the Lake Superior news of the previous June. Public anxiety had then spread across the country as the EPA discovered “asbestos” in at least 10 municipal water systems—from Boston to Chicago to San Francisco—and as medical specialists searched for the unknown causes of gastrointestinal cancer, a common carcinoma. The conference reached no final conclusions other than an agreement that asbestos was everywhere and, in some cases, extremely dangerous. The unanswered questions raised by the gathering suggested again the obstacles confronting Judge Lord as he sorted out the conflicting claims of plaintiffs and defendants.²²

By January 1974 nearly 100 plaintiff and defense witnesses, proffering more than 1,000 exhibits and 10,000 pages of testimony, had presented the fundamental evidence regarding the health risks posed by the mining discharge. Taking stock of this vast body of data, Judge Lord stated early in February that “there has been made a *prima facie* case of a public health threat.” Lord warned

that by 1972 Armco and Republic engineers and executives had secretly developed plans demonstrating the feasibility of on-land disposal. An exasperated Judge Lord recessed the trial and ordered all parties to negotiate in an effort to reach an out-of-court settlement, which proved to be futile. After months of trial, the litigants could not stipulate, or agree to, a single fact in the case. The longer the parties negotiated, the farther apart they were, until the final meeting devolved to deadlock.²⁴

Early in 1974, another ostensibly peripheral matter gathered force. The desire to filter municipal water to eliminate all asbestos-like fibers had become a policy imperative, even though the initial panic had subsided by the fall of 1973, and public concern fluctuated thereafter as the trial ensued. For months, deep divisions generated by the issue in Duluth had buried any potential solution in a political quagmire. Public opinion surveys consistently revealed apathy:



Miles Lord (standing) gets a welding lesson from Max Zorotic while inspecting Reserve Mining's Babbitt location, October 1973.



Duluth's water filtration plant, 1930s

there were no dead bodies in the street, and the concept of a 20-year disease latency hardly captured the popular imagination. Nonetheless, civic leaders believed that their only choice was to find the methods and the money to filter water, regardless of what the medical experts said about potential health risk. Pragmatists realized that the social and economic costs of *not* filtering the water were impossible to ignore. In the judgment of Jeno Paulucci, one of the region's preeminent businessmen, this was "the greatest problem that has ever faced N.E. Minnesota." As he told Governor Anderson, "If these particles are harmful, they should be filtered out of the water. If they are not, they must nonetheless be removed because thousands think they are. This belief will hurt economic development." The asbestos, Paulucci asserted, was just another reason "those dignified patronizing

sophisticates" and "sight-seers" from the Twin Cities can say, "To hell with Duluth."²⁵

Water filtration for Duluth entailed engineering a unique system and procuring significant funds. Since the late-nineteenth century, the city fathers had pumped water straight from Lake Superior into Duluth's homes, chlorinating it after a series of virulent typhoid epidemics swept through the city in the late

EPA and Army Corps of Engineers officials finally agreed to commit funds toward a pilot plant at the Lakewood pumping station.²⁶

Then Judge Lord stepped in, calling an extraordinary public hearing at the Duluth Federal Building on March 22, 1974. At the gathering, Lord stated that he had "heard more about asbestos and its health effects than any other man in the world." He wanted to "build a bonfire" lead-

Water filtration for Duluth entailed engineering a unique system and procuring significant funds.

1890s and early 1900s. Now, the entire waterworks infrastructure required rebuilding. Engineering analyses suggested that an experimental plant was needed to test filtration technologies before the city constructed a full-scale operation. After much debate during the fall of 1973,

ing to emergency water filtration for the region and a program for a permanent filtration system. Local leaders trembled when it became apparent that at least \$10 million was required to set this process in motion, arguing that municipal governments should not have to foot such a

Editorialists either praised Lord as a warrior for justice or condemned him as a sensational publicist ignoring legal protocol.

bill. It also became obvious that the focal point for any emergency effort was the Army Corps of Engineers, the agency with the expertise and access to funds. Corps administrators incurred the wrath of Judge Lord and civic officials when they reluctantly agreed to spend \$5 million on water supply only if the municipal governments paid the money back. Lord then decreed that the corps must furnish free drinking water to North Shore residents; as a result, agency technicians began to install temporary filtration devices in public facilities around Duluth with the proviso that responsibility for the cost remained indeterminate.²⁷

Reacting to these events, editorialists either praised Lord as a warrior for justice or condemned him as a sensational publicist ignoring legal protocol. For EPA administrator Russell Train, however, the evidence was clear: he was “convinced after examining the testimony that the

discharges involve a substantial risk to human health.” Train called for an injunction to halt Reserve’s operation. The environmentalist plaintiffs agreed, adding a plea to Judge Lord to end the “massive human experiment” on the North Shore. Matching this was a dramatic turn on April 11, when the Duluth City Council voted to intervene in the case as a plaintiff, with the intent of positioning the municipality to collect damages, if awarded in a court settlement, particularly related to water-filtration costs. This move was viewed as duplicitous by the many supporters of Reserve Mining in northeastern Minnesota, including the Duluth Chamber of Commerce, which was participating in the litigation as a defendant intervenor.²⁸

As the trial moved to its climax, various experts presented the remaining health evidence. Dr. Thomas J. Mason of the National Cancer Institute submitted findings that showed no significant increase in cancer deaths in the Duluth area from 1950 to 1969 as compared with Minnesota as a whole. But, he pointed out, since the mine discharges did not begin until 1955, the study timeframe was too short, given the characteristic latency period of asbestos disease. Mason recommended ongoing disease surveillance of the Duluth and northeastern Minnesota population, thus firing the opening salvo in what would become decades of controversial and inconclusive epidemiological inquiries.²⁹

The most significant testimony

came when the Mayo Clinic’s Dr. Brown took the stand in mid-April to summarize all of the health evidence in the trial. Given the uncertainty of the evidence, the pathologist remarked, the high levels of proof required by science did not allow him to draw any inferences regarding health hazards, except to say that the situation was apparently not an emergency. Nevertheless, “as a physician, I take the view that I cannot consider, with equanimity, the fact that a known human carcinogen is in the environment. . . . I can come to no other conclusion than that the fibers should not be present in the air and water of the North Shore.” Dr. Brown “opted for coming down on the side of the public’s health,” while expressing dismay in the “blind faith” that attorneys from both sides placed “in numbers derived from complicated technologies.” This crucial distinction between science and medicine defined the legal dialectic in the Reserve case for years to come. For the defense, hewing to the scientific principle of 95-percent empirical certainty, there was no health hazard; for the plaintiffs, adhering to the medical standard, a lower burden of proof dictated terminating exposure to the asbestos-like fibers as a precaution.³⁰

The final court session featured a clash between Judge Lord and the chairman of Armco, C. William Verity. Lord had called in the executives of Armco and Republic with the hope of reaching a compromise, but a more apparent contrast of personalities—the populist judge versus the corporate aristocrat—was hardly imaginable. The antipathy the two men felt for each other was obvious during the three days the chairman



Early commentary in the Minneapolis Star, June 20, 1973

spent on the stand in the packed courtroom. On the morning of April 20, 1974, when Verity admitted that, early in the controversy, company officials realized they would have to build an on-land disposal site, Lord ordered a halt to the proceedings. The obstinacy of the defense, he declared, had earned the company “\$10 million in profit” and resulted in “50 billion fibers down the throats of the children of Duluth.” The judge gave Verity until 1 P.M. to decide whether Armco and Republic would meet the requirement for on-land disposal and air filtration.³¹

When the steel executive returned, he read a statement that one courtroom spectator called a “display of shocking public arrogance.” “It is our considered judgment,” Verity announced, “that Reserve’s discharges do not constitute a health hazard.” Reserve and its parent companies might be willing to construct a tailing site of their own choice and with no concession of liability, if the government dropped all civil action under environmental laws and supplied financial assistance. Moreover, the court must satisfactorily resolve “the alleged health hazard issues.” Verity’s demand for a capitulation on the health issue was the final straw for Lord, who labeled the statement “preposterous” and “economic blackmail.” Several hours later the judge released his order enjoining the mining operation.

Risks—no matter how small—imposed for someone else’s gain were immensely unpopular.

Two days later, from a motel room in Springfield, Missouri, where they were attending a conference, three judges of the U.S. Court of Appeals for the Eighth Circuit tem-



Reserve Mining employees filing for unemployment immediately after the April 20 shutdown order

porarily stayed Judge Lord’s order. Representatives for both sides had chartered airplanes and rushed to Missouri to debate the defendants’ appeal. During an informal hearing, the appeals judges had ac-

States.” “Show me one dead body,” demanded Judge Donald Ross. The judges set a formal hearing for May, and thus the case entered the federal appeals process. Reserve managers immediately called their employees to resume work.³²

Meanwhile, the reaction to Judge Lord’s electrifying decree was predictable. Local residents, the regional media, led by the *Duluth News-Tribune*, and steel-company spokesmen castigated the decision of the “holy Miles Lord” as punitive and unsupported by any evidence. Additionally, many northeastern



Sign at Duluth's water-filtration plant, 1973, before the Reserve trial opened

Minnesotans furiously attacked Governor Anderson, state agency leaders, environmentalists, the federal government, and the national media as furthering the oppression fabricated by Judge Lord and Dr. Selikoff. On the other hand, the statewide and national public response was nearly unanimous in praising Lord's "courageous" ruling. Reserve and its supporters had brought it on themselves by "profoundly irresponsible and anti-social behavior," in the words of a *New York Times* editorialist. EPA administrator Train concurred: "If this were just another pollution problem and what the company was doing was turning Lake Superior green or something, we probably wouldn't have gone this far. But what we have here is the public health issue against the economic one." Indeed, a poll taken in June 1974 by the *Minne-*

apolis Tribune indicated that most Minnesotans supported an immediate halt to Reserve's discharges, some 78 percent believing that the mining wastes "seriously harmed Lake Superior." Scientists could describe the risk of disease from the fibers as uncertain or unmeasurable, but the larger public was opposed to exposing an entire population to a proven carcinogen. Risks—no matter how small—imposed for someone else's gain were immensely unpopular.³³

In the legal community, the majority view also supported Judge Lord's action. Given the uncertainties of the evidence and the potentially serious consequences to public health, Lord had to make a precautionary decision and provide equitable relief, even if the actual risk were low. In environmental cases, according to this point of view, the court could not use scien-

tifically defined concepts of burden of proof. The law was not scientific; given the potential harm to the public interest from environmental contamination, law and politics required closure through the judicial recognition of the propriety of uncertain risk. In this, Lord was on the cusp of a trend in the federal judiciary, beginning in the late 1960s and paralleling the rise of the environmental movement in the United States.³⁴

Many conservative detractors, on the other hand, perceived the Reserve Mining ruling of April 1974 as an exemplar of judicial "absolutism" and liberal fanaticism. For these critics, Lord had brashly wielded "legislative policymaking" as an adjudicative weapon, ignoring traditional standards of legal proof and economic consequences in a quest for environmental purity.

The Reserve Mining litigation and political controversy droned on for many years after April 1974. Miles Lord continued to engage the appeals judges of the Eighth Circuit Court in an acrimonious dialogue. In March 1975 an *en banc* panel of the Eighth Circuit released an opinion, considered one of the most significant in the history of American environmental law, affirming Lord's finding of fact. This decision differed from Lord's only on the "imminence" of the hazard; the discharges were potentially threatening to human health and must be abated in a "reasonable" amount of time. In January 1976, however, in an unusual action, the circuit court removed Lord from the case for exhibiting "great bias," exclaiming that he had "shed the robe of the judge and assumed the mantle of the advocate."³⁵

That November, Duluth finally completed a technologically unprecedented \$8 million water-filtration plant that eliminated the asbestos-

like fibers from its water supply. (Reserve Mining eventually paid \$2 million toward this project in 1982.) In March 1980, following innumerable court and administrative rulings and polemical quarrels, the company suspended its discharges into the water and ambient air of Lake Superior after building a gargantuan \$375 million air-filtering system and on-land disposal site known as Milepost 7. According to Armco Steel publicists at the time, this was the largest and costliest single pollution-control project in American history. In July 1986, after the bankruptcy of co-owner LTV Steel during the steel-industry collapse of the 1980s, Reserve closed. It vanished as a corporate entity in 1989. The debate about the potential and real health, ecological, and economic consequences of the 25-year mine discharge continues.

In some respects, the Reserve Mining trial was but a fragment of

a larger theme common to American history. This story had begun in 1947 when the State of Minnesota, eager for economic growth, approved permits for the company to use Lake Superior as an industrial dumping ground. Thus an enterprise promoted by the state in alliance with business had become a liability by the environmental era of the 1970s. With the advent of the asbestos problem in 1973, the contestants in the litigation tried to prove their cases with the complicated mix of science and ideology that now characterizes American environmental politics, policymaking, and law. The asbestos question in Reserve Mining was not answered through the sincerity of scientific truth seeking. Instead, the case illustrated how a theory of justice derived from a burgeoning social movement demanded a conclusive policy decision when faced with an uncertain but potentially catastrophic environmental problem. □

Notes

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nity: The Rhetoric of Judge Miles Welton Lord (Westport, CN: Greenwood Press, 1995), chapters 3, 5.

3. Great Lakes Research Advisory Board, *Asbestos in the Great Lakes Basin, With Emphasis on Lake Superior* (Windsor, ONT: Great Lakes Regional Office, International Joint Commission, Feb. 1975), 35, appendixes 3 and A-11; *Duluth News-Tribune*, Mar. 10, 1974, *Woman's World* magazine, 50; *Minneapolis Star*, Apr. 20, 1974, p. 9A; Alden Lind and Gary Glass, "Asbestos Contamination of Lake Superior: Ten Years of Litigation," in *Contaminants and Sediments*, ed. R. A. Baker (Ann Arbor: Ann Arbor Science, 1980), 1:219–70; Bartlett, *Reserve Mining*, 119–26; Bastow, *Vast Pollution*, 91–112.

4. Susan Simon, "Reserve Mining Suit Illustrates Government-Industry Clash," *National Journal Reports*, Mar. 2, 1974, p. 309–18; Stephen Burrell, "Amphiboles in Taconite from the Peter Mitchell Mine, Reserve Mining Company," June 12, 1973, Reserve Mining Co. Case Files, Minnesota

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5. Bastow, *Vast Pollution*, 91–112; Simon, "Reserve Mining Suit," 309–18; Paul Brodeur, *Expendable Americans* (New York: Viking Press, 1974), 7–9, 12–17, 28–30; Huffman, "Exploring the Legacy," 346–48; Geoffrey Tweedale, *Magic Mineral to Killer Dust: Turner & Newall and the Asbestos Hazard* (New York: Oxford University Press, 2001), chapters 7–9, 11.

6. "Dr. Irving J. Selikoff Statement of Expected Testimony," June 6, 1973, box IV-65, and "Meeting in Judge Lord's Chamber," memo, June 14, 1973, box IV-60, Reserve case files; *Duluth News-Tribune*, June 16, 1973, p. 1; Brodeur, *Expendable Americans*, 229–38.

7. "Asbestos Fibers Found in Duluth

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8. "Duluth Asbestos Situation," Region V, EPA memo, Oct. 12, 1973, box IV-65, Reserve case files; *Pioneer Press*, June 21, 1973, p. 1; Richard P. Schmitt et al., "Decontaminating Lake Superior of Asbestos Fibers," *Environmental Science and Technology* 11 (May 1977): 462-65.

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14. "Medical Consultants," memo, Aug. 10, 1973, and Edward Fridé to John Hills, Aug. 14, 1973, both box IV-28, Reserve case files; Peter Gove to Tom Kelm, memos, Aug. 17, 27, Sept. 11, 1973, Wendell R. Anderson Gubernatorial Papers, Miscellaneous Records, box 50, State Archives, MHS.

15. John Blatnik to Richard Thomas, Sept. 18, 1973, and United Steelworkers, "Resolution," Minnesota AFL-CIO convention, Sept. 10, 1973, both box 108, Blatnik papers.

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19. *Minneapolis Star*, Oct. 1, 1973, p. 1; *Minneapolis Tribune* Sept. 22, 1973, p. 1A; Edward Schmid to John Blatnik, Sept. 28, 1973, box 102, Blatnik papers.

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28. *Minneapolis Star*, Mar. 28, 1974, p. 1B; *Duluth News-Tribune*, Mar. 28, 1974,

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30. *Minneapolis Tribune*, May 21, 1974, p. 1B; *Pioneer Press*, Apr. 13, 1974, p. 15, Apr. 14, 1974, Metro Life sec., 2; Brown, "Prediction in the Face of Uncertainty," 75-79; Brown to author; Lord, "Supplemental Opinion," in *U.S. v. Reserve*, 50-53.

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32. *Minneapolis Tribune*, Apr. 23, 1974, p. 1A; Bastow, *Vast Pollution*, 163-67.

33. *Duluth News-Tribune*, Apr. 21, 1974, p. 34 (editorial); Mrs. Fritz Peterson to Hubert Humphrey, Apr. 23, 1974, box 97, Blatnik papers; Robert Babich to Wendell Anderson, May 1, 1974, Miscellaneous Records, box 51, Anderson papers; "Reserve Shutdown," (editorial), WCCO-TV, Apr. 22, 1974, box 2, Merritt papers; "Shutdown At Superior," *New York Times*, Apr. 28, 1974; "Clean-Up At Silver Bay," May 14, 1974, and "Key Issue Rides on Reserve Mining Ruling," May 25, 1974—both *Washington Post*; *Minneapolis Tribune*, June 2, 1974, p. 1A; Cook to author, Dec. 27, 2001.

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35. Here and below, Huffman, "Exploring the Legacy," 339-68; Stephanie Hemphill, "The Legacy of the Reserve Mining Case," Minnesota Public Radio Report, Oct. 29, 2003, search on Reserve Mining at www.mpr.org/news&features; *Minnesota: A History of the Land*, episode 4: "Second Nature, 1940s and Beyond," Twin Cities Public Television, 2005.

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