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The Profit Motive in [the] War on Pollution

By **Patrick E. Tyler** (May 12, 1981)

[**NOTE:** Susan graduated from [UWGB](#) – with a degree in “Environmental Science” - in 1982]

When Congress mounted its colossal attack on water pollution in 1972, a new industry quickly positioned itself to benefit, employing a familiar piece of war machinery in Washington -- the revolving door.

Just as it twirls Pentagon colonels and generals around the “military-industrial complex”, and just as it shuffles lawyers and scientists between regulated industries and regulatory jobs, this carousel wedded environmental protection to another sort of industrial complex, the eco-business complex.

Criticisms of the eco-business complex, it is clear, resemble many of the perennial complaints against the military-industrial complex -- revolving-door careers, cost overruns and overly elaborate technology, faulty designs and faulty products. The eco-business equivalent of an airplane that doesn't fly is a wastewater treatment plant that doesn't work.

The business works like this:

Item: The executive director of the California water pollution control board, J. B. (Jerry) Gilbert, quit his job in 1972 to start his own consultant engineering firm, which subsequently was hired to design portions of a \$500 million sewer project in Sacramento. After nine years

of private consulting work in California and elsewhere, Gilbert returned to government in Oakland as director of its mammoth water and sewer district.

Item: The director of Cleveland's sewer district, Andrew Ungar, left his post in April, 1979, to work for Great Lakes Construction Co., which won a \$20 million contract in November, 1980, on Cleveland's biggest sewer project.

Item: William E. Korbitz, the director of Denver's sewer district, quit his job last year to open a new office for Boyle Engineering Corp. His assignment is to get new business for the firm, including the lucrative consulting contract for the city of Denver.

Item: Metcalf & Eddy Inc., a subsidiary of a publicly owned consultant engineering firm, has been a consistently high performer on the New York Stock Exchange - with billings in excess of \$35 million a year. But, its "solutions" to water pollution problems have not always been known for frugality. In 1971, the firm recommended that Northern Virginia residents pipe their treated sewage out of the Upper Occuquan basin to the lower Potomac River at an initial cost of \$220 million and a total, 30-year cost of \$429 million. The Virginia officials chose instead a relatively modest \$50 million treatment plant. [The] Street, analyst for pollution control stocks, noted - in his 1979 investment letter - that a "continuing favorable psychology" was creating investor enthusiasm in the pipe-and-pump market because "the concern about environmental threats to health appears to be intensifying."

Item: One of the most prominent engineering firms in the water pollution control business is CH2M Hill Inc., (named for its partners, Cornell, Howland, Hayes, Merryfield and Hill) - whose annual billings approach \$100 million. The firm did pioneer wastewater treatment work at Lake Tahoe, Calif., where a 27-mile pipeline carries treated water over the mountains - to an adjoining county. But, the sewer district has sued the firm, contending that the \$5 million pipeline has broken down 38 times and cost \$1.2 million to repair.

By the time Congress passed the 1972 amendments to the Clean Water Act, the new environmental control industry was on a threshold of opportunity -- built on public concern over the pollution of the nation's waterways. The legislation committed the federal government to fund three-quarters of the cost of municipal sewer plants.

Nine years later, after a \$30 billion public investment in sewer works for 18,000 communities, a few hundred engineering and equipment firms have reaped enormous benefit from the grants program. Few of those who bought their services are happy with the job they've done, however.

Only 2,000 of the plants have been completed, and more than half do not perform up to antipollution standards. A third are considered "serious violators."

When Congress inaugurated the EPA grants program, then-senator Edmund S. Muskie (D-Maine) urged his colleagues "to chart a new course of action in our fight to clean the nation's waters."

As they did, a parallel course was plotted in some investment houses. The prospect of a lavishly funded public works program prompted stock analyst Klein, now with Kidder, Peabody & Co., to conduct a major study in 1971 of the opportunities that would result.

"Recognize that my analysis was not from the perspective of an environmentalist, but rather from that of a capitalist," he told a congressional subcommittee in 1979. "The purpose was, and still is, to identify and invest in the industrial companies positioning themselves to benefit from the nation's need to control environmental degradation or improve the environment."

Klein focused on equipment manufacturers whose products included the aerators, pumps and incinerators used at many sewer plants.

Working backward from figures reported by Congress, Klein found that "the analysis . . . indicated a then current annual municipal

wastewater equipment market size of just \$150 million." But as the EPA construction grants program began to gain momentum, Klein said, "the projections called for a \$300 million size by 1976 and a market size of almost \$800 million by 1980."

Still, for various reasons, the market did not turn out to be as lucrative as Klein projected. In an August, 1979, report to investors, Klein wrote, "Government regulations and bidding procedures continue to foster competitiveness . . . resulting in adverse impact on profitability of major equipment suppliers."

To federal overseers, some of these regulations were justified:

In 1974, the EPA ordered an end to cost plus contracts, which allowed engineering consultants to set their fees as a percentage of the total project cost. The obvious incentive of this system was to design bigger and more sophisticated wastewater treatment plants, with emphasis on costly "advanced" solutions where simple ones might do.

In 1977, the EPA told engineering firms they could no longer dictate to construction contractors the brand of machinery and other components to be installed in treatment plants. This regulation upset both the engineering firms, who say their designs must be tailored to the capabilities of certain equipment manufacturers, and municipal officials, who accuse some construction firms of buying cheaper components that later break down.

For the sewer industry and its engineers, the start was at Lake Tahoe, before there was an EPA and before Congress injected billions into construction funding. The Lake Tahoe advanced waste treatment project was the pilot for the nation and was used by federal officials to justify and elaborate and generously funded program that was to come later.

Advanced waste treatment (or AWT) goes beyond the standard two-step sewage treatment process, which settles out solids in the first step and

then uses microorganisms to decompose the remaining sewage. Chlorine often is added to disinfect the final effluent.

In advanced treatment, chemical processes using lime, alum or iron chloride may be added to remove further solids, oxygen-consuming material and phosphates, including those from detergents.

More than any other project in the country, the \$18 million wastewater treatment plant - built with federal funds - at Lake Tahoe was heralded in 1968 as “ *the triumph of technology over pollution* ”!

The governors of California and Nevada at the time, **Ronald Reagan** and Paul Laxalt, now President Reagan and Sen. Laxalt, affirmed an interstate agreement that the environmental integrity of the lake was so important, because of the tourist and gambling industry, that it required the exportation of all sewage from the drainage area around it.

"Just from a scientific perspective, you could deal with the [treated] wastewater in the [Lake Tahoe] basin," said state engineer Roy C. Hampson. "But the political reality was that this is the greatest body of water in the world." The idea of piping the water over the mountains was never questioned politically after the governors and other politicians adopted this approach.

The 27-mile pipeline was designed by CH2M Hill and constructed up and over an 8,000-foot mountain pass and down into adjoining Alpine County (population 600) where the treated water was stored in a man-made recreational lake for fishing and boating.

An EPA brochure on the Tahoe plant says of its treated water: "The exported wastewater is crystal clear, colorless and odorless. . . . It actually meets public health service standards for drinking water . . . [and] it supports a thriving population of rainbow trout." **Reagan was so enthusiastic that he asked to narrate a film for visitors to the facility.**

Today [1981], Lake Tahoe remains unpolluted, one of the most pristine lakes in the world.

But, the treated water pouring out in the adjoining county has been regularly killing thousands of those trout stocked in the manmade lake. The ammonia level of the water is too high, because none of the three ammonia-removal systems works.

The sewer plant has worked so poorly and has been so costly to operate [that] the sewer district now proposes to abandon nearly half of its systems and go back to basic secondary treatment -- at an additional cost of \$28 million.

A congressional study concluded: "The facility was held out as being the showplace of the advanced waste treatment world, [but] the staff was not able to verify the existence of any published EPA reports which document the problems experienced so others might learn from the Lake Tahoe experience."

In 1976, however, the EPA nominated the South Lake Tahoe plant for an American Bicentennial Award as one of the 200 most noteworthy projects in the history of our nation's public works. And it won.

Near Las Vegas is another example of planning failure. Cutting an eerie, space-age profile against a mountain backdrop just east of the city, a \$53 million advanced wastewater treatment plant is nearing completion.

But, experts across the board have determined that **the costly plant was designed to treat a pollution threat that does not exist.**

In 1969, Nevada officials received complaints that there were dead algae plants floating in Lake Mead, sending off odors and fouling the bottoms of boats in the marinas.

At the time, the lake was an unpolluted reservoir that was used for swimming, fishing and boating -- and even provided drinking water for Las Vegas.

In 1978, the city of Las Vegas sued its county government, the state and EPA for ignoring federal planning requirements that might have

prevented the construction of what is now called "the white elephant in the desert," the highly sophisticated plant that was designed to remove phosphorus from the effluent of existing secondary treatment plants that discharge into Lake Mead.

The plant was built under pressure from EPA and state officials, because phosphorus was suspected of producing algae at nuisance levels.

But most experts believe today that the plant is not needed to control phosphorus levels in Lake Mead. One consultant found **in 1976** that algae levels had decreased in the lake even though wastewater discharges from Las Vegas had increased substantially.

The plant is almost two years behind schedule and mired in lawsuits between contractors and consultants. In addition, the county government now proposes to abandon the phosphorus-removing systems and convert the plant to a regular secondary treatment plant.

The story of how the Las Vegas plant got built is one of blind faith in technology. Instead of studying Lake Mead to discover what levels of waste the giant reservoir could tolerate, county officials -- on the advice of their consultant engineers and under pressure from EPA -- grabbed for the state-of-the-art technology.

Instead of setting specific water quality standards - that would support fishing and swimming goals and control algae, the county hired a biology professor from the University of Nevada at Las Vegas and an engineering consultant. The professor produced a report on the cause of algae growth in the lake - based on data that state officials did not consider reliable. Then the engineering consultant recommended discharge limits based - not on the standard of maintaining fishing and swimming - but on the capability of the most sophisticated plant technology available.

Meanwhile, in the lawsuit between the city and the county, both sides hired consultants to undertake intensive studies of Lake Mead's water quality.

City officials made their legal case on the basis of what Congress set forth on **the Clean Water Act**: if a state chooses to set stricter requirements for water pollution control than the national standard of secondary municipal treatment, then it must set specific water quality standards for a body of water and show that they can only be achieved by advanced waste treatment.

It didn't happen that way in Las Vegas.

Today [1981], county officials have largely recanted their faith in the high-technology approach and will try to salvage their investment in the plant by converting it to a modified secondary treatment plant. The conversion is difficult, partly because the construction company building the plant has filed a lawsuit for greater fees, claiming the design flaws are contributing to cost overruns.

Current cost studies show, however, that if they proceeded with the advanced treatment plant, Las Vegas governments and their taxpayers would pay \$360 million more over 20 years.

One county official was quoted in a congressional report as saying that the EPA "stuffed the (AWT) – [Advanced Water Treatment] down our throat."

[The] County Manager Bruce Spaulding said in an interview, "I'm not going to use language like 'shoved down our throat,' but the standards set were so extraordinarily stringent [that] upon review they appear to be overstated. All we were getting out of EPA was that they wanted the state of the art."

The report called Las Vegas a classic example of "EPA requiring local communities to construct an AWT facility without clear evidence that . . . the receiving water has pollution problems." [END]