
WORKING

No.
9
Sept. 1970

PAPER



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FEDERAL WATER QUALITY ADMINISTRATION
NORTHWEST REGION

ALASKA WATER LABORATORY
College, Alaska

ARCTIC OIL AND ENVIRONMENTAL CONSIDERATIONS

by

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Presented at the

Cold Regions Environmental Health Seminar
Anchorage, Alaska, September 23, 1970

for the

FEDERAL WATER QUALITY ADMINISTRATION

DEPARTMENT OF THE INTERIOR

ALASKA WATER LABORATORY

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I appreciate the opportunity to meet with you here at this Cold Region's Environmental Health Seminar. The sessions today and tomorrow are the outgrowth of many months of planning and discussions designed to fulfill a critical need. I find myself the only representative of the Department of the Interior on this particular panel and, although I am not commissioned to speak for all of the agencies within the Department, I trust that what is said will not misrepresent their views.

The announcement by the oil industry, two years ago, of a huge new oil find at Prudhoe Bay, found the various Federal and State agencies unprepared to meet their responsibilities in the attendant exploration, development and transport of oil from the North Slope. The academic and scientific community was also ill prepared to furnish needed answers to pressing new problems. And, in my opinion, the oil industry was likewise unprepared to meet the challenges they faced. Now, after two years, there are some who feel development has moved too rapidly, some who feel it has moved too slowly, and some who feel the pace has been about right.

In my remarks this morning, I will outline the objectives of the Federal government as they relate to the oil development of the North; the very real values that have to be considered and protected in meeting these objectives; and some of the cold region constraints that have to be reckoned with in our activities within this region.

On April 18, 1969, the Secretary of the Interior appointed a Task Force on Alaskan Oil Development. Under Secretary Russell Train was asked to head the group which included: the directors of the Bureaus of Sport

Fisheries and Wildlife; Commercial Fisheries and Land Management; the U.S. Geological Survey; the Commissioners of the Federal Water Quality Administration and the Bureau of Indian Affairs; the Science Advisor to the Secretary; and representatives of the State of Alaska.

The Task Force was charged with the responsibility of setting guidelines for the development of Federal lands in the Arctic in a manner compatible with continued wise conservation of the natural environment.

In a statement to the Senate Interior and Insular Affairs Committee, Secretary Hickel said the North Slope oil discovery "poses a great challenge to this country's ability to capture this needed resource while at the same time protecting to the greatest extent possible, the fragile Arctic environment from the processes of exploitation."

On May 9, 1969, President Nixon, in a communication to Secretary Hickel, said, "It is urgent that we consider now the ways in which we can explore and develop, without destruction and with minimum disturbance, the oil resources of northern Alaska." He went on to suggest that the Task Force be enlarged to serve as a Government-wide group with the inclusion of representatives of the Secretaries of Commerce, Defense, Health, Education and Welfare, Transportation, and other departments or agencies as necessary.

The Task Force, through its working group in Alaska, headed by the Bureau of Land Management, may seem to some as a large, cumbersome, bureaucratic mass of red tape. However, from my point of view, it has worked amazingly well and has been effective in meeting its objectives in those areas of principle concern such as the Trans-Alaska Pipeline. The Task Force has not addressed itself directly to specific problems of environmental health on the North Slope for this is primarily a State responsibility.

Let me regress for just a moment and emphasize some key words which I think clearly state the objectives of the Federal agencies with responsibilities

in the North Slope oil development. President Nixon used the words "develop without destruction and with minimum disturbance." Secretary Hickel said "capture this needed resource while at the same time protect to the greatest extent possible, the fragile Arctic environment." The Secretary has also stated as recently as August 18, 1970, here in Anchorage, that, "unlike the booms and gold rushes of the past, the development of the north will be done responsibly. We are committed to see that there will be no senseless desecration." Commissioner David Dominick, head of my own agency, the Federal Water Quality Administration, said on November 18, 1969, that, "In our offensive against the scourge of water pollution--and other forms of environmental pollution--we must advance to a state of skill and knowledge whereby we can both develop and conserve a natural resource. We can't build a fence around our resources and divorce them from economic use. At the same time, we must seek to preserve and enhance the physical world about us."

These are policy statements by responsible leaders of our country. They then become objectives for us at this level to translate into specifics. This is not an easy task, for within this broad framework lies room for varying interpretations by agencies and individuals- However, I have every confidence that we here in Alaska, endowed with the pioneering spirit and the spirit of cooperation, can work this framework and achieve these objectives.

Oil exploration and development of the north has required the utilization of an advanced technology. A technology that will allow us to work in harmony with our environment rather than against it.

Ten Interior agencies have programs in Alaska. Many of these agencies have important responsibilities relating to cold regions environmental health, which reflect the concerns of the Congress and the nation as a whole. I

will mention briefly four broad categories of values that have to be considered in meeting the objectives just mentioned.

People are an important obligation. In this case, native Alaskans, a term embracing three ethnic groups that are dispersed throughout the State, most of them in an indescribably impoverished condition. Oil development in the North will have to prove beneficial to this segment of Alaska's population.

Commercial fishing has, until the present, been the State's largest industry both in value of annual production and in employment. In value it surpasses that of any other state and has a great potential for increase. Oil development in the North cannot be at the expense of commercial fisheries.

The land: What man finally does with the land will be the deciding factor in man's survival. For the land is his foundation; most of what he builds is built on the land and from the land. Much of man's recreation and his enjoyment is related to the care and use of the land. National parks and monuments, wildlife refuges and ranges, wilderness and scenic areas, tundra and taiga, forests and barren mountains, mineral and fuel resources, will all play a vital role in the quality of man's life in Alaska and throughout this nation. The injunction that man shall not live by bread alone does not diminish the need for bread; instead, it focuses attention on the wider vistas of the human spirit. Therefore, oil development in the North must protect and enhance other land uses.

Water flows through all the problems facing man and his environment. In and around man's dreams and his activities, lies water. Alaska is rich in water, yielding almost four times that of the 17 western states. Adding that which enters Alaska from Canada, total runoff is more than 40 percent of the total fresh water of the United States. And yet, with all of its apparent abundance, we find desirable water quality in short supply. This is particularly true in the cold regions of Alaska. Alaska's water represents

outstanding values in the natural state; important fish and water fowl habitat and production grounds, unusual aesthetics, superb recreational opportunities, a water transportation network, and a safe and dependable water supply. Oil development in the North must protect these vital water resource values.

I have mentioned the objectives of the Federal government in the development of our Arctic oil resources. And also, the values of people, commercial fishing, the land and the water, that are of real concern to the conservation agencies. Now, I would like to mention some of the more important constraints that are imposed upon us by the Cold Regions of the North. These constraints will be thoroughly discussed by panelists as they apply to water supply, sewage disposal, and solid waste management.

The cold regions of the Arctic and Interior Alaska are arid or semi-arid in nature, with relatively small accumulations of annual precipitation. Rivers and streams fluctuate from severe flooding to little or no winter flow. Other surface water supplies such as lakes and ponds are often at some distance from the source or demand or are of a poor quality for domestic uses. Permafrost restricts subsurface drainage and groundwater recharge complicating the development of groundwater as a reliable source. Low temperatures generally decrease domestic water consumption; however, good quality water is scarce and can approach the cost of fuel under some conditions of demand in Arctic Alaska.

Temperature also has a profound influence on the considerations affecting sewage collection, treatment and ultimate disposal. Construction materials used must be studied sufficiently to understand their properties and behavior under low temperature conditions. Biological reactions are slowed as the temperature is lowered. Disease-producing organisms can remain viable for extended periods of time in food, drink, wastes, and the natural environment. Many of the natural flora and fauna of the Arctic

are unique and the species diversification is low compared to a more temperate climate. All of these conditions point to what is commonly called the fragile ecology of the Arctic. Chemical reactions are generally retarded by lowering temperatures. Such processes as oxidation, reduction, coagulation, solubility, vaporization, and precipitation can be adversely affected in relation to waste treatment and disposal by low temperatures. Soil temperature and stability are ever present factors necessary for the proper design, construction and operation of facilities for the collection, treatment and ultimate disposal of sewage and solid wastes.

These environmental constraints that I have just mentioned create formidable obstacles that have to be overcome. Our advanced state of technology can, however, overcome these obstacles. To do so will require some compromise of the values we are trying to protect and enhance. For example, in the treatment of domestic wastes, we invariably end up with solid residues that require disposal. If we dispose of them in the ground where soil is insufficient to cover, temperature is insufficient to stabilize, or where ground and surface waters can be contaminated, then we face serious possibilities of the transmission of disease by vector. If we dispose of these same solids into a water course, we face the same serious public health problems in addition to an unknown stress upon the aquatic environment. If we dispose of these solids through incineration, there will be some degree of air pollution. A compromise of values has to be made. There are other factors, such as economic and social, that have to be considered, but in this particular example, incineration would seem to be the desirable alternative.

There is still a log of controversy in some areas over the relative harm that waste disposal may be causing. The tendency in the past was to

wait until the damage was obvious before taking abatement action. The philosophy being to make full use of the waste assimilative capacity of our waters. One of the problems with this philosophy is that it placed unwarranted reliance on our ability to assess the critical point.

Whatever ability we have to assess this critical point in more temperate environs is of little help to us in the Arctic. Our knowledge and understanding of the systems that operate in cold regions is small in comparison. Our scientific shortcomings, if nothing else, then force us back to philosophy. For the Federal Water Quality Administration, this philosophy emphasizes environmental protection and enhancement. In other words, to keep as much waste out of the water as possible.

In the cold regions of Alaska, we must approach questions of waste disposal with greater caution than in the more temperate regions. We must also quicken our research efforts, including development and demonstration, in order to satisfactorily allow the development of this Great Land without the historic destruction and degradation of our natural environment. To this end, we pledge our talents and our resources and ask for your cooperation and support.

Thank you.
