

## NEED FOR EFFLUENT STANDARDS

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The administration of New Mexico's Water Quality Act is assigned to the Water Quality Control Commission. The Water Quality Act, Chapter 190, Laws of 1967, establishes the method of administering water quality in the State of New Mexico. The law provides for the adoption of water quality standards as a guide to water quality.

The Commission has adopted Water Quality Standards in accordance with the New Mexico Water Quality Act and in compliance with the Federal Water Pollution Control Act. A Federal requirement in the adoption of Water Quality Standards is the inclusion in the Standards package of a plan of implementation. New Mexico's Water Quality Standards and Implementation and Enforcement Plan have been completed and approved as Federal standards by the Secretary of the Interior. The Implementation and Enforcement Plan establishes the method of controlling water quality in the stream by the establishment of effluent quality requirements which will in effect maintain the stream quality within the limits of parameters as established by the standards.

These effluent quality requirements or effluent standards are established by the adoption of regulations. To put this in simple terms, effluent regulations are adopted by the Water Quality Control Commission in order to maintain stream quality within the standards and to prevent or abate pollution. Effluent regulations are needed because stream standards are not enforceable against an individual. Effluent regulations establish specific parameter limits which must be maintained in order for an individual to discharge waste water.

To date, the Water Quality Control Commission has adopted two regulations which deal specifically with waste disposal. They are Regulations 3 and 4. Regulation 3 prohibits disposal of refuse in a watercourse or where the refuse could be washed into a watercourse (by leaching or otherwise).

This regulation (when enforced) in effect protects the water against pollution from solid wastes.

Regulation 4 establishes effluent quality of water discharged to a watercourse. There are three parameter limitations established by Regulation 4. They are BOD at 30 mg/l, COD at 50 mg/l and settleable Solids at 0.5 ml/l. These three parameter requirements, at the limit set, control nuisance conditions. The first, BOD controls organic material that can be biologically degraded to cause an oxygen depletion and/or septic conditions. The second, COD controls organic materials such as cellulose which is not biologically degradable but does add an organic load to the stream. In all probability, COD could be increased from 50 mg/l to 100 mg/l without creating a problem in most streams.

The third parameter, Settleable Solids makes mandatory that practically all waste waters receive sedimentation treatment. Generally speaking, plain sedimentation (that is without chemical coagulation) is sufficient treatment to allow for meeting the Settleable Solids Requirement.

The existing Regulation 4 is in need of amendment. The present form was a first draft and is applicable statewide. It is not stringent enough to protect mountain streams and should be tailored to certain stretches of streams and dry areas with no flowing water.

Other parameters included in the standards that should be covered by effluent regulations are pH, oil and grease, temperature, fecal coliform, floating solids, turbidity, toxic substances, odor, color and dissolved ionic constituents.

The Governor's Policy Board and Technical Advisory Committee on Air and Water Pollution Control recommended in their message to the Governor that effluent regulations be considered for color, turbidity, salinity and temperature. You may note that color was the first consideration. The reason for a color regulation is the control of paper mill effluents. The Governor's Advisory Board was meeting during the time Parsons & Whittemore were considering location of a paper mill in the Middle Rio Grande Valley. Color is nevertheless a significant water contaminant in numerous industrial wastes and if New Mexico is to control pollution from the pending industrial development being pursued by numerous agencies, she must prepare sufficient effluent regulations to cover possible contaminants. Before an effluent regulation for color can be considered, background information on present color levels in New Mexico streams and waste water discharges must be obtained. At the present time, absolutely no color data in quantitative terms is available to the Commission on New Mexico's waters.

A turbidity regulation is needed to protect high quality waters from reduction of light penetration. The reduction of light causes a decrease in photosynthesis with a concomitant decrease in stream biota. Again, there is no background data on turbidity available to the Commission. The U. S. Geological Survey has just initiated color and turbidity determinations on samples collected at water quality monitoring stations operated under a cooperative arrangement with the Interstate Stream Commission, a constituent agency of the Water Quality Control Commission. The Health & Social Services Department now makes quantitative measurements of color & turbidity on samples of waste water discharges collected throughout the state.

Our stream standards spell out specific temperature requirements specifically for the purpose of protecting warm and cold water fisheries. The standards cover streams in sufficient detail to protect both natural and developed fishery. Effluent regulations to control temperature need to be developed in specific relation to the standards to control degradation of the state's Fishery potentials. Temperature data is available to the Commission in sufficient detail to allow for adoption of a temperature regulation, and the Commission has a proposed regulation under consideration at the present time.

Effluent regulations to control pH should be adopted by the Commission in order to protect the state's water from harmful fluctuation in pH.

The parameters of oils and grease and floating solids have not been given serious consideration to date. The Health & Social Services Department, in cooperation with the Federal Water Pollution Control Administration, is presently engaged in an industrial Waste Survey in an attempt to inventory the extent and character of New Mexico's industrial wastes. Pending the outcome of the initial inventory, additional waste water characterization may be undertaken by the Oil Conservation Commission to determine the need for effluent regulations to control oils and greases.

A fecal coliform parameter regulation is needed to protect the bacteriologic quality of our surface waters. The most stringent requirement is to protect recreation waters for body contact sports.

The fishing waters must be protected to a high degree of purity, and all other waters should be protected to prevent nuisance conditions and protect the public health. The main contributor to surface water fecal coliform contamination is municipal waste water effluents. A chlorination requirement or effluent regulation, stipulating fecal coliform levels to be maintained, will effectively control municipal waste discharges. An additional source of fecal coliform contamination, the cattle feeding industry, will require different regulations for control.

The present push for additional cattle feeding industry in the state will increase the water pollution potential, both from fecal coliform and organic contaminants.

An effluent regulation to control toxic substances will be difficult to develop, but the need is obvious to protect human health as well as fish and wildlife. The multitude of toxic elements and the continued development of pesticides and herbicides, along with the complexity in measurement of minute quantities of the materials in water adds to the problem. The control of toxic substances in effluents, however, must be developed if the state is to have a comprehensive water quality control program. The only feasible method that I can see, of control of toxic substances, is to develop a regulation which establishes a percentage of the TLM of specific species of biota, fish and mammals when exposed to waste waters. The problem will require extensive investigation before a regulation can be proposed. With the Game and Fish Dept, and the Health & Social Services Departments' present resources, it will probably take a catastrophe before the potential hazard will be properly investigated and even longer before control measures can be adopted.

Odor is possibly the least significant parameter covered in the Water Quality Standards but will be very difficult to control by effluent regulations because of the elusiveness and unquantitative nature of the parameter. To date, no effort has been directed toward the control of odors. One additional parameter not previously mentioned is radionuclides. The Water Quality

Control Commission has, to date, left the control of radioactive substances up to the Atomic Energy Commission. The Health & Social Services Department is presently preparing a report for the Water Quality Control Commission which will outline present controls in effect by Health & Social Services and Atomic Energy Commission as well as recommendations for additional controls to adequately protect the state's water resources.

I have left the subject of dissolved ionic constituents as the last parameter for discussion because it is the most difficult to cover. The consideration of property rights of individuals as protected by water rights developed under present New Mexico water law and Interstate Compacts is integrally involved in any proposal for the control of dissolved ionic constituents. For this very reason, Water Quality Standards have not yet been fully developed for New Mexico streams and until Water Quality Standards can be developed, it is virtually impossible to reasonably consider development of effluent regulations to cover dissolved solids. The need for effluent regulations to control dissolved solids will be directly proportional to the need for water resources and higher use demands which are both directly related to population increase. The development of Water Quality Standards for dissolved solids is dependent upon ultimate development of the State's limited water resources, and is the most significant parameter considered from the standpoint of the economic position of the State. Until the value of the water resource exceeds the cost of desalinization, effluent regulations to cover dissolved ionic constituents will be nearly impossible to perfect.

The control of salinity in the interim will be through the competitive uses of water available under present water rights allocation and the control of individual situations which unreasonably increase salinity.

The needs for additional effluent regulations are great, and the resources are limited. For this reason, the most significant parameters must be considered first and a priority of need must be established. Those regulations that control, from a practical standpoint, multiple parameters will be most beneficial to water quality control. You can rest assured that the Water Quality Control Commission is developing data which will eventually permit the proper development of additional effluent regulations and that during the next several years, we will see the development of additional effluent regulations as well as modification of present and future regulations.