

water we must either: (1) increase the amount of fresh water, (2) discover new sources of fresh water, or (3) reuse our available fresh water sources.

One may look at pollution control as a program dedicated to permit the multiple use of our water. For example, so that water used by municipalities, can be reused for propagation of aquatic life. Our fish-and-aquatic-life water might be reused by industries and further reused for irrigation. Water used for irrigation, to be reused for recreation. Indeed, water used by one municipality, to be reused by another municipality.

Wastewater treatment is the most common method for removing manmade impurities so that our environment is protected. We must remove enough of the impurities so that their presence cannot be overwhelming. Obviously, since the amount of fresh water is relatively fixed and since the amount of pollution we generate increases steadily, more impurities have to be removed.

To illustrate this, I have some bottles here, one of which includes raw waste water. As the waste loads increased, we had to introduce treatment which we refer to frequently as primary treatment to remove some impurities and then we discharge the waste water. With further treatment we are able to remove more impurities; as pollution continues to grow we will have to remove more and more of the impurities. Many locations in the United States today are providing this degree of treatment.

The degree of waste water purification required is determined by the specific purpose for which the treated water will be used.

Gentlemen, this is a plant for the treatment of polluted water. I am going through the illustration. First is primary treatment, followed by secondary treatment; one often hears about it. The third treatment is advanced waste treatment which now adds all known processes. One of the interesting things in our approaches has been that it enables us to build on existing facilities.

It becomes apparent that, as we remove more and more of these impurities, we end up with water that certainly looks pretty good. As a matter of fact, it is too good to throw away. We find many places throughout the United States—the West, East, North, and South—where people are looking at this way of augmenting certain waters which they may need.

This is an illustration of a 2½ million gallon per day plant at Lake Tahoe where this degree of treatment is provided today.

Here is a plant at Santee, Calif., where waste water is being treated for reuse in recreational lakes. People swim in that water; they are fully aware that it is treated waste water. It was because of the demand by the public, that it was finally opened for swimming.

This represents a waste water treatment plant at Whittier Narrows, Calif.; the treated waste water is used to recharge the ground water so as to augment the municipal water supply.

Gentlemen, it is possible that we can solve two major problems by applying existing improved and new technology. One of the major problems being total water pollution control from known sources and the removal of all impurities I have indicated. There is a possibility that we can reduce the low-flow augmentation requirements needed to enhance the quality of our streams. And, this actually rep-