STATE OF CALIFORNIA
STATE WATER RESOURCES BOARD

REPORT ON
APPLICATION FOR ASSISTANCE
ANTELOPE VALLEY WATER SUPPLY

The request for assistance to prevent further ground water lowering in the Antelope Valley was made by the Antelope Valley Soil Conservation District. Information herein supplied was taken from the following sources:

Memorandum on the Antelope Valley Soil Conservation program by John S. Barnes, United States Soil Conservation Service, received January 22, 1946.

"The Irrigation Development of Antelope Valley, California", compiled by Paul A. Ewing, United States Soil Conservation Service, October, 1945.

"The Mohave Desert Region, California", United States Geological Survey water-supply paper 578, 1929.

The District was organized in 1944 under the State Soil Conservation Act (Division IX, Public Resources Code). It includes an area of 1700 square miles. The Portal Ridge Soil Conservation District and three townsites all within the exterior boundaries, are excluded. The general objective of the District acting with other agricultural agencies, is the improvement of farm land-uses. Erosion control and conservation of water supply is an important part of the program.

PWS-0050-0001

Antelope Valley

The Antelope Valley watershed comprises the northeasterly portion of Los Angeles County and a part of Kern County. The valley is a closed basin consisting of mountains, alluvial slopes, dry lake beds, and desert. Cultivated areas are largely in the western portion and total 80,000 acres of which approximately 30,000 acres are under irrigation. There are about 800 farms which produce alfalfa, grain and fruit. The towns of Lancaster, Palmdale and Rosamond have a combined population of 3500.

There are two irrigation districts in the valley, the Palmdale with 4300 acres and the Littlerock Creek with 2200 acres of irrigable land. Water is obtained from surface supplies supplemented by pumping.

Water Supply

All surface and underground water supplies are derived from precipitation in the basin. Unused run-off is largely absorbed into the ground water and the small amounts reaching the low parts of the valley are rapidly evaporated. The average annual run-off is estimated at 75,000 acre-feet, two-thirds of which enters the ground water. The mean precipitation in the valley is less than 10 inches.

Water for irrigation is supplied from two reservoirs operated by the irrigation districts and from some 600 wells. There is no material shortage in the surface supply of the irrigation districts but there is a steady decline in the ground water level affecting all the wells. Water requirement of plants is high because of high temperatures and irrigation water demands are greater than in most areas.

Water Conservation

Attempts are being made by the Antelope Valley Soil Conservation District to find means of preventing further lowering of the ground water. The District has prepared an outline of study which is submitted with the request for assistance. Solutions proposed to conserve the water supply are the following:

1. More economical [illegible]

Investigations have been made in the past on many of these features. The State of California and the Soil Conservation Service of the Department of Agriculture under cooperative agreements conduct joint studies on the use and conservation of irrigation water. Some of this work was done in Antelope Valley.

Action by the Water Resources Board

The Antelope Valley Soil Conservation District with assistance of other agencies is proceeding to find a solution of the water shortage. The nature of the aid that might be furnished by the Water Resources Board will need to be ascertained. This could be secured by inquiry or hearing by the Board or by preliminary investigation by the Division of Water Resources.

Prior to the undertaking of investigations of local projects by the Water Resources Board, the Board will need a policy with respect to the financial participation of the agency making application.

THE ANTELOPE VALLEY SOIL CONSERVATION PROGRAM

The Portal Ridge and Antelope Valley Soil Conservation Districts were organized in 1941 and 1944 respectively. The Portal Ridge District contains about 45,000 acres and is entirely surrounded by the Antelope Valley District, consisting of a little over a million acres. The Antelope Valley District includes 238,000 acres in Kern County.

There are over 2,800 individually-owned parcels of land and about 1,500 operating units in the Antelope Valley. The 30,000 acres of irrigated land consists of about 28,000 acres of alfalfa and 2,000 acres of deciduous orchards and truck crops. Grain is raised on about 50,000 acres, of which about 10,000-15,000 acres are annually in summer fallow, which creates a serious wind erosion problem.

There are about 600 irrigation wells in the Valley, using about 67,000,000 kilowatt hours per year. The Littlerock Reservoir irrigates about 1,200 acres in the Littlerock area and 1,100 acres in the Palmdale area. The original capacity of the reservoir when constructed in 1924 was 4,217 acre feet. Sediment has now reduced its capacity by about 20 percent.

The objectives of the district are as follows:

1. To reduce soil erosion from the surface of the fields and hills and from the numerous gullies.

2. To prevent loss of soil productivity caused by deposition of debris in the fields.

3. To prevent the accumulation of debris and silt on the roadways.

4. To develop a [illegible] system to give adequate flood protection to the land and [illegible] of the district.

5. To preserve all [illegible] possible and [illegible] prevent [illegible] the [illegible]

9. To encourage diversification of crops in each farm unit.

10. To improve irrigation practices for more effective use of the limited water supply.

11. To reduce the hazard of uncontrolled fires.

12. To eliminate undesirable animals and weeds.

13. To encourage desirable species of wildlife.

14. To disseminate information concerning improved farming and grazing practices and best land utilization, and

15. To provide greater and more stable farm and community income by effecting the above goals.

The objectives of the District are being accomplished along three major lines--education, work with individual farmers and community action. The County Extension Service helps the District with the educational work. The Soil Conservation Service assists with work with individual farmers and community jobs. The directors coordinate the activities of all agencies assisting the District and are assisted by a large Advisory Committee including representatives of local, county, State and Federal agencies. These agencies are called upon to assist the District with particular phases of the work.

The Soil Conservation Service maintains an office at Lancaster with a staff of technicians assigned to help both the Portal Ridge and Antelope Valley Districts. The staff currently consists of two agriculturally trained men and two civil engineers and two aides to assist the technical men. In addition, a range man is located at Lake Hughes for work on both the Antelope Valley and Quail Lake Districts. Services of soils men are made available as needed for making

The Soil Conservation Service staff has helped the District with of the items listed as the District. Land is according to the crops best be used and developed with indivi ation is worked out field, the method of ved. The major practices being appli 12,000 acres of of grain lands, use of vision of irrig

Along with the work with individual farmers has gone assistance with special jobs on water conservation and flood control. A start has been made in water spreading to get waste water into the ground from the Los Angeles aqueduct and flash storm water from side canyons. Soil Conservation Service engineers have made the surveys and worked out the design for the structures with the help of Mr. McLaughlin's Irrigation Division and local engineers. The District has raised some $15,000 to expand this work, which it is felt should have a beneficial effect on the water table which is becoming lower each year. Flood damage is heavy in places and some assistance has been given the District in sizing up the job to be done and making rough cost estimates. The Muroc Lake job would probably run into several million dollars and no detailed plans have been made.

The District is attempting to work out some practical means of preventing a further lowering of the ground water and at the same time make most effective use of available water supplies. The irrigation studies have shown that large quantities of water are wasted and this situation is being remedied to some extent. No practical solution to the problem of how to prevent a further lowering of the water table has yet been developed.