IN THE OFFICE OF THE STATE ENGINEER
IN THE STATE OF NEVADA

IN THE MATTER OF APPLICATION 48957)
FILED TO APPROPRIATE THE PUBLIC)
WATERS OF AN UNDERGROUND SOURCE IN)
CLOVER VALLEY, ELKO COUNTY, NEVADA.)

RULING
#3867

GENERAL

I.

Application 48957 was filed on April 3, 1985, by Vernon and Joan Westwood to appropriate 1.0 c.f.s. of water from an underground source for irrigation and domestic purposes on 40 acres of land within a portion of the W1/2 SE1/4 Section 33, T.35N., R.62E., M.D.M. lying west of Nevada State Highway 93. The point of diversion is described as being within the SW1/4 SE1/4 Section 33, T.35N., R.62E., M.D.B.&M.[1]

II.

Application 48957 was timely protested on August 1, 1985, by Taylors Ltd. on the following grounds:

> The Protestant has a well application near the above numbered Application which is earlier in time and higher in priority than the above Application. The Protestant is informed and believes that its water table would be adversely affected by the drilling of a well and pumping of water from a source so near to its application.
> In addition, the drilling of a well and pumping of water pursuant to the above application would impair prior vested and appropriated water rights which the Protestant holds nearby.
>
> Therefore the protestant requests that the application be denied and that an order be entered for such relief as the State Engineer deems just and proper.

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[1] Public record in the office of the State Engineer.

III.

By Order No. 850, dated March 11, 1985, the State Engineer designated and described Clover Valley Ground Water Basin under the provisions of NRS Chapter 534 (Conservation and Distribution of Underground Waters).[1]

VI.

State of Nevada, Office of the State Engineer, Water Resources Bulletin No. 12 entitled "Contributions to the Hydrology of Eastern Nevada," was prepared cooperatively by the United States Geological Survey and the Nevada Department of Conservation and Natural Resources. This report is available for review at the State Engineer's Office in Carson City, Nevada.

FINDINGS OF FACT

I.

The principal source of ground water to the Clover Valley Ground Water Basin is from precipitation on the east flank of the East Humboldt Range, with lesser amounts being supplied from other mountain drainages bordering the basin.[2]

Weather records at Clover Valley Station indicate an annual precipitation of 13.22 inches. This station was on the lower west side slope of Clover Valley and probably reflects a somewhat higher precipitation than falls on the valley floor. Much of the precipitation occurring on the valley floor is lost by evaporation or transpiration before it reaches the ground water reservoir.[2]

A reconnaissance method of estimating average annual ground water recharge from precipitation indicates an annual increment of about 21,000 acre-feet for Clover Valley.[2]

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[2] Water Resources Bulletin No. 12, Clover Valley, public record in the office of the State Engineer.

Another method of estimating average annual ground water recharge to Clover Valley, based on a percentage of the total precipitation, was used by T.E. Eakin and G.B. Maxey of the U.S. Geological Survey. The estimated the average annual recharge to be 20,700 acre-feet.[2]

Estimates of the average annual ground water discharge suggests that about 19,000 acre-feet are discharged from Clover Valley, therefore, this represents the estimated perennial yield of the Clover Valley Groundwater System excluding secondary recharge from irrigation which is estimated to be a minimun of 6800 acre-feet annually.[2]

Groundwater is discharged from Clover Valley by transpiration, evaporation, springs and wells. Although under flow from Clover Valley to Independence Valley is possible, it is concluded to be very small because of the low water level gradient and low permeability of the sediments in the segment between the two valleys.

II.

Permits and certificates have been issued under existing rights for approximately 20,500 acre-feet annually of ground water within the Clover Valley area.[1]

III.

A test well, No. 35/62-27B1, was drilled in Clover Valley in 1949. This well is located within the NE1/4 NW1/4, Section 27, T.35N., R.62E., M.D.B.&M. The data from that test well is incorporated into Bulletin No. 12.[2]

Based on the information provided by a 1981 pump test conducted on Well 35/62-27B1, aquifer characteristics were defined by the staff of the Division of Water Resources. Projected water level drop was calculated based on a 160 day irrigation season, by a computer model analysis.[1]

The point of diversion of Application 48957 is one quarter mile from the nearest well. Analysis shows that sustained pumpage from the proposed point of diversion at a rate of 1.0 c.f.s. for a period of 15 years would cause a lowering of the groundwater table at the nearest well of 4.2 feet. This analysis does not take into account any groundwater recharge that may occur and, therefore, should represent a worst case scenario. The State Engineer finds that a maximum of 4.2 feet drop in the water table is not unreasonable.

CONCLUSIONS

I.

The State Engineer has jurisdiction of the parties and the subject matter of this action and determination.[3]

II.

The State Engineer is prohibited by law from granting a permit under an application to appropriate the public waters where:[4]

A. There is no unappropriated water at the proposed source, or

B. The proposed use conflicts with existing rights, or

C. The proposed use threatens to prove detrimental to the public interest.

III.

Based on the information and data available to the State Engineer, the granting of Application 48957 would not cause an overdraft of the perennial yield of the Clover Valley groundwater basin. Furthermore the analysis of the aquifer characteristics and the computer model show that granting this application will not conflict with existing rights or prove detrimental to the public interest.

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[3] NRS Chapter 533.325.

[4] NRS Chapter 533.370(3).

RULING

The protest of Application 48957 is hereby overruled and a permit will be issued under Application 48957 upon payment of the required statutory permit fees. The permit will be issued with the condition that a totalizing meter be placed on the well and a pump test, acceptable to the State Engineer, be conducted and the results thereof be submitted as part of the proof of completion of work.

Respectfully submitted,

R. MICHAEL TURNIPSEED, P.E.
State Engineer

RMT/MJR/pm

Dated this 21st day of

January, 1992.

Interpretation of Drawdown in Clover Valley

Introduction

With the concentration of large commercial irrigation wells, the potential affect of a new well is a concern of owner of existing water rights. Clover Valley has an area where an existing owner has protested new applications for just this reason.

In an area of 72 square miles there is better than 14,000 acre feet (Appendix) of water permitted and certificated at this time. Additional applications have been made and have been protested.

In an effort to determine if the quantity of water being requested by Application 48957 would have an adverse affect on existing water right, a computer model was done using previously calculated parameters.

Scope of Work

In order to use the computer program, certain aquifer characteristics needed to be defined. In June of 1985 an analysis of a pump test produced the approximate values of transmissivity (T) and storativity (S) for the area of the computer model. These aquifer properties are not time specific, therefore, we are assuming that they are still valid. The radii used in the program were chosen for the illustrative quality and the distance proximity to other wells.

The computer formulates probable drops in the groundwater level due to groundwater pumping for an extended period of time. The protestants well is approximately 9,000 feet from the proposed point of diversion of Application 48957. The program does not take into consideration ground water recharge but only the effect of sustained pumping. After 15 years the predicted drop in ground water due to this new appropriation would only be 4.2 feet.

Assuming an irrigation season of 180 days, the predicted drop in ground water from the proposed appropriation at the protestants well, would only be 3.6 feet at the end of the irrigation season.

The decision on granting application 48957 is given in Ruling Number 3867, issued on January 21, 1992.