

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

IN THE MATTER OF APPLICATION)
48968 FILED TO APPROPRIATE THE)
PUBLIC WATERS OF AN UNDERGROUND)
SOURCE WITHIN THE DAYTON VALLEY)
HYDROGRAPHIC BASIN (103),)
CARSON CITY COUNTY, NEVADA.)

RULING

5191

GENERAL

I.

Application 48968 was filed on April 5, 1985, by Carson City to appropriate a diversion rate of 2.23 cubic feet per second, not to exceed an associated annual duty of water of 1,614.45 acre-feet. The proposed manner and place of use is for municipal purposes within all of T.15N., R.20E., M.D.B.&M., the E $\frac{1}{2}$ of T.15N., 19E., M.D.B.&M., Sections 2, 3, 4, the E $\frac{1}{2}$ of Section 5 and that portion of the N $\frac{1}{2}$ NE $\frac{1}{4}$ of Section 6 which lies within the limits of Carson City, T.14N., R.20E., M.D.B.&M., Sections 31, 32, 33, 34, 35, the W $\frac{1}{2}$ Section 36 and those portions of the E $\frac{1}{2}$ of Section 36 which lie within the limits of Carson City, T.16N., R.20E., M.D.B.&M., the S $\frac{1}{2}$ of Sections 34, 35, and 36, NE $\frac{1}{4}$ Section 36, and those portions of the SW $\frac{1}{4}$, the NW $\frac{1}{4}$ of Section 36 and the S $\frac{1}{2}$ NE $\frac{1}{4}$ of Section 35 which lie within the limits of Carson City, T.16N., R.19E., M.D.B.&M. The proposed point of diversion is described as being within the SE $\frac{1}{4}$ SE $\frac{1}{4}$ of Section 10, T.15N., R.20E., M.D.B.&M.¹

FINDINGS OF FACT

I.

The committed groundwater resource in the form of permits and certificates issued by the State Engineer to appropriate

¹ File No. 48968, official records in the Office of the State Engineer.

underground water from the Dayton Valley Hydrographic Basin currently exceeds 30,048 acre-feet annually.²

The perennial yield of a hydrologic basin is the maximum amount of water of usable chemical quantity that can be consumed economically each year for an indefinite period of time. The perennial yield cannot exceed the natural replenishment to an area indefinitely, and ultimately is limited to the maximum amount of natural recharge that can be salvaged for beneficial use. If the perennial yield is continually exceeded, groundwater levels will decline until the groundwater reservoir is depleted. Withdrawals of ground water in excess of the perennial yield contribute to adverse conditions such as water quality degradation, storage depletion, diminishing yield of wells, increased economic pumping lifts, land subsidence and possible reversal of groundwater gradients which could result in significant changes in the recharge-discharge relationship.³

The Dayton Valley Hydrographic Basin has experienced continual and vigorous development of its underground water resource since 1975 when the United States Geologic Survey (USGS) first evaluated the groundwater basin's water resources as part of its Nevada water reconnaissance program. The findings of the hydrologic study, which are specific to the Dayton Valley Hydrographic Basin, can be found within Water Resources - Reconnaissance Series Report 59, Water-Resources Appraisal of the Carson River Basin, Western Nevada "Recon 59". This report, which was authored by Glancy and Katzer provides a general understanding of the groundwater basin's recharge-discharge relationship from which an estimate of the Dayton Valley's perennial yield is derived.

² Nevada Division of Water Resources Water Rights Database, Hydrographic Basin Summary, Dayton Valley, October 3, 2002, official records in the Office of the State Engineer.

³ State Engineer's Office, Water for Nevada, State of Nevada Water Planning Report No. 3, p. 13, October 1971.

Glancy and Katzer estimated the potential groundwater recharge to the Dayton Valley Hydrographic Basin by precipitation was 7,900 acre-feet annually (afa). An additional 1,615 afa was added from subsurface inflow through the alluvial units from the adjacent Eagle Valley and Carson Valley Hydrographic basins, minus the 70 acre-feet of underground flow from Dayton Valley to Churchill Valley. Therefore, the perennial yield of the Dayton Valley Hydrographic Basin was calculated by Glancy and Katzer to be 9,445 acre-feet.⁴

In 1994, the USGS initiated a hydrologic study to re-evaluate the reconnaissance level water budget for the Dayton Valley, which had previously been defined in Recon 59. This new study culminated with the release of Water Resources Investigations Report 97-4123, Hydrology and Ground-Water Budgets of the Dayton Hydrographic Area, West-Central Nevada, in 1997 "Report 97".⁴ By utilizing refined estimates of the water budget components, the groundwater recharge and discharge estimates for the Dayton Valley Hydrographic Basin were assigned a new range of values which exceeded those found in Recon 59. However, even if the high end recharge and discharge values are used to evaluate the basin's groundwater budget, the revised estimates of the underground water which may be available for appropriation are not of a magnitude which would exceed the basin's current committed groundwater resource. The State Engineer finds that both the original Recon 59 and revised Report 97 estimates of the Dayton Valley Hydrographic Basin's perennial yield are significantly exceeded by the committed groundwater resource.

II.

The State Engineer has denied applications, which requested a permanent appropriation of underground water for municipal

⁴ Maurer, D.K., Hydrology and Ground-Water Budgets of the Dayton Valley Hydrologic Area, West-Central Nevada, Water-Resources Investigations Report 97-4123, U.S. Geological Survey, U.S. Department of Interior, Carson Water Subconservancy District, 1997.

purposes within the Dayton Valley Hydrographic Basin, since 1980. These denials were based on the grounds that, withdrawals of additional ground water in a basin in which appropriations of ground water substantially exceed the perennial yield of the basin would therefore adversely affect existing rights and be detrimental to the public interest and welfare.⁵ The State Engineer finds that Application 48968 was filed to appropriate underground water for a similar use and in the same hydrologic basin as applications which have been denied in the past.

CONCLUSIONS

I.

The State Engineer has jurisdiction over the parties and the subject matter of this action and determination.⁶

II.

The State Engineer is prohibited by law from granting an application to appropriate the public waters where:⁷

- A. there is no unappropriated water at the proposed source;
- B. the proposed use or change conflicts with existing rights;
- C. the proposed use or change conflicts with protectible interests in existing domestic wells as set forth in NRS § 533.024; or
- D. the proposed use or change threatens to prove detrimental to the public interest.

III.

Application 48968 was filed to appropriate underground water from the Dayton Valley Hydrographic Basin. A comparison of the committed groundwater resource of the Dayton Valley Hydrographic Basin with the revised estimates of the basin's perennial yield fails to identify any additional underground water which may be available for appropriation within the groundwater basin. The

⁵ See State Engineer's Rulings for Application Nos. 39087, 43521, 63576, 63577, 63578, and 63579, official records in the Office of the State Engineer.

⁶ NRS chapters 533 and 534.

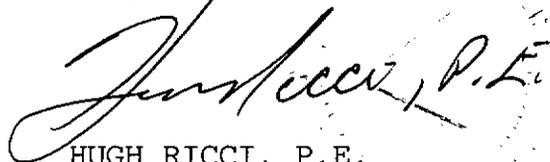
⁷ NRS § 533.370(3).

State Engineer concludes that to grant a permit under Application 48968 in a groundwater basin where the quantity of water under existing appropriations exceeds the basins' perennial yield would conflict with existing rights and threaten to prove detrimental to the public interest.

RULING

Application 48968 is hereby denied on the grounds that granting the application would interfere with existing rights and threaten to prove detrimental to the public interest.

Respectfully submitted,



HUGH RICCI, P.E.
State Engineer

HR/MB/jm

Dated this 12th day of
December, 2002.