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

IN THE MATTER OF APPLICATION 63892)
FILED TO APPROPRIATE THE PUBLIC)
WATERS OF AN UNDERGROUND SOURCE)
WITHIN THE DAYTON VALLEY GROUNDWATER)
BASIN (103), LYON COUNTY, NEVADA.)

RULING

4634

GENERAL

I.

Application 63892 was filed by Hughes Development Corporation on March 6, 1998, to appropriate 0.673 cubic feet per second (cfs), not to exceed 27.505 million gallons annually, of underground water for quasi-municipal purposes within the NE¼ NW¼, the NW¼ NE¼ and portions of the SE¼ NW¼ and the SW¼ NE¼ of Section 5, T.16N., R.22E., M.D.B.& M. The proposed point of diversion is described as being located within the SW¼ NE¼ of said Section 5.[1]

Remarks contained within Attachment "A" of Application 63892 indicate that said application was filed to request a new appropriation of any underground water which may be available for appropriation as a result of the recent evaluation of the Dayton Valley Hydrographic Area by the U.S. Geological Survey (USGS), Water Resources Investigations Report 97-4123.[1]

FINDINGS OF FACT

I.

The perennial yield of 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 can not 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 groundwater in excess of the perennial yield contribute to

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[1] File No. 63892, official records in the office of the State Engineer.

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.[2]

The Dayton Valley Groundwater Basin has experienced continual and vigorous development of its underground water resource since 1975 when the USGS first evaluated the groundwater basin's water resources as part of its Nevada water reconnaissance program. The findings of the hydrologic study which was specific to the Dayton Valley Groundwater Basin are found within Water Resources - Reconnaissance Series Report 59, Water-Resources Appraisal of the Carson River Basin, Western Nevada "Recon 59" which describes the sources and amounts of ground water available for appropriation from within the Dayton Valley. An estimate of the perennial yield of the Dayton Valley Groundwater Basin which was derived by a quantitive analysis of the groundwater basin's inflow, outflow and recharge amounts was calculated by Glancy and Katzer and is found within Recon 59.[3]

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

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

[3] Glancy, P.A., and Katzer, T.L., Water-Resources Appraisal of the Carson River Basin, Western Nevada, Water Resources Reconnaissance Series Report 59, pp. 48, 51, State of Nevada, Department of Conservation and Natural Resources, Division of Water Resources, Geological Survey, U.S. Department of Interior, 1975.

Valley Groundwater Basin was calculated by Glancy and Katzer to be 9,445 acre-feet.[3]

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 Valley 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 Groundwater 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 Groundwater Basin's perennial yield are significantly exceeded by the committed groundwater resource.

II.

Applications which requested a permanent appropriation of underground water for quasi-municipal purposes within the Dayton Valley Groundwater Basin have been denied by the State Engineer since 1973. These denials were based on the grounds that, "withdrawals of additional groundwater in a basin in which appropriations of groundwater substantially exceed the perennial yield of the basin would, therefore, adversely affect existing

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[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.

rights and be detrimental to the public interest and welfare".[5] The State Engineer finds that Application 63892 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 conflicts with existing rights; or

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

III.

Where a previous application for a similar use of water within the same hydrologic basin has been rejected on the grounds that there is no unappropriated water or where its proposed use conflicts with existing rights or threatens to prove detrimental to the public interest the new application may be denied without publication.[8]

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[5] See State Engineer's Rulings for Permits 27441, 27557, 27765, 29238, 30719, 36130, 36131, 38499, 38450, 38451, 38452, 38453, 38454, 38455, 38456, 38457, 38458, 38459, 40364, 40762, 41741, 41542, 44238, 47429, 60222 and 60223, official records in the office of the State Engineer.

[6] NRS § Chapters 533 and 534.

[7] NRS § 533.370(3).

[8] NRS § 533.370(3).

IV.

Application 63892 was filed to appropriate any unappropriated underground water which may be identified by the USGS recent re-evaluation of the Dayton Valley Groundwater Basin's groundwater budget. As a result of this study, revised estimates of the groundwater basin's groundwater recharge and discharge components were assigned values which where higher than those previously stated in an earlier reconnaissance level study. However, a comparison of the committed groundwater resource of the Dayton Valley Groundwater 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 State Engineer concludes that to grant a permit under Application 63892 in a groundwater basin where the quantity of water under existing appropriations exceeds the basin's perennial yield would conflict with existing rights and be detrimental to the public interest.

RULING

Application 63892 is hereby denied on the grounds that granting the application would interfere with existing rights and be detrimental to the public interest.

Respectfully submitted,

R. MICHAEL TURNIPSEED, P.E.
State Engineer

RMT/MDB/cl

Dated this 4th day of June, 1998.