

IN THE MATTER OF APPLICATIONS)
44515, 44516, 44517, 45536, 45537)
AND 45538 FILED TO APPROPRIATE THE)
PUBLIC WATERS OF AN UNDERGROUND)
SOURCE IN TRUCKEE MEADOWS (PANTHER)
VALLEY), WASHOE COUNTY, NEVADA.)

RULING 5963

GENERAL

I.

Application 44515¹ was filed on September 28, 1981, by Harold L. and Lois Roberts to appropriate 0.2 c.f.s. of water from an underground source for quasi-municipal purposes on land within the SE1/4 SE1/4 and NE1/4 SE1/4 Section 14, T.20N., R.19E., M.D.B.&M. The point of diversion is described as being within the SE1/4 SE1/4 Section 14, T.20N., R.19E., M.D.B.&M.

Application 44516¹ was filed on September 28, 1981, by Harold L. and Lois Roberts to appropriate 0.2 c.f.s. of water from an underground source for quasi-municipal purposes on land within the SE1/4 SE1/4 and NE1/4 SE1/4 Section 14, T.20N., R.19E., M.D.B.&M. The point of diversion is described as being within the SE1/4 SE1/4 Section 14, T.20N., R.19E., M.D.B.&M.

Application 44517¹ was filed on September 28, 1981, by Harold L. and Lois Roberts to appropriate 0.2 c.f.s. of water from an underground source for quasi-municipal purposes on land within the SE1/4 SE1/4 and NE1/4 SE1/4 Section 14, T.20N., R.19E., M.D.B.&M. The point of diversion is described as being within the SE1/4 SE1/4 Section 14, T.20N., R.19E., M.D.B.&M.

Application 45536¹ was filed on April 15, 1982, by Nell J. Redfield, Trust, to appropriate 1.0 c.f.s. of water from an underground source for quasi-municipal purposes on land within a portion of the SW1/4, W1/2 SE1/4, N1/2 NW1/4 Section 14 and a portion of the S1/2 NE1/4, SE1/4 Section 15, T.20N., R.19E., M.D.B.&M. The point of diversion is described as being within the SE1/4 SE1/4 Section 15, T.20N., R.19E., M.D.B.&M.

Application 45537¹ was filed on April 15, 1982, by Nell J. Redfield, Trust, to appropriate 1.0 c.f.s. of water from an underground source for quasi-municipal purposes on land within a portion of the SW1/4, W1/2 SE1/4, N1/2 NW1/4 Section 14 and a portion of the S1/2 NE1/4, SE1/4 Section 15, T.20N., R.19E., M.D.B.&M. The point of diversion is described as being within the SW1/4 SE1/4 Section 15, T.20N., R.19E., M.D.B.&M.

¹ Public record in the office of the State Engineer under Applications 44515, 44516, 44517, 45536, 45537 and 45538.

Application 45538¹ was filed on April 15, 1982, by Nell J. Redfield, Trust, to appropriate 1.0 c.f.s. of water from an underground source for quasi-municipal purposes on land within a portion of the SW1/4, W1/2 SE1/4, N1/2 NW1/4 Section 14 and a portion of the S1/2 NE1/4, SE1/4 Section 15, T.20N., R.19E., M.D.B.&M. The point of diversion is described as being within the SW1/4 SW1/4 Section 15, T.20N., R.19E., M.D.B.&M.

II.

Ground Water - Resources Reconnaissance Series Report 57, "A Brief Water Resources Appraisal of the Truckee River Basin, Western Nevada", was prepared cooperatively by the Geological Survey, U.S. Department of Interior, and State of Nevada, Department of Conservation and Natural Resources.

Water Resources Bulletin No. 28, "Evaluation of Hydrogeology and Hydrogeochemistry of Truckee Meadows Area, Washoe County, Nevada", was prepared cooperatively by the Geological Survey, U.S. Department of Interior, and State of Nevada, Department of Conservation and Natural Resources.

III.

Panther Valley is a sub area within the Truckee Meadows Ground Water Basin which is hydrologically interconnected.²

IV.

It is estimated that the potential annual recharge to the ground water basin from precipitation is 27,000 acre-feet. The estimated annual sub-surface inflow of ground water is less than 1200 acre-feet.²

Withdrawals of ground water in excess of the potential annual recharge contribute to adverse conditions³ such as water quality degradation, storage depletion, diminishing yield of wells, increased economic pumping lifts, land subsidence and possible reversal of ground water gradients which could result in significant changes in the recharge-discharge relationship. These conditions have developed in several other ground water basins³ within the State of Nevada where storage depletion and declining water tables have been recorded and documented.

² Water Resources - Reconnaissance Series Report 57.

³ See attached Appendix of References.

V.

Existing certificated and permitted ground water rights in the Truckee Meadows Ground Water Basin for municipal, wildlife, commercial, irrigation and other purposes now exceed estimates of potential natural recharge.

VI.

Applications 44515, 44516, 44517, 45536, 45537 and 45538 were filed to appropriate water from an underground source from the Truckee Meadows Ground Water Basin, Washoe County, Nevada.

By an order dated March 1, 1978, the State Engineer designated and described the Truckee Meadows Ground Water Basin as a ground water basin coming under the provisions of NRS 534.

VII.

An informational report was submitted to the State Engineer by Sharp, Krater and Associates, Inc., agent for the applicant under Applications 45536, 45537 and 45538. This report estimates the perennial yield of the Panther Valley sub area as 128.4 acre-feet per year. The State Engineer does not agree with this quantity based on two assumptions which are contained within this report.

First Assumption

The precipitation, which falls on the Panther Valley drainage basin west of Virginia Street, recharges the basin by an amount of 111.4 acre-feet per year.

This number was obtained by utilizing a method described by Eakins in the State of Nevada Water Resources Bulletin No. 12 where potential recharge is estimated as a percentage of total precipitation occurring within a topographically defined watershed.

The State Engineer disagrees with this potential recharge figure due to the fact that the drainage area west of Virginia Street is underlaid by bedrock to the surface and the drainage pattern of this area enters the very southern tip of the alluvial fill within Panther Valley. Hydraulically this is the lowest point in Panther Valley and is the discharge point. Secondly, "potential recharge" is a term used because, in certain areas such as canyon segments, much of the computed recharge is rejected and therefore does not actually recharge the ground water reservoir.² The method described by Eakins assumed most of the recharge takes place on alluvial fans. Since the drainage area west of Virginia Street is not composed of alluvial material, it appears that most of the potential recharge is rejected and flows downgradient out of the Panther Valley Sub Area.

Second Assumption

The Sharp, Krater and Associates informational report determines that 113.4 acre-feet per year is discharged from the Panther Valley sub area via evapo-transpiration.

This number was obtained by using certain evapo-transpiration rates for different vegetation types existing in the basin. The rates utilized are higher than those used in Water Resources Bulletin No. 42 which is an evaluation of the water resources of Lemmon Valley, Washoe County, Nevada. Lemmon Valley is a neighboring basin to Panther Valley. The higher values of concern involve ditch vegetation and moderately dense big sagebrush and grass.

VIII.

Applications 44515, 44516 and 44517 request an appropriation of 23.5 acre-feet annually.

Applications 45536, 45537 and 45538 request an appropriation of 103.4 acre-feet annually.¹

IX.

The following applications for large additional underground appropriations have been denied within the Truckee Meadows Basin: 29430, 29442, 30923, 30924, 30925, 31503, 31504, 31505, 31823, 31824, 32539, 33124, 33125, 33126, 33289, 33357, 34548, 34549, 34550, 34551, 34552, 34553, 34554, 34555, 34556, 34641, 34642, 34683, 34684, 34717, 34718, 34719, 34723, 34895, 34896, 34943, 34972, 35034, 35035, 35036, 35037, 35071, 35076, 35132, 35205, 35485, 35514, 35635, 36184, 38037, 38038, 39399, 39878, 40988, 40989, 40990, 40991, 41034, 41035, 41036, 42343, 42344, 42345, 42346, 42347, 42348, 42349 and 42619.

CONCLUSIONS

I.

The State Engineer has jurisdiction under the provisions of NRS Chapters 533 and 534.

II.

The State Engineer is prohibited by law⁴ from granting a permit where:

A. there is no unappropriated water at the proposed source,

⁴ NRS 533.370.

- B. the proposed use conflicts with existing rights,
- C. the proposed use threatens to prove detrimental to the public welfare.

III.

Existing water rights for ground water in the Truckee Meadows Ground Water Basin exceed the annual recharge from precipitation and underflow. To grant large additional rights would result in additional consumptive use in this designated basin. The large additional withdrawals and consumption would remove water from the ground water reservoir which:

- A. Would not be replaced resulting in depletion of the ground water reservoir, or
- B. Would be replaced by infiltrating surface water that would otherwise remain in or return to the stream system.

The additional withdrawal and consumption of underground water as applied for would, therefore, conflict with and tend to impair the value of existing rights and threaten to prove detrimental to the public interest and welfare.

RULING

Applications 44515, 44516, 44517, 45536, 45537 and 45538 are denied on the grounds that the appropriation of additional ground water as applied for would conflict with and tend to impair the value of existing rights and threaten to prove detrimental to the public interest and welfare.

Respectfully submitted



Peter G. Morros
State Engineer

PGM/GB/bl

Dated this 16th day of
MAY, 1984.

APPENDIX OF REFERENCES

Land Subsidence in Las Vegas Valley, 1935-63, Information Series No. 5 U.S.G.S.

State of Nevada, Department of Highways, Report on Land Subsidence in Las Vegas Valley.

Evaluation of the Water Resources of Lemmon Valley with Emphasis on Effects of Ground-Water Development to 1971, J.R. Harrill, Water Resources Bulletin No. 42, United States Geological Survey and State of Nevada, State Engineer's Office, Division of Water Resources, Department of Conservation and Natural Resources, 1972.

Hydrologic Response to Irrigation Pumping in Diamond Valley, Eureka and Elko Counties, Nevada, 1950-65, J.R. Harrill, Water Resources Bulletin No. 35, United States Geological Survey and State of Nevada, State Engineer's Office, Division of Water Resources, Department of Conservation and Natural Resources, 1968.

Effects of Irrigation Development on the Water Supply Quinn River Valley area, Nevada and Oregon, 1950-1964, C.J. Huxel, Jr., Water Resource Bulletin No. 34, United States Geological Survey and State of Nevada, State Engineer's Office, Division of Water Resources, Department of Conservation and Natural Resources, 1966.

Hydrologic Response to Irrigation Pumping in Hualapai Flat, Washoe, Pershing and Humboldt Counties, Nevada, 1960-1967, J.R. Harrill, Water Resource Bulletin No. 37, United States Geological Survey and State of Nevada, State Engineer's Office, Division of Water Resources, Department of Conservation and Natural Resources, 1969.

The Effects of Pumping on the Hydrology of Kings River Valley, Humboldt County, Nevada, 1957-1964, G.T. Malmberg and G.F. Worts, Jr., Water Resource Bulletin No. 31, United States Geological Survey and State of Nevada, State Engineer's Office, Division of Water Resources, Department of Conservation and Natural Resources, 1966.

Effects of Ground-Water Development on the Water Regimen of Paradise Valley, Humboldt County, Nevada, 1948-1968, and Hydrologic Reconnaissance of the Tributary Areas, J.R. Harrill and D.O. Moore, Water Resource Bulletin No. 39, United States Geological Survey, 1970.

Ground-Water Storage Depletion in Pahrump Valley, Nevada-California, 1962-75, J.R. Harrill, Open File Report 81-635, United States Geological Survey, 1982, prepared in cooperation with Nevada Division of Water Resources.

Development of a Relation for Steady State Pumping Rate for Eagle Valley Ground-Water Basin, Nevada, F.E. Arteaga, T.J. Durbin, United States Geological Survey, 1978, prepared in cooperation with Nevada Division of Water Resources.

Basic Ground-Water Hydrology, Ralph C. Heath, U.S. Geological Survey Water Supply Paper 2220, 1983.

Subsidence in Las Vegas Valley, John w. Bell, Nevada Bureau of Mines and Geology Bulletin 95.

Subsidence in United States due to Ground-Water Overdraft - A Review, J.F. Poland, Proceedings of the Irrigation and Drainage Division Specialty Conference, April 1973, American Society of Civil Engineers.