

**IN THE OFFICE OF THE STATE ENGINEER**

IN THE MATTER OF APPLICATION 46933)  
FILED TO APPROPRIATE THE PUBLIC)  
WATERS OF AN UNDERGROUND SOURCE IN)  
PAHRUMP VALLEY, NYE COUNTY, NEVADA.)

**RULING**

**GENERAL**

Application 46933 was filed on May 20, 1983, by Don Denkers to appropriate 0.050 c.f.s. of water from an underground source for quasi-municipal and domestic purposes within a portion of the SW1/4 SW1/4 NE1/4 Section 8, T.19S., R.53E., M.D.B.&M. The point of diversion is described as being within the SW1/4 NE1/4 Section 8, T.19S., R.53E., M.D.B.&M.<sup>1</sup>

In 1982, U.S. Geological Survey's Open-File Report 81-635, "Ground Water Storage Depletion in Pahrump Valley, Nevada-California, 1962-1975", by James R. Harrill, was prepared cooperatively by the Nevada Department of Conservation and Natural Resources and the U.S. Department of the Interior, Geological Survey. This report is available in the office of the State Engineer.

Geological Survey Professional Paper 712-C, "Hydrogeologic and Hydrochemical Framework, South-Central Great Basin, Nevada-California, with Special Reference to the Nevada Test Site", was prepared by the United States Department of the Interior, Geological Survey. This report is available in the office of the State Engineer.

Geological Survey Water-Supply Paper 1832, "Hydrology of the Valley-Fill and Carbonate-Rock Reservoirs, Pahrump Valley, Nevada-California", was prepared in cooperation with the Nevada Department of Conservation and Natural Resources and the U.S. Department of the Interior, Geological Survey. This report is available in the office of the State Engineer.

Water Resources Bulletin No. 5, "Geology and Water Resources of Las Vegas, Pahrump, and Indian Springs Valleys, Clark and Nye Counties, Nevada", was prepared by G.B. Maxey and C.H. Jameson. This report is available in the office of the State Engineer.

**FINDINGS OF FACT**

I.

Application 46933 has the point of diversion located on the Pahrump fan within the area designated as the Pahrump Artesian Basin.<sup>2</sup>

-----  
<sup>1</sup> Public record in the office of the State Engineer.

<sup>2</sup> U.S. Geological Survey, Open File Report 81-635. Map indicating "Generalized Geology of Pahrump Valley, Nevada-California".

II.

By Order No. 193, dated January 15, 1948, the State Engineer designated a portion of the Pahrump Valley Ground Water Basin under the provisions of the underground water law (Chapter 178, Nevada Revised Statutes, 1939). Order No. 206 dated, May 4, 1953, required the installation of a suitable measuring device for each and every permit holder in the Pahrump Valley Artesian Basin. Order No. 381, dated June 1, 1970, excluded irrigation from being a preferred use in the Pahrump Artesian Basin.<sup>1</sup>

III.

The perennial yield of a ground water reservoir may be defined as the maximum amount of water of usable chemical quality that can be withdrawn and consumed economically each year for an indefinite period of time. If the perennial yield is continually exceeded, water levels will decline until the ground water reservoir is depleted of water of usable quality or until the pumping lifts become uneconomical to maintain.<sup>3</sup> The perennial yield of Pahrump Valley probably does not exceed 19,000 acre-feet.<sup>4</sup>

IV.

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 ground water gradients which could result in significant changes in the recharge/discharge relationship. These conditions have developed in several other ground water basins within the State of Nevada where storage depletion and declining water tables have been recorded and documented and provide substantial evidence of the adverse effect of these conditions.<sup>5</sup>

V.

Overdraft may be defined as the amount by which the net pumping draft exceeds the perennial yield. A substantial overdraft exists on the ground water reservoir. Overdraft on the system in 1982 was about 4,482 acre-feet and, under these conditions, no new equilibrium is possible and water levels will continue to decline as long as this high level of pumping is sustained.<sup>6</sup> During the period from February 1962 to February 1975, pumping in Pahrump Valley has resulted in a depletion of approximately 219,000 acre-feet of water from storage.<sup>7</sup>

-----  
<sup>3</sup> U.S. Geological Survey Water Supply Paper 1832, p. 39, "Hydrology of the Valley-Fill and Carbonate-Rock Reservoirs, Pahrump Valley, Nevada-California".

<sup>4</sup> U.S. Geological Survey, Open File Report 81-635, p. 71. The State Engineer has determined that the perennial yield of the Basin is more on the order of 12,000 acre-feet annually based on an outflow to the Amargosa-Ash Meadows area of some 7,000 acre-feet.

<sup>5</sup> See attached Appendix of References.

<sup>6</sup> U.S. Geological Survey, Open File Report 81-635, p. 30.

<sup>7</sup> U.S. Geological Survey, Open File Report 81-635, p. 1.

VI.

The greatest declines of ground water levels in Pahrump Valley have occurred along the base of the Pahrump and Manse fans where maximum declines of about 100 feet were observed between predevelopment in the basin and February 1976 levels.<sup>8</sup>

Water levels within wells measured upon the Pahrump fan have continued to show a decline from 1976 to 1984.<sup>9</sup>

VII.

Permits and certificates have been issued in Pahrump Valley that could be used to withdraw over 70,000 acre-feet of ground water per year.<sup>10</sup>

VIII.

Seven previous applications for appropriation of the underground waters with points of diversion located upon the Pahrump fan have been denied. The manner of use for five applications denied was for quasi-municipal purposes and the manner of use for two applications denied was for commercial purposes.<sup>11</sup>

CONCLUSIONS

I.

The State Engineer has jurisdiction of the parties and the subject matter of this action.<sup>12</sup>

II.

The State Engineer is prohibited by law from granting a permit under an application to appropriate the public waters where:<sup>13</sup>

- 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 welfare.

-----  
<sup>8</sup> U.S. Geological Survey, Open File Report 81-635, p. 30.

<sup>9</sup> Public record in the office of the State Engineer.

<sup>10</sup> Public record in the office of the State Engineer.

<sup>11</sup> State Engineers Ruling Nos. 1854, 1897, 1918, 1919 and 2836.

<sup>12</sup> NRS 533.025 and NRS 533.030, subsection 1.

<sup>13</sup> NRS 533.370, subsection 4.

III.

An existing overdraft of the ground water exists on the Pahrump fan. Application 46933 requests to appropriate additional ground water on the Pahrump fan. If approved, Application 46933 could increase the overdraft of the ground water resource on the Pahrump fan contributing to already declining water tables and would thereby conflict with existing rights.

RULING

Application 46933 is herewith denied on the grounds that the granting thereof would increase the potential pumpage draft on the Pahrump fan, thus causing an increase in the overdraft and thereby adversely affecting existing water rights.

Respectfully submitted,

  
PETER G. MORROS  
State Engineer

PGM/HR/bl

Dated this 25th day of  
July, 1985.

## 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.
- Methods of Determining Permeability, Transmissibility and Drawdown, U.S. Geological Survey Water Supply Paper 1536-1, R.H. Brown, J.G. Ferris, C.E. Jacob, D.B. Knowles, R.R. Meyer, H.E. Skibitzke and C.F. Theis, 1963.
- 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.