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FILED
JUN 08 1994
CLERK, U.S. DISTRICT COURT
DISTRICT OF NEVADA
BY .... DEPUTY

IN THE UNITED STATES DISTRICT COURT

FOR THE DISTRICT OF NEVADA

UNITED STATES OF AMERICA, Plaintiff, WALKER RIVER PAIUTE TRIBE, Plaintiff-Intervenor, vs. WALKER RIVER IRRIGATION DISTRICT, a corporation, et al., Defendants	In Equity C-125 Subfile C-125-B
WALKER RIVER IRRIGATION DISTRICT, Petitioner, STATE OF NEVADA, Petitioner-Intervenor, vs. CALIFORNIA STATE WATER RESOURCES CONTROL BOARD, et al. Respondents.	**UNITED STATES OF AMERICA'S REPLY MEMORANDUM TO ITS MOTION FOR INSTRUCTIONS AND ORDER** **ORAL ARGUMENT REQUESTED**
WALKER RIVER PAIUTE TRIBE AND UNITED STATES OF AMERICA, Cross-Claimants, vs. WALKER RIVER IRRIGATION DISTRICT, et al. Cross-Defendants.	

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In connection with our Motion for Instructions and Order (on whether groundwater users are to be joined as parties in these proceedings), the United States of America replies to the responses made by the Walker River Paiute Tribe, the State of Nevada and the Walker River Irrigation District as follows:

The Tribe urges the Court to join groundwater users in these proceedings. Upon reflection, the United States agrees with the Tribe's position on this point. In its response brief the Tribe points out that both Nevada and the Walker River Irrigation District have previously argued to the Court that the waters of the Walker River and its tributaries "form a single res". They further argued that the "subject matter of the Tribe's and the United States' claims involve how this single res is to be divided among all water right claimants and thus all water right claimants clearly have an interest in its subject matter." See, *State of Nevada's and Walker River Irrigation District's Reply Points and Authorities in Support of Motion to Dismiss Counterclaims; To Require Joinder of Parties; And to Require Service of Process in Accordance with Rule 4 of the Federal Rules of Civil Procedure*, at 12 (Oct. 5, 1992).

In our *Memorandum of Points and Authorities in Support of Motion for Instructions and Order* we noted that there are several hundred groundwater users within the Walker River Basin, and that it appears the groundwater, at least to a large extent, is hydrologically connected to the surface water of the Walker River and its tributaries. Neither Nevada nor the Walker River

Irrigation District in their response briefs takes issue with these observations. Instead, Nevada maintains that the Walker River Decree only involves the users of surface waters and that subsequent proceedings in this case also involve only the users of surface water of the Walker River and its tributaries. Nevada also points out that "even in situations in which groundwater rights provide a supplemental source to surface water rights, the State Engineer administers the groundwater sources independently of the surface water source." *State of Nevada's Response to Motion for Instructions and Order*, at 2 (May 24, 1994).

The Walker River Irrigation District asserts that the Counterclaims of the Tribe and the United States "relate only to surface water", and further asserts that the Court should not direct the joinder of the groundwater users within the Walker River Basin unless and until the United States and the Tribe "amend their Counterclaims" to clearly allege that their claimed rights to additional water from the Walker River are intended to impact users of groundwater. *Walker River Irrigation District's Points and Authorities in Response to United States' Motion For Instructions and Order*, at 2 (May 24, 1994).

As we noted in our opening brief, it does not appear that groundwater users were included, or intended to be included, in the original proceedings commenced in 1924. Since the original proceedings, however, groundwater use in the Walker River Basin has increased dramatically. The use of groundwater in Nevada alone in the Walker River Basin is extensive. In a preliminary report by the Nevada Department of Conservation and Natural Resources, Division of Water Planning, June, 1993, the following groundwater uses are shown:

Area	Permitted Withdrawals, acre-feet		
	Irrigation	Other	Total
Antelope Valley	5,980	1,437	7,417
Smith Valley	57,109	1,979	59,088
Mason Valley	119,776	29,399	149,175
East Walker Area	8,266	742	9,008
TOTAL	191,131	33,557	224,688

See Attachment (Exhibit 1)

With a groundwater use of this magnitude, 224,688 acre feet per year, it is difficult to comprehend how such uses can be treated separately and independently, as urged by Nevada. Conflicting claims to the water source by surface and groundwater users ultimately would appear to be unavoidable, cf. Cappaert v. United States, 426 U.S. 128 (1976); and lead to a multiplicity of lawsuits.

Moreover, as we noted in our opening brief, the surface water of the Walker River and its tributaries appear to be hydrologically connected to the groundwater. The California Department of Water Resources, in a June, 1992, publication, Walker River Atlas, reports, at p. 43, under the heading "Groundwater Hydrology", the following:

"Surface and groundwater resources are, physically speaking, almost always interconnected to some degree and, in fact, represent two aspects of a single resource." See Attachment (Exhibit 2). In addition, in a December, 1980, report by the United States Geological Survey, Open-File Report 80-427, entitled Water Resources of the Walker River Indian Reservation, West-Central Nevada, the hydrologic connection between groundwater and surface water is noted in several places, e.g., pages 22 and 33. See Attachment (Exhibit 3).

Under these circumstances, where groundwater use in the Walker River Basin appears to be extensive and hydrologically connected to surface waters, it would appear that the "single res", alluded to by Nevada and the Walker River Irrigation District, includes surface and groundwater, and that it would be impossible to determine how to divide this "single res" among all water right claimants who may have an interest in the "res" without joining groundwater users in these proceedings.

While groundwater users were not joined in 1924 when the original proceedings were filed, the increased use of groundwater in the Walker River Basin, since the time of the original proceedings, would appear to require these users to be made parties in order to determine the relative rights, inter se, between all water users.

The Walker River Irrigation District asserts that the Counterclaims filed by the Tribe and the United States relate only to surface water. We do not accept this characterization of the Counterclaims. While it is true that the Counterclaims set forth a claim for water rights to the surface waters of the

Walker River and its tributaries, we further claimed a federal reserved water right to use water on lands restored to the Reservation in 1936. See, paras. 1 and 15, *United States' Counterclaim*. Many of the lands restored to the Reservation in 1936 are not contiguous to the main stem of the Walker River. Although we have not completed our field work and investigations of these lands, if those investigations indicate that groundwater will be necessary to fulfill the purposes of the federal reservation of these lands, then the United States, and presumbly the Tribe, fully intend to assert rights to the groundwater necessary to fulfill the purposes of the Reservation. The Counterclaims on file, we believe, are sufficiently broad under the "notice pleadings" requirements of the Federal Rules of Civil Procedure to encompass a claim to groundwater under the federal-reserved-water-rights doctrine, should further investigation and field studies demonstrate a need for groundwater to fulfill the purposes of the Reservation. Cf. Winters v. United States, 207 U.S. 564 (1908); Cappaert, supra.

CONCLUSION

For the foregoing reasons we believe the Court should order service of process on groundwater users in the Walker River Basin. Because of the importance of the issues involved, the United States requests oral argument.

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DATED this 6th day of June, 1994.

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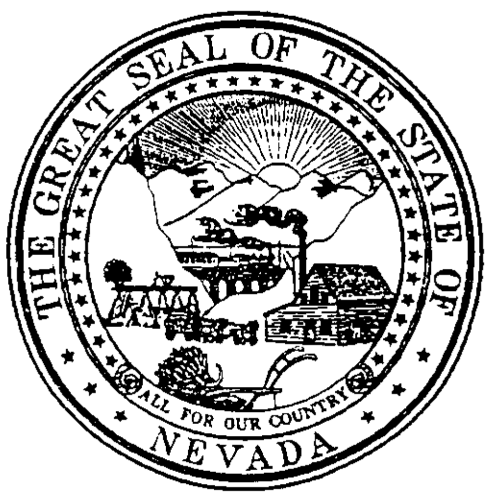
PRELIMINARY

BOB MILLER
GOVERNOR

STATE OF NEVADA

WALKER RIVER BASIN WATER RIGHTS MODEL



JUNE, 1993

DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES
Director:
Peter G. Morros, P.E.

DIVISION OF WATER PLANNING
State Water Planner:
Everett A. Jesse, P.E.

EXHIBIT 1

A Board of U.S. Water Commissioners acts as watermaster, and has the duty of apportioning and distributing the waters of the Walker River system in both states, including water for storage and stored water, in accordance with all provisions of the Decree.

1.3.4 Ground Water Rights. In Nevada, ground water, as with surface water, is considered the property of the State. The Nevada State Engineer has established a duty of water to be applied to a beneficial use when issuing permits and certificates for irrigation purposes. In the Nevada portion of the Walker River Basin, this duty is 4 acre-feet per acre per season. The courts determine the quantity or duty of water to be applied to a beneficial use in the adjudication of water rights.

The most extensive groundwater development in the Walker River Basin has taken place in Smith and Mason Valleys. Portions of the ground water are used to supplement surface supplies during times of low flows. Due to increased development of groundwater, the State Engineer classified 3 of the valleys as designated basins (Smith Valley in 1960, Mason Valley in 1977, and Antelope Valley in 1978). Once designated, the State Engineer has additional authority in the administration of groundwater in the basin.

A summary of groundwater rights in the Nevada portion of the Walker River Basin is given below.

Area	Permitted Withdrawals, acre-feet		
	Irrigation	Other	Total
Antelope Valley	5,980	1,437	7,417
Smith Valley	57,109	1,979	59,088
Mason Valley	119,776	29,399	149,175
East Walker Area	8,266	742	9,008
Total	191,131	33,557	224,688

Source: Hydrographic Basin Summaries, 1992, Divisions of Water Planning and Water Resources.

State of California
The Resources Agency
DEPARTMENT OF WATER RESOURCES

WALKER RIVER ATLAS

June 1992

EXHIBIT 2

Ground Water Hydrology

Surface and ground water resources are, physically speaking, almost always interconnected to some degree and, in fact, represent two aspects of a single resource. For purposes of water rights administration or technical studies, these two aspects are usually treated separately, but it is important to remember that this distinction is a matter of convenience and not an absolute physical difference.

Given this caveat, it can be noted that ground water provides a portion of the basin's water supply. Most municipal water supply comes from ground water. Many private wells serve individual homes in the watershed, both in the alluvial valley-fill deposits thought of as aquifers[1] in the conventional sense, and in the fracture zones in otherwise less pervious rock. Generally, such individual wells are outside the service areas of municipal water purveyors and are low-yield wells sufficient for the needs of a single dwelling.

Ground Water Basins in the Watershed

The chief ground water basins in each state are listed below. These basins are valleys filled with significant amounts of water-bearing sediments. Water contained in the basins may or may not be of usable quality — some of these basins have localized areas where the ground water is too mineralized to be used for most purposes under present economic conditions.

In California	In Nevada
Antelope Valley	Sweetwater Flat
Little Antelope Valley	Antelope Valley
Slinkard Valley	Smith Valley
Bridgeport Valley	Mason Valley
Sweetwater Flat	East Walker Bottomlands
	Walker Lake Valley

There are varying amounts of information available about the ground water resources of these basins — information such as the amount of ground water in storage, thickness of the saturated zone(s), depths to water-bearing materials, rate and direction of ground water flow, etc. The most information is available for areas where ground water use is relatively widespread, such as in Smith and Mason Valleys and in parts of Walker Lake Valley.

Ground water also provides a significant irrigation supply in parts of the watershed, especially in Smith and Mason valleys, where some wells with relatively high yields have been developed. In the past, some sizable extractions of ground water have also been made on the Nevada side of the watershed for mining and ore processing, although these uses are now dwarfed by the agricultural extractions. Agriculture is actually a major contributor to ground water recharge throughout the watershed, in the form of seepage from canal systems and application of water in excess of crop needs. Irrigation water is a particularly important source of recharge in the eastern part of the watershed, where imported surface water supplements the limited recharge available from precipitation alone.

[1] In simple terms, an aquifer is a subsurface soil deposit or rock formation that is permeable enough so that water can be economically withdrawn from it to serve some use. Antelope Valley is a ground water basin (*i.e.*, an area underlain by water-bearing alluvium) where significant ground water development is possible.

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

WATER RESOURCES OF THE WALKER RIVER INDIAN RESERVATION, WEST-CENTRAL NEVADA

By Donald H. Schaefer

Open-File Report 80-427

Prepared in cooperation with the
Economic Development Administration,
U.S. Department of Commerce
(Project Number 07-6-01832)

Carson City, Nevada

December 1980

This technical-assistance study was made by the U.S. Geological Survey under contract with the Economic Development Administration. The statements, findings, conclusions, recommendations, and other data in this report are solely those of the contractor and do not necessarily reflect the views of the Economic Development Administration.

EXHIBIT 3

TABLE 6.--*Estimated average annual evapotranspiration by phreatophytes and discharging playas*

Type	Source of evapotranspiration	Area (acres)[1]	Evapotranspiration: Feet per year[2]	Evapotranspiration: Acre-feet per year	Calculated standard deviation of estimate (acre-feet per year)
			Schurz subarea		
1	Grasses, rabbitbrush, greasewood, and some cottonwood and willow	1,800	2.0	3,600	700
2	Grasses and willows	4,070	1.5	6,100	600
3	Greasewood	10,000	.2	2,000	400
4	Discharging playa	1,500	1.8	2,700	300
			Total (rounded)	14,000	
			Rawhide Flats area		
3	Greasewood	3,000	0.2	600	200
4	Discharging playa	2,300	1.8	4,100	700
			Total	4,700	

[1] Area within reservation boundary as shown on U.S. Geological Survey Walker Lake 1:250,000 quadrangle.

[2] Rates are from Everett and Rush (1967), except those for discharging playas, which were model-generated.

Discharge into Walker River

As was mentioned previously, the river is primarily a source of recharge to the ground-water system. Some reaches of the river, however, do gain water from the ground-water reservoir. No attempt was made to determine the amount of loss to the river, but it is probably minor and was not considered as part of the budget discussed later.

Water Levels

Because the river is hydraulically connected with the ground-water system, water levels in the immediate area of the river show little, if any, decline. Depth to water in wells near the river that was measured for the study by Everett and Rush (1967) averaged less than 40 ft and were found to be generally the same during the winter of 1977-78.

Figure 9 shows the element configuration used for the analysis of the Walker River Indian Reservation ground-water system. The geometry of the ground-water system is specified in the model through the configuration of elements. Water-bearing properties of the prototype are specified in the model by assigning transmissivity values to the elements. The model uses these transmissivity values to compute water levels that mathematically satisfy the ground-water-flow equation for the sources and sinks applied and the boundary conditions imposed.

River-Aquifer Interactions

The most important source of ground-water recharge to the Walker River Indian Reservation ground-water system is percolation from the channel of the Walker River. The river is hydraulically connected with the ground-water system, and exchanges of water occur between the two systems. The rate of exchange depends on the ground-water level adjacent to the river, the permeability of the channel bed, and the stage and width of flow in the channel.

To express mathematically the dependence on these variables, Muskat (1937, p. 350) gave an approximate relation for the seepage discharge from canals and ditches that merge with a shallow water table. By this relation the seepage discharge is approximately linear for small head differentials between the river stage and water table. Concomitantly, in the ground-water model the seepage discharge from or to a channel reach was assumed to be proportional to the head differential between the river stage and ground-water level at the midpoint of the reach and proportional to the flow width of the river. Symbolically, the seepage rate, Q_R, is given by

$$Q_R = C_R (h_R - h) W_R L$$

where C_R is a constant of proportionality, h_R is the river stage, h is the ground-water level, W_R is the flow width, and L is the reach length.

The stage and width of flow were expressed as power functions of the upstream discharge in the reach. The river stage was represented by the relation (Leopold, Wolman, and Miller, 1964, p. 215)

$$h_R = H_R + a_d Q^{b_d}$$

where H_R is the channel-bed altitude, Q is the river discharge, and a_d and b_d are numerical coefficients. The flow width was represented by the relation (Leopold, Wolman, and Miller, 1964, p. 215)

$$W_R = a_w Q^{b_w}$$

where a_w and b_w are numerical coefficients.

CERTIFICATE OF SERVICE

I hereby certify that I have this 7th day of June, 1994, served a true copy of the foregoing **UNITED STATES OF AMERICA'S REPLY MEMORANDUM TO ITS MOTION FOR INSTRUCTION AND ORDER, ORAL ARGUMENT REQUESTED,** by placing same in the U. S. mails, postage prepaid, addressed as follows:

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