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

FILED
AUG 26 1998
STATE ENGINEER'S OFFICE

IN THE MATTER OF APPLICATION NUMBER 64045,
FILED BY Dry Lake Water, LLC.,
ON April 17 1998, TO APPROPRIATE THE
WATERS OF Underground

PROTEST

Comes now U.S. Fish and Wildlife Service
Printed or typed name of protestant
whose post office address is 911 NE 11th Avenue Portland, OR 97232-4181
Street No. or P.O. Box, City, State and Zip Code
whose occupation is agency of the federal government, and protests the granting
of Application Number 64045, filed on April 17, 1998
by Dry Lake Water, LLC. to appropriate the
Printed or typed name of applicant
waters of underground situated in Clark
Underground or name of stream, lake, spring or other source
County, State of Nevada, for the following reasons and on the following grounds, to wit:

See Attachment A

THEREFORE the protestant requests that the application be Denied
(Denied, issued subject to prior rights, etc., as the case may be)
and that an order be entered for such relief as the State Engineer deems just and proper.

Signed Don Weathers
Agent or protestant
DON WEATHERS
Printed or typed name, if agent
Address 911 NE 11th Avenue
Street No. or P.O. Box No.
Portland, OR 97232-4181
City, State and Zip Code No.

Subscribed and sworn to before me this 21st day of August 1998.

OFFICIAL SEAL
KAY KIER-HAGGENJOS
NOTARY PUBLIC-OREGON
COMMISSION NO. 301010
MY COMMISSION EXPIRES MAY 8, 2001

Kay Kier-Haggenjos
Notary Public
State of Oregon
County of Multnomah

$10 FILING FEE MUST ACCOMPANY PROTEST. PROTEST MUST BE FILED IN DUPLICATE. ALL COPIES MUST CONTAIN ORIGINAL SIGNATURE.

ADDITIONAL INFORMATION TO SUPPORT THE PROTEST OF THE U.S. FISH AND WILDLIFE SERVICE IN THE MATTER OF APPLICATION 64038, 64039, 64040, AND 64045

Attachment A

Nevada Water Right Application Nos. 64038, 64039, 64040 and 64045 were filed by Dry Lake Water, LLC on April 17, 1998 requesting a combined diversion rate of 40 cubic feet per second for quasi-municipal purposes from four groundwater wells located in Coyote Spring Valley (Basin 210), Hidden Valley (Basin 217), and Garnet Valley (Basin 216), Clark County, Nevada. The proposed points of diversion are located in the White River Flow System, in an area that has had an unprecedented number of water right applications recently. The U.S. Fish and Wildlife Service (Service) requests that Application Nos. 64038, 64039, 64040, and 64045 be denied because:

- Granting of these applications may cause injury to Service water rights on the Moapa Valley and Pahranagat National Wildlife Refuges and for other senior water right holders in the Muddy River Springs area.
- Water may not be available to appropriate in the manner described, especially considering the cumulative effect of all pending applications in this area.
- Granting of these applications may damage habitat for species that are endangered or threatened under the Endangered Species Act or other species of concern and, therefore, may not be in the public interest.

I. The Service manages the National Wildlife Refuge System, a network of lands administered for the purpose of conservation, protection, and restoration of fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans, as defined in the National Wildlife Refuge System Improvement Act of 1997. Included in the refuge system are the Moapa Valley National Wildlife Refuge (NWR) and the Pahranagat NWR. Moapa Valley NWR is a 60 acre area of springs and wetlands located in the Muddy River Springs area of the Upper Moapa Valley (Basin 218). This refuge was established in 1979 under the authority of the Endangered Species Act. The purpose of the Moapa Valley NWR is to provide protection for the endangered Moapa Dace (*Moapa coriacea*), a minnow that is endemic to the headwaters of the Muddy River system. The refuge is the most favorable area for Dace reproduction in the Muddy River ecosystem. In addition to Moapa Dace, other species of concern are found on or near the refuge, all of which depend on the water resources of the area.

Pahranagat NWR is a 5,000 acre area of spring-fed wetlands, meadows, lakes and upland desert habitat. The refuge is located at the south end of the Pahranagat Valley (Basin 209). It was established in 1964 to provide a stopping point for waterfowl and other migratory birds and is important for a variety of waterfowl, shorebirds, songbirds, and raptors. At least two species listed under the Endangered Species Act are found on the refuge: the endangered southwest willow flycatcher (*Empidonax traillii extimis*) and the threatened bald eagle (*Haliaeetus leucocephalus*).

II. Both refuges are located in the White River Groundwater Flow System, a regional groundwater flow system in southern Nevada which extends from southern Jakes Valley in the north to Upper Moapa Valley in the south (Eakin, 1966; Prudic et al., 1993). The flow system consists of numerous local basin fill aquifers underlain by a large regional carbonate aquifer which transmits water across topographic divides. Water from the regional carbonate aquifer flows generally south and southeast through the system and surfaces at large regional springs in the Pahranagat Valley and the Upper Moapa Valley. The terminus of the flow system is the Muddy River Springs area in the Upper Moapa Valley, where approximately 36,000 acre-ft discharge annually. Moapa Valley NWR is part of the Muddy River Springs area. Thomas et al. (1996) postulated that 28,000 acre-ft (78%) of the water emanating from Muddy River Springs was from either the Sheep Range or the White River Flow System, with the remainder coming from Lower Meadow Valley Wash. The proposed well development is in the White River Flow System, west and upgradient of the refuge.

The Pahranagat Valley is an intermediate discharge area for the flow system. Three large springs in the valley (Hiko Spring, Crystal Spring, and Ash Spring) discharge about 25,000 acre-ft/yr from the regional carbonate aquifer (Eakin, 1966). The source of this water is the White River Flow System. A considerable amount of water underflows the valley through the carbonate aquifer to flow either south through Coyote Spring Valley to the Muddy River Springs area or west to the Ash Meadows area. The estimates of flow from the Pahranagat Valley to the Muddy River Springs area vary from 14,000 acre-ft/yr to 19,000 acre-ft/yr (Kirk and Campana, 1990; Thomas et al., 1996). The flow from Pahranagat Valley to Ash Meadows is estimated to be 4,000 to 7,000 acre-ft/yr (Kirk and Campana, 1990; Thomas et al., 1996; Burby, 1997). The proposed well development is south and downgradient of the Pahranagat NWR.

III. The Service has secured water rights to protect the water resources of both refuges. On the Moapa Valley NWR, the Service owns one water right for 3.6 cfs of spring discharge, the average collective spring discharge from 16 springs and seeps on the refuge. The water right is for non-consumptive use and there is no annual duty defined on the permit. The source of the springs is the regional carbonate aquifer, as evidenced by the warm temperature, the water chemistry, and the constant flow rates (Eakin, 1966). In addition to this water right, all water emanating from springs and seeps on the refuge makes its

way into the Muddy River and is appropriated by downstream users. Therefore, any effect to spring discharge would impact downstream water rights in the Muddy River as well as water rights on the refuge.

On the Pahranagat NWR, the Service has certificated water rights for 5,044 acre-ft of surface water and 1,686 acre-ft of groundwater. About 4,250 acre-ft of the surface water rights are from two of the three regional springs in the valley, Ash Spring and Crystal Spring. In addition, the Service has three pending applications for small springs on the refuge and two pending applications for additional flow from Ash Spring and Crystal Spring. The annual duty is undefined on all of the pending applications.

IV. One federally listed endangered fish species, the Moapa Dace (*Moapa coriacea*), and numerous species of concern to the Service are present in the Muddy River Ecosystem including the Virgin River chub (*Gila seminuda*), the Moapa speckled dace (*Rhinichthys osculus moapae*), the Moapa White River springfish (*Crenichthys baileyi moapae*), the Moapa pebblesnail (*Pyrgulopsis avernalis*), the Grated tryonia (*Tryonia clathrata*), the Moapa Warm Spring riffle beetle (*Stenelmis moapa*), the Amargosa naucorid (*Pelocoris shoshone shoshone*), and the Moapa water strider (*Rhagovelia becki*). All of these species are linked to the water resources of the ecosystem. Reducing spring discharge or flow in the Muddy River could adversely impact these species and would be detrimental to the public interest.

Three federally listed endangered fish species are present in the Pahranagat Valley: the Pahranagat roundtail chub (*Gila robusta jordani*), the Hiko White River springfish (*Crenichthys baileyi grandis*), and the White River springfish (*Crenichthys baileyi grandis*). Pahranagat roundtail chub occur only in 2.2 miles of Pahranagat Creek and in 1.6 miles of the main irrigation ditch in the Valley. White River springfish are restricted to Ash Spring, and fewer than 125 Hiko White River springfish are found only in Crystal Spring. Reducing spring discharge or water levels in the Pahranagat Valley could adversely impact these species and would be detrimental to the public interest.

IV. Coyote Spring Valley physically and hydrologically connects the Pahranagat Valley to the north, the Sheep Range to the west, and the Muddy River Springs area to the east (Eakin, 1966; Schmidt and Dixon, 1995; Thomas et al., 1996). Regional flow reaching the Muddy River Springs area from the Sheep Range or the Pahranagat Valley passes through Coyote Spring Valley, the site of the one of the proposed wells (No. 64039). Capture of any or all of the outflow from Coyote Spring Valley may decrease spring discharge in the Muddy River Springs and may also affect spring discharge and water levels at Pahranagat NWR and elsewhere in the flow system.

Hidden Valley and Garnet Valley are south of Coyote Spring Valley at the extreme southern end of the White River Flow System (Burby, 1997). There is very little groundwater flow in this area because almost all of the flow in the White River Flow

System is discharged north of these valleys at the Muddy River Springs area. Groundwater wells in these valleys would most likely penetrate the regional carbonate aquifer because the basin-fill deposits are thin or not present at all. The valleys are hydrologically connected to the rest of the flow system and large withdrawals in these areas may intercept and divert some of the discharge at the Muddy River Springs.

V. The area of the proposed groundwater withdrawals (Basins 210, 216, and 217) has seen an unprecedented number of water development proposals recently. Including these applications by Dry Lake Water, there have been new water right applications to appropriate at least 200,000 acre-feet of groundwater annually from Coyote Spring, Hidden, and Garnet Valleys since March 1997. The volume of water sought by Dry Lake Water exceeds even the highest estimates of available water in these valleys. The total volume of all pending water right applications in this area (> 200,00 acre-ft) is extraordinary and far surpasses any level of pumping that is reasonable or sustainable. The cumulative effect from this much pumping would almost certainly be devastating to existing water rights and water resources in the flow system, including those of the Moapa Valley and Pahranagat NWRs. The Service is concerned that this scale of groundwater appropriation in this system would be highly detrimental to existing water rights and resources and the public interest.

Most of the pending water right applications in Basin 210, 216, and 217 are senior to the applications by Dry Lake Water. The Service has protested these earlier applications and has expressed concern with the level of appropriations being sought in this area. The Service asks that the applications by Dry Lake Water be denied or postponed until such time as the issues involved in the more senior water right applications in this area are resolved.

Literature Cited

Burby, T. J., 1997. Hydrogeology and potential for ground-water development, carbonate-rock aquifers, Southern Nevada and Southeastern California. U.S. Geological Survey Water Resources Investigations Report 95-4168.

Eakin, T. E., 1966. A regional interbasin groundwater system in the White River Area, Southeastern Nevada. Water Resources Research, v. 2, no. 2, p. 251-271.

Kirk, S. T. and Campana, M. E., 1990. A deuterium calibrated groundwater flow model of a regional carbonate-alluvial system. Journal of Hydrology, v. 119, p. 357-388.

Schmidt, D. L. and Dixon, G. L., 1995. Geology and Aquifer System of the Coyote Spring Valley Area, Southeastern Nevada. U.S. Geological Survey Open File Report 95-579.

Thomas, J. M., Welch, A. H., and Dettinger, M. D., 1996. Geochemistry and isotope hydrology of representative aquifers in the Great Basin region of Nevada, Utah, and adjacent states. U.S. Geological Survey Professional Paper 1409-C.