

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

IN THE MATTER OF APPLICATION NUMBER 54056
FILED BY LAS VEGAS VALLEY WATER DISTRICT PROTEST
ON OCTOBER 17, 1989, TO APPROPRIATE THE
WATERS OF UNDERGROUND

Comes now Owen R. Williams, on behalf of the United States Department of the Interior, National Park Service, whose post office address is 301 S. Howes Street, Room 353, Fort Collins, Colorado, 80521, whose occupation is Chief, Water Rights Branch, Water Resources Division, National Park Service, and protests the granting of Application Number 54056, filed on October 17, 1989, by Las Vegas Valley Water District to appropriate the water of Underground Basin 210, COYOTE SPRINGS VALLEY, situated in CLARK County, State of Nevada, for the following reasons and on the following grounds, to wit:

See Exhibits A through D attached.

THEREFORE the protestant requests that the application be denied (See Exhibit E, attached).

Signed *Owen R. Williams*
Agent or protestant

Owen R. Williams
Printed or typed name, if agent

Address 301 South Howes St., Room 353
Street No. or P.O. Box No.

Fort Collins, CO 80521
City, State and Zip Code No.

Subscribed and sworn to before me this 5th day of July, 1990.

Joseph A. [Signature]
Notary Public

State of Colorado

County of Larimer

My Commission expires 3/10/91.

OK OB

IN THE MATTER OF APPLICATION 54056

EXHIBIT A

Protest by Owen R. Williams, on behalf of
the United States Department of the Interior,
National Park Service

- I. The mission of the National Park Service (NPS) may be paraphrased from 16 U.S.C. 1, as conserving scenery, natural and historic objects, and wildlife, and providing for enjoyment of the same in such a manner and by such means as will leave them unimpaired for the enjoyment of future generations. The public interest will not be served if water and water-related resources in the nationally important Death Valley National Monument (Death Valley NM) and Lake Mead National Recreation Area (Lake Mead NRA) are diminished or impaired as a result of the appropriation proposed by this application.
- II. Death Valley NM was created by Presidential Proclamation in 1933 to preserve unusual features of scenic, scientific, and educational interest. The proclamation gives warning to unauthorized persons not to appropriate, injure, destroy, or remove any feature of this monument. Springs and water-related resources are important features of the Monument. The NPS is entitled to Federal reserved water rights for reserved lands within Death Valley NM. The priority dates for these reserved rights are the dates when the lands were reserved and are senior to the appropriation sought by this application. These rights have not been judicially quantified.
 - A. In the eastern part of the Monument, Grapevine, Keane Wonder, Nevares, Texas, Travertine and Saratoga Springs provide water for park facilities, domestic use, public campgrounds, resorts, vegetation, wildlife, public enjoyment, scenic value and other related needs. Nevares, Texas, and Travertine Springs collectively discharge about 2,000 gallons per minute (about 3,200 acre-feet per year) and are critical for domestic and commercial use.

Public visitation to Death Valley NM for the past 5 years is approximately as follows:

1985	-	601,000
1986	-	611,000
1987	-	693,000
1988	-	721,000
1989	-	692,000

The Monument supplies water for visitors from the above-named springs. For example, during 1988, water from these springs supported approximately 275,000 overnight campers in Death Valley NM campgrounds, 98,000 people at resorts within the Monument,

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200 NPS employees and families (at the height of the season), 410 resort employees, a population of 50 Native Americans, and 32 other residents.

- B. The springs mentioned above, in addition to more than 350 others in Death Valley NM, support vegetation and critical wildlife habitat. For example, two species of snails, which are candidates for threatened or endangered species listing, are found within Death Valley NM and live at certain springs. The Badwater snail (Assiminea infima) is found at Travertine and Nevares Springs and the Amargosa tryonia snail (Tryonia variegata) occurs at Saratoga Springs. Six other species of snails are endemic to Death Valley springs and are not found outside the Monument.

Desert bighorn sheep are also dependent upon the springs in Death Valley NM. Approximately 25 herds concentrate around Monument springs during the summer, rarely straying more than two miles away.

If approved, the appropriation and diversion proposed by this application will eventually reduce or eliminate the flows from springs at Death Valley NM which are discharge areas for regional ground-water flow systems. The NPS's senior appropriative and Federal reserved water rights, water resources, and water-related resource attributes will thus be impaired. Such impacts are not in the public interest.

- III. A unique and endangered species of pupfish exists in a pool at Devil's Hole, a detached unit of Death Valley NM in Nevada. Ground-water withdrawals near the unit previously caused a decline in the water level of the pool, exposing a rock shelf vital to the spawning of the pupfish (Dudley and Larson, 1976). Subsequently, the U.S. Supreme Court (later refined by the U.S. District Court) determined that a Federal reserved water right exists at Devil's Hole for the purpose of maintaining a water level sufficient to inundate the shelf on which the pupfish spawns (Cappaert v. United States, 1976). In addition, the Endangered Species Act and its amendments impose obligations on Federal agencies to conserve endangered species such as the Devil's Hole pupfish. The appropriation and diversion proposed by this application will, eventually, cause the water level at Devil's Hole to fall, thereby impairing the senior Federal reserved water right for Devil's Hole.
- IV. Lake Mead NRA was established in 1964 to be administered for "...general purposes of public recreation, benefit, and use, and in a manner that

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will preserve, develop, and enhance, so far as practicable, the recreation potential, and in a manner that will preserve the scenic, historic, scientific, and other important features of the area...". Springs and water-related resource attributes are important features of the National Recreation Area. The NPS is entitled to Federal reserved water rights for reserved lands within Lake Mead NRA. The priority dates for these reserved rights are the dates when the lands were reserved and are senior to the appropriation sought by the Las Vegas Valley Water District (LVVWD). These rights have not been judicially quantified.

- A. Numerous springs provide water for vegetation and wildlife habitat and create an environment that many visitors use and enjoy. Most springs are not fed by water from Lake Mead, and will be affected by up-gradient diversions.

Springs include Blue Point, Rogers, Corral, Kelsey's and Tassi Springs, and other smaller, unnamed springs. Visitation to Blue Point and Rogers Springs has been estimated at 5,000 visitors/year for each spring.

Desert bighorn sheep are also dependent upon the springs in Lake Mead NRA. A herd of approximately 150 use springs in the northern part of the National Recreation Area, while a herd of nearly 400 sheep use springs in the southern part.

- B. Thermal springs are found within Lake Mead NRA. Two of the larger and more frequented--Boy Scout and Nevada Hot Springs--have water temperatures of about 127°F throughout the year. Several smaller thermal springs of recreational and scientific interest also exist within Lake Mead NRA boundaries.
- C. The Muddy River, which originates from large discharge springs located northeast of Moapa, Nevada, flows into Lake Mead NRA at the north end of the lake's Overton Arm. The State of Nevada, Department of Wildlife, is leasing a portion of Lake Mead NRA adjoining the Muddy River for the purposes of the Overton Wildlife Management Area. This area supports a variety of waterfowl and vegetation.

If approved, the appropriation and diversion proposed by this application will eventually reduce or eliminate the flows of springs (including thermal springs) and the Muddy River within Lake Mead NRA

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which are discharge areas for regional ground-water flow systems. The NPS's senior water rights, water resources, and water-related resource attributes would thus be impaired. Such impacts are not in the public interest.

- V. Lake Mead NRA has Nevada State appropriative water rights for the following, which will be impaired by the appropriation and diversion proposed by this application.

<u>Name</u>	<u>Point of Diversion</u>	<u>Certificate Number</u>
Kelsey's Springs	SW1/4 NW1/4, Sec 20, T16S, R68E MDBM	296
Rogers Spring	SE1/4 SE1/4, Sec 12, T18S, R67E MDBM	4476
Muddy Creek (River)	NW1/4 SE1/4, Sec 19, T16S, R68E MDBM	5126

- VI. The diversion proposed by this application is located in the carbonate-rock province of Nevada. The carbonate-rock province is typified by complex interbasin regional flow systems that include both basin-fill and carbonate-rock aquifers (Harrill, et al., 1988, Sheet 1). Ground water flows along complex pathways through basin-fill aquifers, carbonate-rock aquifers, or both, from one basin to another. Ground-water flow system boundaries, and thus interbasin ground-water flows, are poorly defined for most of the carbonate-rock province (Harrill, et al., 1988, Sheet 1). The proposed diversion is expected to reduce interbasin flows and modify the direction of ground-water movement in adjoining hydraulically connected basins, reduce or eliminate spring and stream flows, and cause land subsidence and fissuring.

A central corridor of the carbonate-rock aquifers in southern Nevada (Dettinger, 1989) occurs within the carbonate-rock province. The corridor consists of a north-south "block" of thick, laterally continuous carbonate rocks and probably contains the principal conduits for regional ground-water flow from east-central Nevada into southern Nevada, with flow ultimately discharging through springs at Ash Meadows (including Devil's Hole), Death Valley, and Lake Mead (Dettinger, 1989, p. 13). Parts of east-central Nevada are a recharge area for the central corridor of the carbonate-rock and basin-fill aquifers in southern Nevada (Dettinger, 1989; Mifflin, 1988).

The major ground-water flow systems of southern and east-central Nevada described by Harrill, et al. (1988, Sheets 1 and 2) include Death Valley, Penoyer Valley, Railroad Valley, Newark Valley, and Colorado.

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These ground-water flow systems are within or tributary to the central corridor. The Death Valley flow system of Harrill, et al. (1988), includes the Ash Meadows flow system described by Winograd and Thordarson (1975). The Ash Meadows flow system discharges from springs at Ash Meadows and Death Valley NM and maintains the water level of Devil's Hole. The Colorado flow system of Harrill, et al. (1988) includes the White River flow system described by Eakin (1966). Winograd and Thordarson (1975) indicate that ground water flows from the White River flow system to the Ash Meadows flow system, ultimately discharging from springs at Ash Meadows and Death Valley, and maintaining water levels at Devil's Hole. Harrill, et al. (1988, Sheet 2) also show areas where ground water is transmitted from one flow system to another. Essington (1990) discusses several of the major flow systems mentioned above and their relationships to the water resources of Death Valley NM. The White River flow system discharges from the Muddy River springs and springs at Lake Mead NRA (See Eakin, 1966; Harrill, et al., 1988, Sheet 2; Dettinger, 1989, Figure 6).

The diversion proposed by this application is located within a basin which may be part of the central corridor, the recharge area for the central corridor and/or other parts of regional ground-water flow systems which discharge in the Ash Meadows, Death Valley and Lake Mead areas (Harrill, et al., 1988, Sheet 1, Figure 5; and Sheet 2). Thus, the diversion is expected to reduce the flow from springs at Death Valley NM and Lake Mead NRA and/or cause the water level at Devil's Hole to decline.

Some zones within the central corridor are highly transmissive, and act as large-scale drains which ultimately transmit much of the flow that discharges from large springs such as those at Ash Meadows, Death Valley NM and Lake Mead NRA. It has been hypothesized (Dettinger, 1989, p. 16) that the highly transmissive zones may stay highly transmissive only if large volumes of water continue to flow through them. Otherwise, openings in the rocks gradually fill with minerals and the rocks resolidify. The appropriation and diversion proposed by this application is expected to reduce the volume and velocity of ground water flowing through the drains which could begin the process of closing connected fractures and solution cavities, substantially impairing the capacity of the aquifer to transmit water.

Available scientific literature is not adequate to reasonably assure that the ground-water appropriation and diversion proposed by this application will not impact the senior water rights, water resources and

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water-related resources of Death Valley NM and Lake Mead NRA, and thereby impair the senior NPS water rights. Scientific literature indicates that Devil's Hole, and springs within Death Valley NM and Lake Mead NRA are hydraulically connected to regional ground-water flow systems and can be affected by an up-gradient ground-water diversion.

- VII. Besides this application, the LVVWD has submitted 4 additional applications to appropriate ground water in Basin 210, COYOTE SPRINGS VALLEY (Exhibit B).
- A. Diversions proposed by these applications, if developed, would be about 27530 acre-feet per year (Exhibit C and D).
 - B. As of December 1988, committed diversions of 0 acre-feet per year and an estimated perennial yield of 18000 acre-feet per year were reported for Basin 210, COYOTE SPRINGS VALLEY (Nevada Department of Conservation and Natural Resources, 1988; Exhibit C).
 - C. The sum of the committed diversions and the diversions proposed by the LVVWD applications in this basin exceeds the estimated recharge of 2100 acre feet per year by 25430 acre-feet per year (Exhibit D) and the estimated perennial yield by 9530 acre-feet per year (Exhibit C).

A substantial overdraft of ground-water resources is expected to occur. The overdraft will cause ground-water levels to decline, alter the directions of ground-water flow, dry up playas, reduce or eliminate spring flows, and cause land subsidence and fissuring. The cumulative effects of these diversions in this basin are expected to cause impacts at Death Valley NM and Lake Mead NRA more quickly and/or to a greater degree than diversions under this application alone and thereby impair the senior NPS water rights. The diversions proposed by LVVWD in this basin exceed the water available for appropriation. The impacts described above are not in the public interest.

- VIII. It should be noted also, that the LVVWD has submitted a total of 102 applications which propose the appropriation of 824 cubic feet per second (596690 acre-feet per year) of ground water from the central corridor of the carbonate-rock aquifer or a basin hydraulically connected to the central corridor (Exhibit B). The diversions proposed by LVVWD in these basins exceed the water available for appropriation. The cumulative effects of these diversions is expected to cause the

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impacts described in VII. above to appear more quickly and/or to a greater degree than diversions within the subject ground-water basin, or under this application alone. This conclusion is supported by the following.

- A. Harrill, et al. (1988, sheet 2) have estimated an annual ground-water recharge of 221400 acre-feet for basins with proposed diversions as listed in Exhibit B (Exhibit D).
 - B. The cumulative diversion proposed by these applications, when developed, will be approximately 596960 acre-feet per year (Exhibit D). This diversion rate exceeds the estimated cumulative recharge rate in the basins by 375560 acre-feet per year. A substantial overdraft of ground-water resources will occur as a result.
 - C. As of December 1988, the latest available estimate of committed diversions and perennial yield were 203884 and 343750 acre-feet per year, respectively, for these basins (Nevada Department of Conservation and Natural Resources, 1988; Exhibit C).
 - D. The sum of the committed diversions and the diversion rate proposed by these applications exceeds the estimated perennial yield by 457094 acre-feet per year (Exhibit C) and the estimated recharge rate in the basins by 579444 acre-feet per year (Exhibit D).
- IX. In this application, the points of discharge for return flow (treated effluent) have not been specified. The possibility exists that the return flow may be discharged into a hydrologic basin other than the basin of origin. This being the case, depletions to springs in Death Valley NM and Lake Mead NRA and a drop in the water level at Devil's Hole would occur more quickly and in greater magnitude than if treated effluent were returned to the basin of origin.
- X. According to NRS 533.060, "Rights to the use of water shall be limited and restricted to so much thereof as may be necessary, when reasonably and economically used for irrigation and other beneficial purposes..." Further, NRS 533.070 states that "The quantity of water from either a surface or underground source which may hereafter be appropriated in this state shall be limited to such water as shall reasonably be required for the beneficial use to be served." Implicit in these statements is a prohibition against waste and unreasonable use of water. It is unclear whether the quantity of water contemplated by this

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application, individually and in combination with applications 53947 through 54036, 54038 through 54066, 54068 through 54076, 54105, and 54106 by the LVVWD, is necessary and is an amount reasonably required for municipal and domestic purposes. Past open and notorious practices would indicate otherwise.

- XI. The application does not clearly indicate the place of use, the description of proposed works, estimated cost of works, number and type of units to be served or annual consumptive use. Nor, as described in X. above, is it clear that the appropriation sought is necessary and is in an amount reasonably required for the beneficial uses applied for. Therefore, the application is defective and should be summarily rejected by the State Engineer.
- XII. In sum, the NPS protests the granting of Application Number 54056, submitted by the LVVWD to appropriate and divert ground water, on the following grounds.
- A. The public interest will not be served if water and water-related resources in the nationally important Death Valley NM including Devil's Hole, and Lake Mead NRA, are diminished or impaired as a result of the diversion proposed by this application.
 - B. The diversion proposed by this application will reduce or eliminate the flows of springs in Death Valley NM which are discharge areas for regional ground-water flow systems, thereby impairing the senior NPS water rights.
 - C. The diversion proposed by this application will cause the water level at Devil's Hole to fall, thereby impairing the senior Federal reserved water right for Devil's Hole.
 - D. If approved, the appropriation and diversion proposed by this application will eventually reduce or eliminate the flows of springs and the Muddy River within Lake Mead NRA which are discharge areas for regional ground-water flow systems. The NPS's senior water rights, water resources, and water-related resource attributes would thus be impaired. Such impacts are not in the public interest.
 - E. Lake Mead NRA has Nevada State appropriative water rights for Kelsey's Springs, Roger's Spring, and Muddy Creek (River) which

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will be impaired by the appropriation and diversion proposed by this application.

- F. Available scientific literature is not adequate to reasonably assure that the ground-water appropriation and diversion proposed by this application will not impact the senior water rights of Death Valley NM and Lake Mead NRA. The State Engineer will, therefore, be unable to make a determination that injury will not be manifest upon other water users, including the NPS.
- G. The cumulative effects of the diversion proposed by this application and other applications within this basin (Exhibit B) will impair the senior water rights of Death Valley NM and Lake Mead NRA more quickly and/or to a greater degree than the diversion under this application alone. The diversions proposed by LVVWD in this basin exceed the water available for appropriation.
- H. The cumulative effects of the diversion proposed by this application and other applications within the regional ground-water flow systems (Exhibit B) will impair the senior water rights of Death Valley NM and Lake Mead NRA more quickly and/or to a greater degree than diversions in the subject ground-water basin or under this application alone. The diversions proposed by LVVWD in these basins exceed the water available for appropriation.
- I. Depletions to regional ground-water flow systems, and hence springs in Death Valley NM and Lake Mead NRA, and a drop in the water level at Devil's Hole will occur more quickly and/or in greater magnitude if return flow (or treated effluent) is not discharged in the basin of origin.
- J. It is unclear whether the quantity of water claimed by this application, individually and in combination with applications 53947 through 54036, 54038 through 54066, 54068 through 54076, 54105, and 54106 is necessary and is an amount reasonably required for municipal and domestic purposes.
- K. The application does not clearly indicate the place of use, the description of proposed works, estimated cost of works, number and type of units to be served, or annual consumptive use. Nor is it clear that the diversion sought is necessary and in an amount reasonably required for the beneficial uses applied for.

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Therefore, the application is defective and should be summarily
rejected by the State Engineer.

XIII. The NPS reserves the right to amend this exhibit as more information
becomes available.

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EXHIBIT B

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The following applications were submitted by the Las Vegas Valley Water District for appropriations in basins within the central corridor, the recharge area for the central corridor, and/or other parts of the regional flow system (Nevada Division of Water Resources, 1990).

Appli- cation no.	Basin no.	Basin Name	Proposed diversion rate, ft ³ /s
54060	168	THREE LAKES VALLEY (NORTHERN PART)	6
54061	168	THREE LAKES VALLEY (NORTHERN PART)	10
54068	168	THREE LAKES VALLEY (NORTHERN PART)	6
54069	168	THREE LAKES VALLEY (NORTHERN PART)	10
53947	169A	TICKAPOO VALLEY (NORTHERN PART)	6
53948	169A	TICKAPOO VALLEY (NORTHERN PART)	10
53949	169A	TICKAPOO VALLEY (NORTHERN PART)	10
53950	169B	TICKAPOO VALLEY (SOUTHERN PART)	6
53951	169B	TICKAPOO VALLEY (SOUTHERN PART)	10
53952	169B	TICKAPOO VALLEY (SOUTHERN PART)	10
54062	211	THREE LAKES VALLEY (SOUTHERN PART)	6
54063	211	THREE LAKES VALLEY (SOUTHERN PART)	6
54064	211	THREE LAKES VALLEY (SOUTHERN PART)	10
54065	211	THREE LAKES VALLEY (SOUTHERN PART)	10
54066	211	THREE LAKES VALLEY (SOUTHERN PART)	10
54106	211	THREE LAKES VALLEY (SOUTHERN PART)	10
53953	170	PENOYER VALLEY	6
53954	170	PENOYER VALLEY	10
53955	170	PENOYER VALLEY	10
53956	171	COAL VALLEY	6
53957	171	COAL VALLEY	6
53958	171	COAL VALLEY	10
53959	171	COAL VALLEY	10
53960	172	GARDEN VALLEY	6
53961	172	GARDEN VALLEY	6
53962	172	GARDEN VALLEY	6
53963	172	GARDEN VALLEY	10
53964	172	GARDEN VALLEY	10
53981	173A	RAILROAD VALLEY (SOUTHERN PART)	6
53982	173A	RAILROAD VALLEY (SOUTHERN PART)	6
53983	173A	RAILROAD VALLEY (SOUTHERN PART)	10
53984	156	HOT CREEK VALLEY	10

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Appli- cation no.	Basin no.	Basin Name	Proposed diversion rate, ft ³ /s
53965	173B	RAILROAD VALLEY (NORTHERN PART)	6
53966	173B	RAILROAD VALLEY (NORTHERN PART)	6
53967	173B	RAILROAD VALLEY (NORTHERN PART)	6
53968	173B	RAILROAD VALLEY (NORTHERN PART)	6
53969	173B	RAILROAD VALLEY (NORTHERN PART)	6
53970	173B	RAILROAD VALLEY (NORTHERN PART)	6
53971	173B	RAILROAD VALLEY (NORTHERN PART)	6
53972	173B	RAILROAD VALLEY (NORTHERN PART)	6
53973	173B	RAILROAD VALLEY (NORTHERN PART)	6
53974	173B	RAILROAD VALLEY (NORTHERN PART)	6
53975	173B	RAILROAD VALLEY (NORTHERN PART)	10
53976	173B	RAILROAD VALLEY (NORTHERN PART)	10
53977	173B	RAILROAD VALLEY (NORTHERN PART)	10
53978	173B	RAILROAD VALLEY (NORTHERN PART)	10
53979	173B	RAILROAD VALLEY (NORTHERN PART)	10
53980	173B	RAILROAD VALLEY (NORTHERN PART)	10
53985	173B	RAILROAD VALLEY (NORTHERN PART)	6
53986	173B	RAILROAD VALLEY (NORTHERN PART)	6
53998	174	JAKES VALLEY	6
53999	174	JAKES VALLEY	6
54000	174	JAKES VALLEY	6
54001	174	JAKES VALLEY	10
54002	174	JAKES VALLEY	10
53987	180	CAVE VALLEY	6
53988	180	CAVE VALLEY	10
53989	181	DRY LAKE VALLEY	6
53990	181	DRY LAKE VALLEY	10
53991	182	DELAMAR VALLEY	6
53992	182	DELAMAR VALLEY	10
53993	183	LAKE VALLEY	6
53994	183	LAKE VALLEY	6
53995	183	LAKE VALLEY	6
53996	183	LAKE VALLEY	10
53997	183	LAKE VALLEY	10
54038	207	WHITE RIVER VALLEY	6
54039	207	WHITE RIVER VALLEY	6
54040	207	WHITE RIVER VALLEY	6

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EXHIBIT B (Continued)

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Appli- cation no.	Basin no.	Basin Name	Proposed diversion rate, ft ³ /s
54041	207	WHITE RIVER VALLEY	10
54042	207	WHITE RIVER VALLEY	10
54031	202	PATTERSON VALLEY	6
54032	202	PATTERSON VALLEY	6
54033	202	PATTERSON VALLEY	10
54034	202	PATTERSON VALLEY	10
54035	205	LOWER MEADOW VALLEY WASH	6
54105	205	LOWER MEADOW VALLEY WASH	10
54043	208	PAHROC VALLEY	6
54044	208	PAHROC VALLEY	6
54045	208	PAHROC VALLEY	10
54046	208	PAHROC VALLEY	10
54047	208	PAHROC VALLEY	10
54048	208	PAHROC VALLEY	10
54049	208	PAHROC VALLEY	10
54050	209	PAHRANAGAT VALLEY	6
54051	209	PAHRANAGAT VALLEY	6
54052	209	PAHRANAGAT VALLEY	6
54053	209	PAHRANAGAT VALLEY	10
54054	209	PAHRANAGAT VALLEY	10
54055	210	COYOTE SPRINGS VALLEY	6
54056	210	COYOTE SPRINGS VALLEY	6
54057	210	COYOTE SPRINGS VALLEY	6
54058	210	COYOTE SPRINGS VALLEY	10
54059	210	COYOTE SPRINGS VALLEY	10
54070	212	LAS VEGAS VALLEY	10
54071	212	LAS VEGAS VALLEY	10
54072	212	LAS VEGAS VALLEY	10
54073	216	GARNET VALLEY	10
54074	217	HIDDEN VALLEY (NORTH)	10
54075	218	CALIFORNIA WASH	10
54076	218	CALIFORNIA WASH	10
54036	220	LOWER MOAPA VALLEY	10
Total			824

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EXHIBIT C

Protest by Owen R. Williams, on behalf of
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National Park Service

Committed diversions, perennial yields, and available and proposed diversions for basins within the central corridor, the recharge area for the central corridor, and/or other parts of regional flow systems (Nevada Division of Water Resources, 1990; Nevada Department of Conservation and Natural Resources, 1988).

Basin No.	Basin Name	Committed Diversions, A-ft/yr	Estimated Perennial Yield, A-ft/yr	Available Diversion, A-ft/yr	No. of LVVWD Applications	Proposed LVVWD Diversion Rate, A-ft/yr	Available Diversion Less Proposed Diversion, A-ft/yr
156	HOT CREEK VALLEY	1890	5500	3610	1	7245	-3635
168	THREE LAKES VALLEY (NORTHERN PART)	0	4000	4000	4	23183	-19183
169A	TICKAPOO VALLEY (NORTHERN PART)	0	2600	2600	3	18836	-16236
169B	TICKAPOO VALLEY (SOUTHERN PART)	0	3400	3400	3	18836	-15436
170	PENOYER VALLEY	5670	4000	-1670	3	18836	-20506
171	COAL VALLEY	45	6000	5955	4	23183	-17228
172	GARDEN VALLEY	377	6000	5623	5	27530	-21907
173A	RAILROAD VALLEY (SOUTHERN PART)	5188	2800	-2388	3	15938	-18326
173B	RAILROAD VALLEY (NORTHERN PART)	24575	75000	50425	18	95629	-45204
174	JAKES VALLEY	32	12000	11968	5	27530	-15562
180	CAVE VALLEY	31	14000	13969	2	11591	2378
181	DRY LAKE VALLEY	175	2500	2325	2	11591	-9266
182	DELAMAR VALLEY	120	1000	880	2	11591	-10711
183	LAKE VALLEY	22656	12000	-10656	5	27530	-38186
202	PATTERSON VALLEY	1216	4500	3284	4	23183	-19899
205	LOWER MEADOW VALLEY WASH	22915	5000	-17915	2	11591	-29506
207	WHITE RIVER VALLEY	21183	37000	15817	5	27530	-11713
208	PAHROC VALLEY	19	2000	1981	7	44917	-42936
209	PAHRANAGAT VALLEY	6678	25000	18322	5	27530	-9208
210	COYOTE SPRINGS VALLEY	0	18000	18000	5	27530	-9530
211	THREE LAKES VALLEY (SOUTHERN PART)	256	5000	4744	6	37672	-32928
212	LAS VEGAS VALLEY	81773	25000	-56773	3	21734	-78507
216	GARNET VALLEY	1651	400	-1251	1	7245	-8496
217	HIDDEN VALLEY (NORTH)	18	50	32	1	7245	-7213
218	CALIFORNIA WASH	510	36000	35490	2	14489	21001
220	LOWER MOAPA VALLEY	6906	35000	28094	1	7245	20849
Totals		203884	343750	139866	102	596960	-457094

IN THE MATTER OF APPLICATION 54056

EXHIBIT D

Protest by Owen R. Williams, on behalf of
the United States Department of the Interior,
National Park Service

Committed diversions and recharge rates for basins within the central corridor, the recharge area for the central corridor, and/or other parts of the regional flow systems (Nevada Division of Water Resources, 1990; Harrill, et al., 1988; and Nevada Department of Conservation and Natural Resources, 1988).

Basin No.	Basin Name	Committed	Proposed	Total	Estimated	Recharge
		Diversions, A-ft/yr	LVVWD Diversion, A-ft/yr	Diversion, A-ft/yr	Recharge Rate, A-ft/yr	Less Total Diversion, A-ft/yr
156	HOT CREEK VALLEY	1890	7245	9135	7000	-2135
168	THREE LAKES VALLEY (NORTHERN PART)	0	23183	23183	2000	-21183
169A	TICKAPOO VALLEY (NORTHERN PART)	0	18836	18836	2600	-16236
169B	TICKAPOO VALLEY (SOUTHERN PART)	0	18836	18836	3400	-15436
170	PENOYER VALLEY	5670	18836	24506	4300	-20206
171	COAL VALLEY	45	23183	23228	2000	-21228
172	GARDEN VALLEY	377	27530	27907	10000	-17907
173A	RAILROAD VALLEY (SOUTHERN PART)	5188	15938	21126	5500	-15626
173B	RAILROAD VALLEY (NORTHERN PART)	24575	95629	120204	46000	-74204
174	JAKES VALLEY	32	27530	27562	17000	-10562
180	CAVE VALLEY	31	11591	11622	14000	2378
181	DRY LAKE VALLEY	175	11591	11766	5000	-6766
182	DELAMAR VALLEY	120	11591	11711	1000	-10711
183	LAKE VALLEY	22656	27530	50186	13000	-37186
202	PATTERSON VALLEY	1216	23183	24399	6000	-18399
205	LOWER MEADOW VALLEY WASH	22915	11591	34506	1500	-33006
207	WHITE RIVER VALLEY	21183	27530	48713	38000	-10713
208	PAHROC VALLEY	19	44917	44936	2200	-42736
209	PAHRANAGAT VALLEY	6678	27530	34208	1800	-32408
210	COYOTE SPRINGS VALLEY	0	27530	27530	2100	-25430
211	THREE LAKES VALLEY (SOUTHERN PART)	256	37672	37928	6000	-31928
212	LAS VEGAS VALLEY	81773	21734	103507	30000	-73507
216	GARNET VALLEY	1651	7245	8896	400	-8496
217	HIDDEN VALLEY (NORTH)	18	7245	7263	400	-6863
218	CALIFORNIA WASH	510	14489	14999	100	-14899
220	LOWER MOAPA VALLEY	6906	7245	14151	100	-14051
Totals		203884	596960	800844	221400	-579444

IN THE MATTER OF APPLICATION 54056

EXHIBIT E

Protest by Owen R. Williams, on behalf of
the United States Department of the Interior,
National Park Service

The National Park Service (NPS) requests that the application be denied. Further, none of the information which follows should be construed to indicate that the NPS asks for anything less than denial of the application.

If the application is approved, the NPS requests the following.

- I. The NPS does not wish to impede any legitimate ground-water development in the State of Nevada, which will not impair the water resources and water-related attributes of Death Valley National Monument (Death Valley NM) and Lake Mead National Recreation Area (Lake Mead NRA). However, available scientific literature (Eakin, 1966; Mifflin, 1988; Winograd and Thordarson, 1975; Harrill et al., 1988; Dettinger, 1989; and Essington, 1990) indicates that major ground-water flow systems transmit ground water to Death Valley NM and Lake Mead NRA.

Based on this information, the NPS, requests that the State Engineer establish the following ground-water basins as one designated ground-water basin.

<u>Basin No.</u>	<u>Basin Name</u>
157	KAWICH VALLEY
158A	EMIGRANT VALLEY (GROOM LAKE VALLEY)
158B	EMIGRANT VALLEY (PAPOOSE LAKE VALLEY)
159	YUCCA FLAT
160	FRENCHMAN FLAT
161	INDIAN SPRINGS VALLEY
162	PAHRUMP VALLEY
168	THREE LAKES VALLEY (NORTHERN PART)
169A	TICKAPOO VALLEY (NORTHERN PART)
169B	TICKAPOO VALLEY (SOUTHERN PART)
173A	RAILROAD VALLEY (SOUTHERN PART)
211	THREE LAKES VALLEY (SOUTHERN PART)
225	MERCURY VALLEY
226	ROCK VALLEY
227A	FORTYMILE CANYON (JACKSON FLATS)
227B	FORTYMILE CANYON (BUCKBOARD MESA)
230	AMARGOSA DESERT
150	LITTLE FISH LAKE VALLEY
155C	LITTLE SMOKY VALLEY (SOUTHERN PART)
156	HOT CREEK VALLEY
173B	RAILROAD VALLEY (NORTHERN PART)

IN THE MATTER OF APPLICATION 54056

EXHIBIT E (Continued)

Protest by Owen R. Williams, on behalf of
the United States Department of the Interior,
National Park Service

<u>Basin No.</u>	<u>Basin Name</u>
170	PENOYER VALLEY
171	COAL VALLEY
172	GARDEN VALLEY
174	JAKES VALLEY
175	LONG VALLEY
180	CAVE VALLEY
181	DRY LAKE VALLEY
182	DELAMAR VALLEY
183	LAKE VALLEY
198	DRY VALLEY
199	ROSE VALLEY
200	EAGLE VALLEY
201	SPRING VALLEY
202	PATTERSON VALLEY
203	PANACA VALLEY
204	CLOVER VALLEY
205	LOWER MEADOW VALLEY WASH
206	KANE SPRINGS VALLEY
207	WHITE RIVER VALLEY
208	PAHROC VALLEY
209	PAHRANAGAT VALLEY
210	COYOTE SPRINGS VALLEY
212	LAS VEGAS VALLEY
215	BLACK MOUNTAINS AREA
216	GARNET VALLEY
217	HIDDEN VALLEY (NORTH)
218	CALIFORNIA WASH
219	MUDDY RIVER SPRINGS AREA
220	LOWER MOAPA VALLEY
154	NEWARK VALLEY
155A	LITTLE SMOKY VALLEY (NORTHERN PART)
155B	LITTLE SMOKY VALLEY (CENTRAL PART)

The designation would assist in protecting the interests of the NPS, the Las Vegas Valley Water District (LVVWD), the people of the United States, and the people of the State of Nevada. If this request is denied, the NPS requests that the State Engineer establish the above-mentioned basins as separate designated ground-water basins.

IN THE MATTER OF APPLICATION 54056

EXHIBIT E (Continued)

Protest by Owen R. Williams, on behalf of
the United States Department of the Interior,
National Park Service

- II. The NPS further requests that, if the application is approved, the permit be conditioned by the following.
- A. The LVVWD shall conduct a scientific ground-water investigation of basin-fill, volcanic, and carbonate-rock aquifers in east-central and southern Nevada to determine the hydrologic relationship between Basin 210, COYOTE SPRINGS VALLEY, and the water resources of Death Valley NM and Lake Mead NRA.
 - B. The LVVWD shall establish and operate a long-term monitoring program designed to detect any potential impacts to the water resources of Death Valley NM and Lake Mead NRA, directly or indirectly incident to the appropriation sought by the application.
 - C. The LVVWD plans for monitoring and investigating ground-water resources shall be subject to the approval of the NPS and the State Engineer and shall include quality assurance protocol acceptable to the above-mentioned parties.
 - D. The LVVWD shall quarterly, or at another mutually acceptable frequency, provide all data collected and analyses completed to the NPS and the State Engineer.
 - E. The LVVWD shall cease pumping ground water, or reduce the level of pumping to the no impact level, in the event that analyses by the NPS or the State Engineer create a reasonable expectation that the senior water rights of Death Valley NM and/or Lake Mead NRA will be impaired by pumping under the permit issued under this application.
- III. The NPS reserves the right to amend this exhibit as more information becomes available.

IN THE MATTER OF APPLICATION 54056

REFERENCES CITED

Protest by Owen R. Williams, on behalf of
the United States Department of the Interior,
National Park Service

Cappaert v. United States, 426 US 128, 1976.

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Eakin, T.E., 1966. A regional interbasin ground-water system in the White River Area, southeastern Nevada. Nevada Department of Conservation and Natural Resources. Water Resources Bulletin No. 33, Reprinted from: Water Resources Research, Vol 2, No. 2, pp 251-271, 1966.

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Mifflin, M.D., 1988. Region 5, Great Basin, in Back, W., Rosenhein, J.S., and P.R. Seaber, eds. Hydrogeology. The Geology of North America, v. O-2. Geological Society of America, Boulder, CO.

Nevada Division of Water Resources, 1990. Abstract of Filings of Las Vegas Valley Water District, dated May 9, 1990.

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Winograd, I.J., and W. Thordarson, 1975. Hydrogeologic and hydrogeochemical framework, southern-central Great Basin, Nevada-California, with special reference to the Nevada Test Site. U.S. Geological Survey Professional Paper 712-C, 119 p.

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July 13, 2001

EXHIBIT 24 writer's e-mail:
rde-lipkau@mhcl-law.com

FOR:

STATE OF NEVADA

PROTESTANT

APPLICANT

_____ OTHER

DATE 7-16-01

Hugh Ricci, P.E.
Nevada State Engineer
Division of Water Resources
123 W. Nye Lane, Suite 246
Carson City, NV 89706-0818

Dear Mr. Ricci:

Attached is a Stipulation between three of the U.S. Department of the Interior protestants (Bureau of Land Management, Fish and Wildlife Service, and National Park Service) and the applicants Las Vegas Valley Water District and Southern Nevada Water Authority concerning the resolution of the protests filed by the above-named protestants to Application Nos. 54055-54059 to withdraw groundwater from the Coyote Spring Valley hydrographic basin. This Stipulation contemplates the incorporation of its Exhibit "A" (Monitoring, Management, and Mitigation Plan for Existing and Future Permitted Groundwater Development in Coyote Spring Valley) into the terms and conditions of any permit issued by you pursuant to the subject applications.

Therefore, pursuant to paragraph 5 of the Stipulation, we request that you provide us a written response to this letter stating whether you will include the above-referenced Exhibit A as part of any permit terms and conditions issued pursuant to the subject applications, including any modifications you deem necessary. In the event that you are unable to respond to this request prior to the start of the administrative hearing on the subject applications, we request that you address our request for incorporation of Exhibit A prior to the consideration of any pending motions or the start of the hearing.

Thank you in advance for your timely consideration.

Sincerely,



Stephen R. Palmer
Assistant Regional Solicitor
Attorney for DOI Protestants



Ross E. De Lipkau
Marshall, Hill, Cassas, and De Lipkau
Attorney for Las Vegas Valley Water District and
Southern Nevada Water Authority

c: Karen Peterson, Esq.
Richard Berley, Esq.

STIPULATION FOR DISMISSAL OF PROTESTS

This Stipulation is made and entered into between the Las Vegas Valley Water District ("LVVWD") and the Southern Nevada Water Authority ("SNWA") and the United States Department of the Interior, Bureau of Land Management, National Park Service, and United States Fish and Wildlife Service (collectively the "Federal Bureaus").

RECITALS

- A. Currently there are approximately 16,300 total acre-feet per year (afy) of permitted groundwater rights in the Coyote Spring Valley. Of this amount, SNWA has permitted rights to 7,500 afy. SNWA has developed a monitoring plan and submitted it to the State Engineer in anticipation of developing such water rights. SNWA intends to develop these rights as generally described in the draft Coyote Spring Valley Ground Water Development Plan (April 26, 2000 version). The Plan is in draft form while details as to facilities and funding are worked out with the Moapa Valley Water District. LVVWD, SNWA, and Moapa Valley Water District have entered into an agreement to jointly develop certain water rights in the Area of Interest defined below.
- B. There are a number of existing monitoring programs required by the Nevada State Engineer currently in place for various areas in Coyote Spring Valley and the Muddy Springs area. If mutually agreed-upon, the monitoring requirements outlined in the Monitoring, Management, and Mitigation Plan, attached hereto as "Exhibit A", may someday incorporate these existing plans.

- C. On October 17, 1989, LVVWD filed Applications 54055-54059, inclusive (the "Applications") for a combined maximum duty of approximately 27,512 acre-feet per year, with the Nevada State Engineer's Office. LVVWD/SNWA intend to pump existing and future groundwater rights with concurrent monitoring, modeling, and hydrogeologic investigations. However, the timing and quantities/volumes of this pumping cannot be determined at this time, because water availability, potential adverse impacts, future population growth and resulting water demand in the Las Vegas region, Moapa Valley and the I-15 corridor are not known at this time.
- D. The Federal Bureaus filed timely protests to the granting of water rights under LVVWD's Applications pursuant to the Federal Bureaus' responsibility to protect the state and federal water rights and other water-dependent resources, including the endangered Moapa Dace, of the Federal Bureaus ("federal rights and resources") in the Area of Interest, defined as Coyote Spring Valley, Muddy Springs Area, Hidden Valley (North), Garnet Valley, California Wash, Black Mountains Area, Kane Springs Valley, Lower Meadow Valley Wash, Tule Desert and Lower Moapa Valley. The Federal Bureaus are required by law to manage, protect and preserve federal rights and resources that fall under their jurisdiction. A number of these federal rights and resources occur within or in the vicinity of the Area of Interest.
- E. The Federal Bureaus assert that groundwater withdrawals from Coyote Spring Valley pose a risk of adversely impacting federal rights and resources and are desirous of working in a cooperative manner with the LVVWD/SNWA to protect these resources. Additionally, the Secretary of the Interior is required to monitor the conditions and habitat of species listed pursuant to the Endangered Species Act that could be affected by

withdrawals of groundwater from lands underlain by the regional carbonate aquifer which is the proposed source of water under the applications and other existing rights of LVVWD and SNWA and take appropriate action, in conjunction with the Nevada State Engineer, to address any impacts from such withdrawal. See Public Law 100-275, Section 6 (March 31, 1988).

- F. The parties acknowledge that pursuant to NRS 534.110(4) each right to appropriate groundwater in the State of Nevada carries with it the right to make a reasonable lowering of the static water level at the appropriator's point of diversion and that pursuant to NRS 534.110(5) the State Engineer may allow, at his discretion, the water level to be lowered at the point of diversion of a prior appropriator so long as the rights of holders of existing appropriations can be satisfied under such express conditions.
- G. The State Engineer has set an administrative hearing on the protests of the Federal Bureaus and other protestants commencing July 16, 2001.
- H. The parties acknowledge that other entities and individuals have lodged protests to the Applications, but such additional protestants are not parties to or in any way bound or prejudiced by this Stipulation.
- I. The parties agree that the preferred conceptual approach for protecting federal rights and resources from unreasonable adverse impacts from ground water pumping in the Area of Interest is through the use of monitoring, management and mitigation of groundwater pumping. The common goal of the parties is to manage the development of the carbonate aquifer as a water resource without causing unreasonable adverse impacts to the federal rights and resources. Groundwater and the effects of pumping need to be properly monitored and managed to avoid adverse impacts to the Area of Interest. There is a need

to conduct studies of the aquifer's response to pumping stresses through incremental development of reasonable quantities of groundwater accompanied by the monitoring, management and mitigation plan as set forth in Exhibit A to this Stipulation. The parties have determined that it is in their best interests to cooperate in the collection of additional hydrologic and hydrogeologic information about the carbonate aquifer system within the Area of Interest.

- J. The parties desire to resolve the issues raised by the protests according to the terms and conditions contained herein.

NOW, THEREFORE, in consideration of the mutual promises and covenants contained herein, the parties do agree as follows:

1. The Federal Bureaus hereby expressly agree to withdraw their protests to the Applications and agree that the State Engineer may rule on the Applications based upon the terms and conditions set forth herein. It is expressly understood that this Stipulation is binding only upon the parties hereto and their successors, transferees and assigns, and shall not bind or seek to bind or prejudice any other parties or protestants, including the United States as trustee on behalf of the Moapa Band of Paiute Indians or any other Indian tribe.
2. The parties agree to implement the Monitoring, Management and Mitigation plan, attached hereto "Exhibit A", which is expressly incorporated into this Stipulation as if set forth in full herein.
3. This Stipulation does not waive any authorities of the Federal Bureaus or the United States, including any other agency or bureau not specified in this Stipulation, nor relieves

LVVWD/SNWA from complying with any federal laws, including, but not limited to, the National Environmental Policy Act, the Endangered Species Act, the Federal Land Policy and Management Act, and any and all rules and regulations thereunder. It is the expressed intention of the parties that by entering into this Stipulation, the Federal Bureaus and the United States are waiving no legal rights of any kind.

4. The parties expressly acknowledge that the Nevada State Engineer has, pursuant to both statutory and case law, broad authority to administer groundwater resources in the State of Nevada and, furthermore, that nothing contained in this Stipulation shall be construed as waiving or in any manner diminishing such authority.
5. The parties agree that a copy of this Stipulation shall be submitted to the Nevada State Engineer prior to the commencement of the administrative proceedings scheduled to begin on July 16, 2001. At that time, the parties shall request, either in writing, or on the record at the beginning of the scheduled proceeding, that the State Engineer include Exhibit A of this Stipulation as part of the permit terms and conditions, in the event that he grants Applications 54055, 54056, 54057, 54058, and 54059, in total or in part. In addition, the parties will request that the State Engineer state in writing, prior to the hearing, that he will incorporate Exhibit A of the Stipulation into the permit terms in the event that he grants Applications 54055, 54056, 54057, 54058, and 54059, in total or in part. A copy of the proposed request letter to the State Engineer is attached to this Stipulation as Exhibit "B" and is made a part hereof. If the State Engineer does so state, then the Federal Bureaus, at their option, may attend the hearing, but will present no issues or statements that are adverse to the interests of the LVVWD/SNWA.

6. Notices. If notice is required to be sent by the parties, the addresses are as follows:

If to Federal Bureaus:

District Manager
Las Vegas Field Office
Bureau of Land Management
4765 W. Vegas Drive
Las Vegas, NV 89108-2135

Supervisor
Nevada Field Office
Fish and Wildlife Service
1340 Financial Blvd., #234
Reno, NV 89502

Branch Chief
Water Rights Branch
National Park Service
1201 Oak Ridge Drive, Suite 250
Fort Collins, CO 80525

If to LVVWD/SNWA:

General Manager
Las Vegas Valley Water District
1001 S. Valley View Boulevard
Las Vegas, NV 89153

General Manager
Southern Nevada Water Authority
1001 S. Valley View Boulevard
Las Vegas, NV 89153

7. Assigning. Any party hereto may transfer or assign its interest in the water rights here involved. Any and all transferees and assignees shall be bound by the terms and conditions of this Stipulation. As a condition to any such transfer or assignment, the transferee and/or

assignee shall execute a stipulation expressly stating it is bound to all of the terms and conditions of this Stipulation.

8. Choice of Law. This Stipulation shall be governed in accordance with the laws of the State of Nevada to the extent not inconsistent with federal law.
9. Copies of all correspondence between and data gathered by the parties pertinent to the Area of Interest shall be submitted to the State Engineer. It is the intention of the parties hereto that the State Engineer shall be kept informed of all activities in the same fashion as are the parties hereto.
10. By entering into this Stipulation, the Federal Bureaus do not become a party to any proceeding other than the protest proceeding referenced above or waive its immunity from suit or consent to or acknowledge the jurisdiction of any court or tribunal. Nothing in the Stipulation shall effect any federal reserved water rights of the Federal Bureaus or the United States on behalf of any Indian Tribe and the Federal Bureaus by entering into this Stipulation do not waive or prejudice any such rights. The Federal Bureaus reserve all legal rights, of any kind, it possesses pursuant to or derived from Executive Orders, acts of Congress, judicial decisions, or regulations promulgated pursuant thereto. Neither party waives its rights to seek relief in any appropriate forum of its choice not expressly prohibited by this Stipulation.
11. Any commitment of funding by the Federal Bureaus or the LVVWD/SNWA in this Stipulation or otherwise is subject to appropriations by Congress or the governing bodies of the LVVWD/SNWA as appropriate.
12. This Stipulation may be amended by mutual agreement of the parties.

13. This Stipulation sets forth the entire agreement of the parties and supercedes all prior discussions, negotiations, understandings or agreements. No alteration or variation of this Stipulation shall be valid or binding unless contained in an amendment in accordance with paragraph 12.
14. The terms and conditions of this Stipulation shall be binding upon and inure to the benefit of the parties hereto and their respective personal representatives, successors, transferees and assigns.
15. This Stipulation will become effective as between the parties upon all parties signing this Stipulation. The parties may execute this Stipulation in two or more counterparts, which shall, in the aggregate, be signed by all parties, each counterpart shall be deemed an original as against any party who has signed it.
16. Other entities may become parties to this Stipulation by mutual assent of the parties.

IN WITNESS WHEREOF, the parties have executed this Stipulation as of the dates written below.

UNITED STATES DEPARTMENT OF THE INTERIOR

Date: 7-19-01

BUREAU OF LAND MANAGEMENT

By *Robert A. Alley*

Title: *State Director, NV*

Date: _____

FISH AND WILDLIFE SERVICE

Date: JUL 18 2001

FISH AND WILDLIFE SERVICE

By Mary Ellen Mueller

Title: Acting Manager CA/NV Operations Office

Date: 7/13/01

NATIONAL PARK SERVICE

By 

Title: Superintendent of Lake Mead National
Recreation Area

Date: 7/13/01

NATIONAL PARK SERVICE

By 

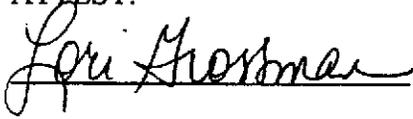
Title: Regional Director, Pacific West Region

Date: July 12, 2001

LAS VEGAS VALLEY WATER DISTRICT

By 
Patricia Mulroy
Title: General Manager

ATTEST:



Date: July 12, 2001

SOUTHERN NEVADA WATER AUTHORITY

By 
~~Patricia Mulroy~~
Title: General Manager

ATTEST:



EXHIBIT A

MONITORING, MANAGEMENT AND MITIGATION PLAN FOR EXISTING AND FUTURE PERMITTED GROUNDWATER DEVELOPMENT IN COYOTE SPRING VALLEY (BASIN 210)

The purpose of this plan is to describe LVVWD/SNWA's and the Federal Bureaus' obligations in the Area of Interest regarding monitoring, management and mitigation of SNWA's current groundwater rights and, if granted by the Nevada State Engineer, LVVWD's groundwater rights in Coyote Spring Valley. It also describes the format and scope of a Technical Review Panel (herein after referred to as TRP).

1. Monitoring Requirements

A. *Production Wells*

- LVVWD/SNWA will ensure that all LVVWD/SNWA production wells in Coyote Spring Valley are metered continuously for discharge. Water level data will be collected continuously as is feasible.

B. *Monitoring Wells*

- LVVWD/SNWA, in consultation with the TRP (see description in following section), will locate and construct dedicated monitoring wells near production well fields. These wells will be defined as "near production" monitor wells. LVVWD/SNWA, when performing initial aquifer tests in recently drilled production wells, will utilize nearby observation wells to determine aquifer characteristics.
- LVVWD/SNWA will continuously monitor water levels in all LVVWD/SNWA "near production" monitoring wells.
- LVVWD/SNWA, in consultation with the TRP will locate and drill a single, dedicated carbonate rock aquifer monitoring well approximately half-way between the production wells in Coyote Spring Valley (Hydrographic Area 210) and the principal spring discharge area in Muddy River Springs Area (Hydrographic Area 219). LVVWD/SNWA will ensure that water levels in this "midway" monitor well are measured continuously. Barometric pressure at this location will also be measured continuously.
- LVVWD/SNWA, in cooperation with Sierra Pacific (formerly Nevada Power Company), USGS, and the State Engineer, will ensure that water levels in existing, carbonate monitor wells EH-5b, EH-4, and CSV-2 will be monitored continuously.
- LVVWD/SNWA, after the completion of the elevation-control survey (see paragraph 1D), will examine available information in consultation with the TRP to (1) determine if the information is sufficient to describe the vertical hydraulic gradient between the regional carbonate aquifer, the alluvial aquifer, and spring heads in the Muddy River Springs area, and (2) characterize ground-water and surface-water interactions in the area. If LVVWD/SNWA in consultation with the TRP determines that information is insufficient to

describe the vertical hydraulic gradient, then LVVWD/SNWA will construct at least one well in the area to determine the vertical hydraulic gradient. Well design and location(s) will be based on consultation with the TRP. LVVWD/SNWA in consultation with the TRP will determine if water levels in the well(s) will be monitored continuously.

C. Streamflow and Spring flow

- LVVWD/SNWA will equip and maintain two continuous surface water measurement sites at locations selected in consultation with the TRP in the Muddy Springs Area. These sites would be in addition to surface water gaging stations 09415900 Muddy Springs at LDS Farm near Moapa, 09415910 Pederson Spring near Moapa, and 09415920 Warm Springs West near Moapa, which LVVWD/SNWA currently funds in cooperation with NDWR and USGS.
- LVVWD/SNWA, in cooperation with the Moapa Valley Water District, will equip and maintain continuous flow measurement devices located at Moapa Valley Water District's Jones Spring (Apcar) and Baldwin Spring pumping stations to determine total spring discharge.
- United States Fish and Wildlife Service (USFWS) will equip and maintain continuous temperature monitoring at Pederson Springs, and a continuous surface water measurement site at Plummer (Iverson) Spring.
- National Park Service in cooperation with USGS will equip and maintain continuous surface water measurement sites at Rogers Spring and Blue Point Spring.

D. Elevation Control

- LVVWD/SNWA will conduct a detailed elevation survey of LVVWD/SNWA wells in the Muddy Springs Area. LVVWD/SNWA in consultation with the TRP, will develop and implement a plan to determine elevation above sea level of all major spring orifices and monitoring and production wells as is feasible in the Muddy Springs Area and the Rogers and Blue Point spring complex. The TRP will determine where elevation data already exists, the accuracy of existing information, and the need for additional information.

E. Quality of Data

- The parties will make measurements and collect data according to USGS standard protocol

F. Water Quality

- LVVWD/SNWA will collect and analyze water quality samples for major ions twice annually at two surface water measurement sites at locations selected in consultation with the TRP in the Muddy Springs Area. Duplicate samples will be collected and analyzed at the two sites to ensure proper analyses.
- LVVWD/SNWA will collect and analyze water quality samples that regionally represent different water quality types at well locations determined in consultation with the TRP. Samples will be analyzed for major ions, trace elements and the stable isotopes of hydrogen and oxygen. Samples will be collected semi-annually for one and a half years, beginning

during initial aquifer testing of production wells. Long-term water quality sampling will be conducted every five years thereafter.

G. Reporting

- LVVWD/SNWA will manage an internet database in cooperation with the USGS, the Federal Bureaus, the State Engineer, Moapa Valley Water District, and other entities as feasible based on cooperation to collect and compile data (e.g. water levels, surface water flows, water quality, and ground-water pumpage) for the Area of Interest.
- All data collected by any party under or as described in this plan shall be fully and cooperatively shared among the parties.
- Data shall be posted to the internet site within 90 days of its collection by LVVWD/SNWA. LVVWD/SNWA will use its best efforts to post data to the internet site within 30 days of its submission to the LVVWD/SNWA if collected by other parties, or in the case of water quality data, within 90 days of laboratory results.

2. Management Requirements

A. Goal

- The common goal of the parties is to manage the development of the carbonate aquifer as a water resource without resulting in unreasonable adverse impacts to the state and federal water rights and water resources of the Federal Bureaus. Additionally, decisions must be based on the best scientific information available and the parties will collaborate on technical data collection and analysis.

B. Symposium

- LVVWD/SNWA, in cooperation with the Federal Bureaus and other members of the Technical Review Panel, will hold a public symposium at least every two years to solicit information on monitoring, modeling, and mitigation.

C. Technical Review Panel

- The parties will create and convene a TRP by February 1, 2002. Membership will include LVVWD, SNWA, Moapa Valley Water District, FWS, NPS, and BLM. The parties mutually agree to invite a representative of the State Engineer's Office to participate as the chair of the TRP. The parties may mutually agree to invite other entities to participate in the TRP as appropriate.
- The purpose of the TRP is to:
 - 1) provide a forum for scientific/technical review
 - 2) disseminate data to the public through an internet site
 - 3) share information regarding modeling efforts and model results
 - 4) identify needs for additional data collection and scientific investigations
 - 5) hold a meeting at least every two years to share and discuss relevant data and to form recommendations about monitoring, modeling, and mitigation

3. Mitigation Requirements

- LVVWD/SNWA will mitigate unreasonable adverse impacts either as agreed upon by the parties or after the State Engineer determines whether there are unreasonable adverse impacts due to LVVWD/SNWA pumping. LVVWD/SNWA will take the necessary steps to ensure that mitigation actions are feasible. Mitigation measures will include one or more of the following:
 - Geographic redistribution of pumpage;
 - Reduction or cessation in pumpage;
 - Restoration/modification of existing habitat;
 - Establishment of new habitat;
 - Augmentation of water resources with pumped groundwater;
 - Other measures as agreed to by the parties and/or required by the State Engineer, to the extent not inconsistent with this agreement

4. Modification of the Plan

- The parties acknowledge that the State Engineer has the authority to modify this plan, and any party shall have the right to petition the State Engineer to modify this plan upon 90 days written notice to the other parties; provided, however, that no such petitions may be filed within 2 years of the first meeting of Technical Review Panel. Any party may submit written comments to the State Engineer regarding the merits of any such petition for modification.