APPENDIX F

COMMENTS ON THE KANE SPRINGS VALLEY GROUNDWATER DEVELOPMENT PROJECT DRAFT EIS AND BLM'S RESPONSES TO COMMENTS

APPENDIX F - RESPONSES TO COMMENTS

The 60-day comment period for public review of the Draft EIS began with the publication of the Notice of Availability in the Federal Register on June 22, 2007. The BLM distributed press releases announcing the dates, locations, and times of the public meetings to local and regional print and broadcast media. The Draft EIS was distributed to individuals and agencies who requested copies (see Chapter 5.3), and posted on the BLM's website at www.blm.gov/nv. Four public meetings were held during the public comment period (June 22 to August 20, 2007) to receive comments on the Draft EIS. Dates and locations of these meetings, and the number of attendees, are as follows:

Carson City, Nevada - 0 Attendees

Date:	July 30, 2007
Time:	4:00 – 6:00 p.m.
Location:	Plaza Hotel

Alamo, Nevada – 3 Attendees

Date:	August 1, 2007
Time:	6:00 – 8:00 p.m.
Location:	Alamo Ambulance Barn

Pioche, Nevada – 1 Attendee

Date:	July 31, 2007
Time:	6:00 – 8:00 p.m.
Location:	Pioche Town Hall

Las Vegas, Nevada – 10 Attendees

Date:	August 2, 2007
Time:	6:00 – 8:00 p.m.
Location:	Atrium Suite Hotel

During the 60-day public comment period, the BLM received 19 comment documents (i.e. letters, emails, faxes) from individuals, private companies, and federal and state agencies commenting on the Draft EIS. A list of comment documents received, the content of each letter, and BLM's responses to comments are provided in Appendix F. Each comment document was assigned a reference number, and each comment within the document was identified with a number. BLM's responses are listed next to the comment. The following is a list of comment documents received:

1. U.S Environmental Protection Agency
2. Nevada Department of Wildlife
3. Nevada State Historic Preservation Office
4. Josh DeGayner
5. Delaine and Rick Spilsbury
6. Center for Biological Diversity
7. Southern Nevada Water Authority
8. Simeon Herskovits – Advocates for Community and Environment
9. Launce Rake – Progressive Leadership Alliance of Nevada
10. Rose Strickland – Toiyabe Chapter of the Sierra Club
11. Jim and Mary Dale Deacon
12. Peter Hahn
13. Bruce Halloway
14. Abigail Johnson
15. B. Sachau
16. Carl Savely
17. Tim Vogt
18. Peter Williamson

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

REC'D - BLM - NSO
9:00 A.M. AUG 27 2007

August 20, 2007

Penny Woods, Project Manager
Bureau of Land Management
Nevada State Office
Groundwater Projects Office
1340 Financial Blvd.
P.O. Box 12000
Reno, NV 89520

Subject: Draft Environmental Impact Statement for Kane Springs Valley Groundwater Development Project, Lincoln County, Nevada (CEQ# 20070255)

Dear Ms. Woods,

The U.S. Environmental Protection Agency (EPA) has reviewed the Draft Environmental Impact Statement (DEIS) for the above project. Our review and comments are pursuant to the National Environmental Policy Act (NEPA), Council on Environmental Quality (CEQ) regulations (40 CFR Parts 1500-1508), and our NEPA review authority under Section 309 of the Clean Air Act.

Based on our review, we have rated the Kane Springs Valley Groundwater Development Project as Environmental Concerns – Insufficient Information (EC-2). A *Summary of EPA Rating Definitions* is enclosed. EPA is concerned with the cumulative impacts of the proposed project in conjunction with reasonably foreseeable future residential, commercial, groundwater, and energy development projects in the region; all of which anticipate use of the same carbonate-rock aquifer. Our concern is based upon the many pending water right applications and uncertainties regarding the long-term sustainable yield of this aquifer.

We urge the Bureau of Land Management, Cooperating Agencies, Lincoln County Water District, Vidler Water Company, Coyote Springs Investments, and other water right applicants to develop a regional groundwater framework to ensure efficient long-term sustainable use of the deep carbonate-rock aquifer and avoidance of adverse impacts to third parties and surface and groundwater quality and quantity.

The proposed project is located in the Mojave Desert characterized by low humidity and minimal annual rainfall. Water supply sources are scarce. We recommend that Kane Springs Valley project water be utilized only after a clear demonstration by beneficiaries of effective use of in-basin supplies and application of aggressive water use efficiency, conservation, and reuse measures. We also recommend that the final

environmental impact statement (FEIS) include a discussion of potential monitoring, adaptive management and mitigation measures for the direct impacts of the project to regional springs, as well as indirect and cumulative impacts.

We appreciate the opportunity to review this DEIS. We are available to discuss our comments. When the FEIS is released for public review, please send one copy to the above address (mail code: CED-2). If you have any questions, please call me at 415-972-3846 or Laura Fujii, of my staff, at 415-972-3852 or fujii.laura@epa.gov.

Sincerely,

Nova Blazej, Manager
Environmental Review Office

Enclosures:
Summary of EPA Rating Definitions
Detailed Comments

Cc: Jeff Weeks, BLM, Ely District Office
Annalaura Averill-Murry, U.S. Fish and Wildlife Service, Nevada Field Office
Brad Hardenbrook, Nevada Department of Wildlife
Brad Huza, Moapa Valley Water District
Ronda Hornbeck, Lincoln County Water District
Donald A. Pattalock, Vidler Water Company
Ruth Sundermeyer, Coyote Springs Investments

SUMMARY OF EPA RATING DEFINITIONS

This rating system was developed as a means to summarize EPA's level of concern with a proposed action. The ratings are a combination of alphabetical categories for evaluation of the environmental impacts of the proposal and numerical categories for evaluation of the adequacy of the EIS.

ENVIRONMENTAL IMPACT OF THE ACTION

"LO" (Lack of Objections)

The EPA review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

"EC" (Environmental Concerns)

The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impact. EPA would like to work with the lead agency to reduce these impacts.

"EO" (Environmental Objections)

The EPA review has identified significant environmental impacts that must be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

"EU" (Environmentally Unsatisfactory)

The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potentially unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the CEQ.

ADEQUACY OF THE IMPACT STATEMENT

Category 1" (Adequate)

EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis or data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

"Category 2" (Insufficient Information)

The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analysed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses, or discussion should be included in the final EIS.

"Category 3" (Inadequate)

EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analysed in the draft EIS, which should be analysed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the NEPA and/or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

*From EPA Manual 1640, "Policy and Procedures for the Review of Federal Actions Impacting the Environment."

EPA DETAILED COMMENTS ON THE DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR THE KANE SPRINGS VALLEY GROUNDWATER DEVELOPMENT PROJECT, LINCOLN COUNTY, NV, AUGUST 20, 2007.

Cumulative Impact Analysis

Promote formation of a regional carbonate-rock groundwater framework and aggressive water use efficiency and conservation. EPA is concerned with the potential adverse cumulative impacts of the proposed project in conjunction with reasonably foreseeable future projects which anticipate use of the same carbonate-rock aquifer. Our concern is based upon: 1) the many pending water right applications in Nevada and Utah; 2) the uncertainties regarding: the amount of ground-water recharge, quantification of subsurface inflows and outflows, the connection of Kane Springs Valley with the White River Regional flow system, the interconnection between multiple hydrographic basins; and, 3) impacts on senior appropriated water rights and sensitive aquatic resources in down-gradient basins (Nevada State Engineer Ruling 5712, p. 15). Table 4-7 (p. 4-59) also indicates that permitted water rights may already exceed the estimated perennial yield for the cumulative impacts area (Kane Springs Valley, Coyote Spring Valley, Muddy River Springs Valley). The draft environmental impact statement (DEIS) also states that there may be potential direct impacts to groundwater quantity from drawdown and indirect impacts related to lowered yields at regional springs (p. ES-13).

Recommendations:

Comment No. 1-1

EPA commends the collaboration between the water right applicants and U.S. Fish and Wildlife to address potential impacts to Muddy River Springs sensitive species (Appendix A) from use of the carbonate-rock aquifer. We recommend the Bureau of Land Management (BLM), Cooperating Agencies, Lincoln County Water District (LCWD), Vidler Water Company (VWC), Coyote Springs Investments (CSI), and other water right applicants continue this collaboration in the form of a regional groundwater framework to ensure efficient long-term sustainable use of the deep carbonate-rock aquifer and avoidance of adverse impacts to third parties and surface and groundwater quality and quantity. Opportunities for such collaboration should be discussed in the final environmental impact statement (FEIS).

Comment No. 1-2

We also recommend that water provided by this project be allocated only after the beneficiaries have demonstrated effective use of in-basin supplies and maximum water use efficiencies, such as conservation, reuse, and maintenance of water quality. This information should also be included in the FEIS, as discussed below.

Implement measures to avoid and minimize adverse indirect and cumulative impacts to regional springs. While we recognize and commend the agreements to minimize adverse impacts on the Moapa dace and Muddy River Springs (Appendix A), we remain concerned with potential indirect and cumulative impacts to other third parties, beneficial uses, and aquatic species, wildlife, and habitat resources due to cumulative reduction in flows to regional springs.

Response to Comment No. 1-1

The BLM not only has the authority, but also the responsibility to sustain the health, diversity, and productivity of the public lands for the use and enjoyment of present and future generations. As required under the Federal Land Policy and Management Act of 1976, the BLM will continue to coordinate with other public and local entities when making resource decisions regarding the Proposed Action. Table 1-2 (Authorizations, Permits, Review, and Approvals) provides a listing of agencies and their responsibilities relating to the Proposed Action. Although the BLM has the authority and responsibility to coordinate with agencies and water rights applicants, it is the responsibility of the State Engineers Office to award or deny water rights applications and thus ensure efficient long-term sustainable use of the deep carbonate aquifer. One such collaboration is presented in the Stipulation Agreement between LCWD/Vidler Water Company and the U.S. Fish and Wildlife Service (Appendix A-1) which represents a separate process not required under FLPMA or any other law.

Response to Comment No. 1-2

As part of the water appropriation permit application review and authorization, the Nevada State Engineer has the authority to approve and control the amount of groundwater pumped from basins in Nevada. The BLM has the authority to approve or deny the right of way application (for which this EIS was written) for use of federal lands.

Comment No. 1-3

Recommendations:
The final environmental impact statement (FEIS) should describe potential indirect and cumulative impacts to regional springs other than Muddy River Springs, and on other third parties, beneficial uses, and sensitive resources. We recommend the FEIS include a description of measures which could avoid or minimize these impacts, and the most appropriate entities to implement these measures.

Comment No. 1-4

Water rights and appropriations from the carbonate-rock aquifer are regulated by the Nevada State Engineer. To ensure full disclosure, we recommend the FEIS describe the water right permitting process and the role of the Nevada State Engineer in protecting beneficial uses, human health, and the environment. For example, describe whether water right permits include special conditions; measures to mitigate direct, indirect, and cumulative impacts; and provisions for monitoring and adaptive management.

Comment No. 1-5

We recommend the FEIS include a discussion of potential monitoring, adaptive management and mitigation measures for the direct impacts of the project, as well as indirect and cumulative impacts. The description of potential mitigation measures should discuss the effectiveness of the measure and the appropriate entities to implement the mitigation.

Provide a summary of the CSI development and the potential direct, indirect and cumulative impacts of this connected action. The CSI development would be the primary beneficiary of the proposed Kane Springs Valley Groundwater Development Project (Appendix B Nevada State Engineer's Ruling 5712, p. 19). In addition, the CSI development would require an additional 70,000 acre-feet per year (afy) for build-out (15,000 afy for CSI-Clark County, p. 4-49; and 55,000 afy CSI–Lincoln County, p. 4-54). Actions are connected if they are closely related and if they cannot or will not proceed unless other actions are taken previously or simultaneously (40 CFR 1508.25(a)(1)). The CSI development is a connected action, in that the development relies, upon the water provided by the Kane Springs Valley Groundwater Development Project, existing Coyote Springs Valley permitted water rights, and pending water right applications. We are concerned with the potential direct, indirect and cumulative impacts associated with the CSI development which would result in conversion of approximately 36,603 acres of Mojave Desert (pps. 4-48, 4-51) to urban use.

Comment No. 1-6

Recommendation:
The FEIS should include a summary of the potential direct, indirect, and cumulative impacts from the CSI development enabled by this project. Of specific interest are potential impacts to water resources, air quality, desert biotic communities, wildlife, Wilderness, Special Use Areas, and Areas of Critical Environmental Concern. The FEIS should also discuss the status of the EIS for the CSI Development/Multi-Species Habitat Conservation Plan.

Response to Comment No. 1-3

Chapter 4 (Environmental Consequences) describes potential indirect impacts to regional springs and other sensitive resources within the project region of influence. Chapter 4.20 (Cumulative Impacts) describes potential cumulative impacts to regional springs and other sensitive resources within the cumulative impact region of influence. Applicant proposed Environmental Protection Measures are listed in Appendix C. Additional mitigation measures may be required by the USFWS through Section 7 or Section 10 consultation. The Biological Opinion is expected to be released by February, 2008 and may contain additional mitigation measures. These will be described in the Record the Decision.

Response to Comment No. 1-4

The water rights and permit appropriation process for the Proposed Action is described in Chapter 1.4.2.1 (Water Rights). Additional information about the Nevada State Engineers permitting process can be found on their website (http://water.nv.gov/). A copy of the Nevada State Engineers ruling for this project is included as Appendix B in the FEIS. A summary of Ruling 5712 has been added to section 3.3.3.3.1 in the FEIS.

Response to Comment No. 1-5

Applicant proposed environmental protection measures to reduce or minimize construction-related impacts are incorporated in the project design and outlined in Appendix C (Standard Construction and Operating Procedures). Potential impacts associated with implementation of mitigation measures that could be required by BLM for issuance of the ROW for the Proposed Action, or another permitting agency, are described in Chapter 4 of the Final EIS for each resource. The BLM would monitor the effectiveness of approved mitigation measures (i.e. desert tortoise fencing, installation of perch inhibitors, revegetation). In addition, the Applicant must comply with specific stipulations directed by the Nevada State Engineer for allocation of water supplies (See Ruling 5712 in Appendix B), and by the USFWS for groundwater pumping and potential impacts to the Muddy River Springs area (See Appendix A).

Conservation and Water Use Efficiency

Provide specific information on CSI development water use and water rights. The DEIS states that LCWD, through its partner VWC, has an agreement with CSI to provide all Kane Springs Basin water to the CSI development in Clark and Lincoln Counties. CSI has also agreed to pay for the proposed groundwater development infrastructure (Appendix B Nevada State Engineer's Ruling 5712, p. 19). The proposed project and CSI development are located in the Mojave Desert where long-term sustainable water use will be crucial in protecting human health and the environment. It is therefore important that decision makers and the public know the source of the water supply and are confident that these supplies will be used in the most appropriate and effective manner.

Comment No. 1-7

Recommendations:
The FEIS should describe how CSI will maximize efficient use of this inter-basin water transfer. For example, the FEIS should provide specific information on proposed CSI development water use efficiency, reuse, and conservation measures. Describe the anticipated level of water use of CSI development households (e.g., amount of gallons per capita per day), water reuse, and water conservation measures in comparison with other southern Nevada developments. We recommend CSI pursue aggressive water use efficiency and conservation measures to ensure the most effective and appropriate use of scarce water supplies.

Comment No. 1-8

The FEIS should also provide specific information on existing CSI certified or permitted water rights in Clark and Lincoln Counties. We recommend the FEIS include information such as the source of the proposed water supply, the long-term sustainability of this source, amount of water permitted for appropriation, and the allowed points of diversion.

Describe water use efficiency, conservation, and reuse management measures applicable to all water supply users. There are many existing and pending water right applications for the carbonate-rock aquifer (e.g., Table 4-7, p. 4-59). EPA strongly supports the implementation of water management tools to maximize water conservation and water use efficiencies – key components of supply and demand management. Innovative and aggressive supply and demand management is essential in assuring a long-term, sustainable balance between available water supplies, demand, and ecosystem and public health. Efforts to improve water supply system flexibility, conservation, and water use efficiencies are even more urgent given the projected growth in Clark and Lincoln Counties, the adverse effects of the current multi-year drought, and the potential adverse effects of climate change on scarce water supplies.

Comment No. 1-9

Recommendations:
We recommend the FEIS include a detailed tool kit of supply and demand management measures in an appendix. The list of tools could serve as a resource for CSI, as well as other users of the carbonate-rock aquifer, the Nevada State Engineer, and water right applicants who wish to maximize the effective use of scarce water supplies. The appendix should describe

Response to Comment No. 1-6

The CSI development is a separate action from the Kane Springs Groundwater Development Project and would occur in the absence of the Proposed Action. Currently, 35,096 AFY of groundwater has been permitted within the Coyote Springs Basin for a variety of uses. Groundwater from Kane Springs Valley will be used to supplement these uses which include municipal, agricultural and industrial applications. In the interest of understanding reasonable foreseeable future actions in the region of influence, the Final EIS contains an expanded discussion of CSI proposed actions in Clark and Lincoln County (Chapter 4.20.3.3.2). See also – Coyote Springs Investment Planned Development Project Draft EIS issued October 5, 2007.

Response to Comment No. 1-7

The CSI development is a separate action from the Kane Springs Groundwater Development Project and would occur in the absence of the Proposed Action. An expanded discussion of CSI proposed actions has been added to Chapter 4.20.3.3.2. It is the responsibility of the Nevada Division of Water Resources to administer and enforce Nevada water law, including appropriation of groundwater and surface water in the state of Nevada. The allocation of water supplies to the LCWD and CSI is under the jurisdiction of the Nevada State Engineer. The distribution, use, and potential reuse and conservation of water in the CSI development would be governed by a General Improvement District, or other regulatory agency tasked with overseeing these resources.

Response to Comment No. 1-8

The CSI development is a separate action from the Kane Springs Groundwater Development Project. The CSI development would occur in the absence of the Proposed Action. An expanded discussion of CSI proposed actions has been added to Chapter 4.20.3.3.2. Information on the source of the proposed water supply, amount of water permitted, and the points of diversion for the CSI project can be found in the Coyote Springs Investment Planned Development Project Draft EIS issued October 5, 2007.

the full range of tools available to water users to improve water quality and reuse, maximize water use efficiencies, balance supply and demand, and avoid and minimize adverse effects to third parties.

Comment No. 1-9 (Continued)

Efficient water use can be enhanced through development, infrastructure, and drinking water policies. We recommend the FEIS discuss the linkages between water use and these factors and describe potential mechanisms to support water use efficiencies. We recommend the FEIS provide a short discussion of who could best implement the identified mechanisms. The following reports may be of assistance as a starting point for the evaluation:

- *Growing Toward More Efficient Water Use: Linking Development, Infrastructure, and Drinking Water Policies*. EPA Publication 230-R-06-001, EPA National Service Center for Environmental Publications, (800) 490-9198 or nscep@bps-lmit.com.
- *Protecting Water Resources with Higher-Density Development*. EPA publication 231-R-06-001. EPA National Service Center for Environmental Publications, (800) 490-9198 or nscep@bps-lmit.com.

Long-Term Availability of Water Supplies

Provide a discussion of the relationship between water supply and power availability. Water use and power are inextricably linked where water use, from source and conveyance to wastewater treatment, requires energy. Given power shortages and water scarcity across the West, it is important that policy makers, water and energy experts, and the public understand and consider these links.

Comment No. 1-10

Recommendation:
We recommend the FEIS discuss and evaluate the relationship between water supply and power requirements. The FEIS should include a description of the projected power needs of the Kane Springs Valley Groundwater Development Project, associated CSI development, and the long-term availability of this power.

Describe back-up water supplies. The estimated range of perennial yield of the Kane Springs Valley Hydrographic Basin is great--500 acre-feet per year (afy) to 5,000 afy (pps. 4-6 to 4-7). Other uncertainties include the inflow and outflow with other hydrographic basins; effects of changing climate and drought; and the need to reduce or stop groundwater withdrawals pursuant to the Stipulated Agreement and Memorandum of Agreement to prevent adverse effects on the Moapa dace and Muddy River Springs (Appendix A). Therefore, the availability of alternative water sources will be necessary to ensure a reliable supply.

Comment No. 1-11

Recommendation:
We recommend the FEIS describe back-up water sources which can be used if actual groundwater yield is 500 afy versus 5,000 afy, or if Stipulated Agreement "trigger points" requiring reduction or cessation of pumping are reached.

Response to Comment No. 1-9

The Proposed Action is a request for a right-of-way from the BLM. It is the responsibility of the Nevada Division of Water Resources to administer and enforce Nevada water law, including appropriation of groundwater and surface water in the state of Nevada. The allocation of water supplies to the LCWD and CSI is under the jurisdiction of the Nevada State Engineer. The distribution, use, and potential reuse of water in the CSI development would be governed by a General Improvement District, or other regulatory agency tasked with overseeing these resources. In addition, the Nevada State Engineer in ruling 5712 noted that "Testimony was provided that indicated conservation measures are in place for the planned development (CSI) similar to traditional development measures associated with development in southern Nevada that have been adopted and imposed, and there is no evidence that the appropriation of water from Kane Springs Valley will damage the environment of the Valley.

Response to Comment No. 1-10

Projected annual power needs of the Kane Springs Valley Groundwater Development Project are estimated at 2,000 MWh or .22 MW for wells pumping 1,000 afy and 10,000 MWh or 1.1 MW for wells pumping 5,000 afy. This information has been added to Chapter 4.18. The CSI development is a separate action from the Proposed Action. The CSI Development would occur in the absence of the Proposed Action. However, in the interest of understanding reasonable, foreseeable future actions in the region of influence, the Final EIS contains an expanded discussion of CSI's proposed actions in Clark and Lincoln County. This information has been added to Chapter 4.20.3.3.2.

Response to Comment No. 1-11

It is the responsibility of the Nevada Division of Water Resources to administer and enforce Nevada water law, including appropriation of groundwater and surface water in the state of Nevada. The allocation of water supplies to the LCWD and CSI is under the jurisdiction of the Nevada State Engineer. The identification of backup water sources to be used if the actual groundwater yield for the KSV project is 500 afy versus 5,000 afy is out of the scope of this EIS and is the responsibility of the LCWD or applicable water purveyor. More information can be referred to in Chapter 1.4.3 – Public Controversy.

State the source of water for the projected delivery of 5,000 afy. The DEIS states that this project will construct facilities and infrastructure to pump and convey up to 5,000 afy for delivery to the northern portion of Coyote Spring Valley (p. ES-1). The Nevada State Engineer's Ruling 5712 permitted 1,000 afy for the four LCWD applications filed for water right appropriations from the Kane Springs Valley Hydrographic Basin. In this ruling the State Engineer concludes that to permit the appropriation of water in an amount greater than permitted under this ruling would conflict with existing rights and threaten to prove detrimental to the public interest (Appendix B, Ruling 5712, p. 22).

Comment No. 1-12

Recommendation:
We recommend the FEIS describe the source of water for the remaining 4,000 afy to be delivered by the proposed project.

Climate Change

Provide a short discussion of climate change and its potential effects on the proposed action and related CSI development. A number of studies specific to the Colorado River Basin, which includes the project area, indicate the potential for significant environmental impacts as a result of changing temperatures and precipitation.[1] A more extensive discussion of climate change and its potential effects on the proposed groundwater development action would better serve decision-making on this project, as well as long-term, regional water management planning and planned development.

Comment No. 1-13

Recommendation:
We recommend the FEIS include a separate discussion of climate change and its potential effects on the proposed groundwater development project and associated CSI development. We recommend this discussion provide a short summary of climate change studies specific to the project area and Colorado River Basin, including their findings on potential environmental and water supply effects and their recommendations for addressing these effects. For example, if there is a projected 10-20% reduction in precipitation for the Colorado River Basin[2], we recommend the FEIS describe the potential effect on this and other groundwater development projects, projected quantity and sustainable groundwater withdrawal from the carbonate-rock aquifer, and existing and future urban development.

General Comments

Provide a summary of the results of Section 7 Endangered Species Act consultation. The DEIS states that a Biological Assessment (BA) will be prepared for the proposed Action and submitted to the US FWS pursuant to Section 7 of the Endangered Species Act (ESA).

Response to Comment No. 1-12

The Nevada State Engineer has permitted 1,000 afy in the Kane Springs Valley Hydrographic Basin to LCWD. LCWD submitted 4 additional water rights applications to the Nevada State Engineer in April 2006. Additional groundwater studies are ongoing in the area to support the request. The amount and timing of any future water allocations would be speculative at this time. However, it is the intent of the LCWD to develop and convey any and all permitted water rights approved by the State Engineer to their service territory, subject to all regulation and stipulations imposed by the State Engineer or other permitting agencies.

Response to Comment No. 1-13

The BLM acknowledges that the potential effect of climate change on water availability and future use is a dynamic and controversial topic. In the context of the Proposed Action, it is beyond the scope of this EIS. However, in the interest of understanding past, present, and reasonable foreseeable natural events that are likely to occur in the region of influence, a discussion of climate change has been added to Section 4.20.3.1 of the Cumulative Impacts section in the FEIS.

Comment No. 1-14

Recommendation:
We recommend the FEIS provide a summary of the results of the Section 7 ESA consultations. The BA and associated Biological Opinion or Decision Memo from the US FWS should be included in an appendix.

Response to Comment No. 1-14

Chapter 4.5.1.1 of the FEIS has been updated to include the effect determinations for threatened and endangered species from the Section 7 ESA consultations (Biological Assessment). A copy of the Biological Opinion for the Proposed Action will be included as part of the Record of Decision because it will be issued after the FEIS (BO release expected no later than February 10, 2008).

JIM GIBBONS
Governor

STATE OF NEVADA
DEPARTMENT OF WILDLIFE
1100 Valley Road
Reno, Nevada 89512
(775) 688-1500 • Fax (775) 688-1595

KENNETH E. MAYER
Director

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Deputy Director

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4747 Vegas Drive
Las Vegas, Nevada 89108
(702) 486-5127 · Fax (702) 486-5133

August 3, 2007

NDOW-SR# 07-319

Ms. Gosia Sylwestrzak
Nevada State Clearinghouse
209 East Musser Street, Room 200
Carson City, NV 89701-4298

SAI #: E2007-418
Due Date: August 13, 2007
Project: Draft Environmental Impact Statement (DEIS) for Kane Springs Valley Groundwater Development

Dear Ms. Sylwestrzak:

Comment No. 2.1

Thank you for notification of the subject DEIS. As you know the Nevada Department of Wildlife is a cooperating agency to the NEPA process associated with the proposed project. We have found that the vast majority of our thoughts conveyed during working group meetings with the project proponent, as well as our review of an earlier draft of the EIS have been considered and incorporated where applicable. We look forward to continuing cooperation in this productive process.

Response to Comment No. 2-1
The BLM appreciates NDOW's participation as a cooperation agency.

Sincerely,

D. Bradford Hardenbrook
Supervisory Habitat Biologist

CS/DBH:dbh

cc: NDOW, Files

RECEIVED
AUG 0 9 2007
DEPARTMENT OF ADMINISTRATION
OFFICE OF THE DIRECTOR
BUDGET AND PLANNING DIVISION

8/1

Rebecca Palmer

From: Clearinghouse [clearinghouse@budget.state.nv.us]
Sent: Monday, June 25, 2007 10:36 AM
To: Rebecca Palmer
Subject: E2007-418 DEIS for Kane Springs Valley Groundwater Development - Nevada Groundwater Projects Office

NEVADA STATE CLEARINGHOUSE
Department of Administration, Budget and Planning Division
209 East Musser Street, Room 200, Carson City, Nevada 89701-4298
(775) 684-0209 Fax (775) 684-0260
DATE: June 25, 2007

State Historic Preservation Office

Nevada SAI # E2007-418
Project: DEIS for Kane Springs Valley Groundwater Development

Follow the link below to download an Adobe PDF document concerning the above-mentioned project for your review and comment.

http://www.blm.gov/nv/st/en/prog/planning/groundwater_projects/ksv_project/issue_draft_eis_for.html

Please evaluate it with respect to its effect on your plans and programs; the importance of its contribution to state and/or local areawide goals and objectives; and its accord with any applicable laws, orders or regulations with which you are familiar.

Please submit your comments no later than Monday, August 13, 2007.

Use the space below for short comments. If significant comments are provided, please use agency letterhead and include the Nevada SAI number and comment due date for our reference. Questions? Gosia Sylwestrzak, (775) 684-0209 or mailto:clearinghouse@budget.state.nv.us.

____No comment on this project ____Proposal supported as written

AGENCY COMMENTS:

Signature: Rebecca L Palmer Date: 7/23/07

Comment No. 3.1

The SHPO reviewed the EIS for the subject undertaking. The SHPO has no record of receiving the cultural resources inventory report and the Bureau of Land Management's determination of eligibility and effect for review. If you have any questions concerning this correspondence, please contact me by phone at (775) 684-3443 or by E-mail at rlpalmer@clan.lib.nv.us.

Response to Comment No. 3-1

The BLM will continue to consult with the Nevada SHPO as part of the Section 106 process. The cultural resources inventory report will be submitted to the Nevada SHPO in early 2008.

"Josh DeGayner"
<jdegayner@mvdsl.com>
08/23/2007 10:58 AM

To <nvgwprojects@blm.gov>, <penny_woods@nv.blm.gov>
cc
bcc
Subject Moapa Band of Paiutes Kane Springs Groundwater Development Comment

Penny –

Hi. Here are the comments regarding water resources. I'm sorry they are late! This document also lacsk some citations, I didn't have time to read the actual CH2MHILL report but I do refer to some of their findings directly from the DEIS. I hope the lack of citations does not cause any problems, but there are studies which back up the main points. I have spoken with Marty Mifflin, the Tribe's hydrologist and from what I understand he agrees with my perspective on the issue. Exhibit 54, which I refer to but do not have the actual document was presented to the state engineer. My understanding is that this study shows that pumping from coyote springs basin has a 1:1 impact on spring flow (1 gallon removed from the carbonate aquifer results in 1 gallon less discharge from the spring area). Anyways, sorry this document is not more complete, but the main purpose at this point is to bring these issues to the table.

Josh DeGayner
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Moapa Band of Paiutes Department of Water Resources Comment on Kane Springs Valley Groundwater Development Project.doc

Moapa Band of Paiutes Department of Water Quality Comment on Kane Springs Valley Groundwater Development Project

The Moapa Band of Paiutes would like to express their concern over increased pumping in the Kane Springs Valley. Since time immemorial the Moapa Band of Paiutes have lived near the Muddy River and depended on the spring discharge for their livelihood. Many cultural plants and areas are sustained by the springs which are fed by the 13 hydrographic basins that make up this system. To this day the Moapa Band of Paiutes lease a senior water right for surface water diversions on the Muddy River. The Tribe's federally reserved water rights are pending. This water is used to irrigate the tribal farm. The cumulative impacts from pumping in Coyote Springs Valley, Kane Springs Valley, and other hydrographic basins could decrease Muddy River Flows and make this water right unusable. The effects of decreasing spring flow in the Muddy River Springs Area could also further endanger the Moapa Dace, and degrade the riparian habitat that many native species depend on.

Kane Springs Valley is considered part of the White River Flow System. This hydrologic system has been the focus of several groundwater studies. The Muddy River Springs area is thought to discharge about 36,000 AFY. These springs are fed by the hydrographic basins above the Coyote Springs Valley, including Kane Springs Valley.

There seems to be some disagreement over the quantity of water that moves via interbasin transfer from Kane Springs Valley to Coyote Springs Valley. Older estimates were as small as 35 AFY (USGS 1971). Newer studies suggest total recharge to the

Kane Springs Valley is about 18,000 AFY, while interbasin transfer to Coyote Springs Valley is about 16,000 AFY (CH2MHILL 2006). The study by CH2MHILL estimates that 5,000 AFY of the total recharge is local recharge (infiltration from precipitation). In section 4-9 of the DEIS the claim is made that, "South of the fault zone, in Coyote Spring Valley, the Kane Springs Wash fault zone would likely impede the propagation of the cone of depression migrating south towards the Muddy Springs area.". It seems that the movement of 16,000 AFY between Kane Springs Valley and Coyote Springs Valley demonstrates that there is a very effective hydrologic connection between the two valleys. Any pumping in Kane Springs would change the hydraulic gradient and decrease the amount of interbasin transfer in the system.

Based on Nevada State Engineer Ruling 5712 in February 2007, less than 500 AFY is considered the Kane Springs Valley perennial yield. LCWD has currently been permitted 1000 AFY and has submitted applications for an additional 17,380.

It is the opinion of the Tribe that groundwater in the White River Flow System can not be pumped without impacting flow rates to some extent at the Muddy River Springs area. Recent studies have shown that there is near to a one to one impact in the Springs area from pumping other hydrographic basins that ultimately feed the springs. It doesn't matter if the perennial yield of Kane Springs Valley is 500 AFY or 5,000 AFY. After this water enters the carbonate system, based on the hydraulic gradient, it will reach the spring system at some point in time, unless it is removed by pumping. Water budget balance studies have been done on the White River Flow System that suggest the

majority of the recharge from these 13 basins is ultimately discharged in the Muddy River Springs Area. The water that is not discharged passed under the springs, but the springs are higher in elevation and will be affected first.

The MOA between SNWA, FWS, CSI, and the Moapa Band of Paiutes sets certain trigger levels and if these levels are reached the parties will decrease or cease pumping at certain well locations. The first trigger level is 3.0 cfs. This is the same trigger level agreed upon between LCWD and FWS. The parties in this MOA are senior users to LCWD's recently acquired groundwater rights. The cumulative impact of other parties, such as LCWD pumping will cause a greater impact on the springs, and cause the trigger levels to be reached sooner. This will cause harm to senior water users by limiting the amount of water they can divert.

Comment No. 4.1

Table 3-6 in the DEIS shows that the Muddy River Springs area and Coyote Springs Valley are in a water deficit situation, and are designated basins by the Nevada State Engineer. Because these basins are already in a water deficit situation it would be prudent to limit pumping from basins such as Kane Springs Valley, which recharge and feed the Muddy River Springs Area.

Response to Comment No. 4-1
Table 3-6 has been revised in the Final EIS.

There seems to be some error on Table 3-6. Order No. 1169 required pumping at least 50% of the water rights permitted in Coyote Spring Valley hydrographic basin. Order No. 1169 states that the State Engineer has previously granted groundwater permits for 16,300 AFY in Coyote Springs Valley. Order No. 1169 also holds all other

applications in abeyance until the pump test and subsequent study has been completed.

Table 3-6 shows there being 35,096 AFY currently permitted in Coyote Springs Valley. What is the source of this discrepancy?

Delaine Spilsbury
PO Box 1055
McGill, NV 89318
Phone/Fax 775-235-7557

August 20, 2007

TO: BLM/Groundwater Projects Office
Penny Woods

FROM: Delaine Spilsbury, Ely Shoshone Tribe, Director-Bristlecone Alliance

REF: Kane Springs Valley DEIS

I am protesting the use of scientific studies and data that were prepared for project proponent, Vidler Water Company.

Comment No. 5.1

Is this not showing partiality to the proponent? Is it not flawed thinking? And why is the BLM permitting the wolf to protect the chickens? As I understand, the BLM mission is stewardship of public lands. Obviously collusion with the proponents can be viewed as counter to that mission.

6.0 - References: CH2MHILL. 2006:
Hydrologic Assessment of Kane Springs Valley Hydrologic Area:
Hydrologic Framework, Hydrologic Conceptual Model and Impact Analysis prepared by the Project proponent, Vidler Water Company and Lincoln County Water District was presented to the Office of the Nevada State Engineer.

And didn't the Nevada State Engineer in his ruling on water rights applications reject the Assessment on Kane Springs?

Thank you,

Response to Comment No. 5-1

Allocation of groundwater within the Kane Springs Valley Hydrographic Basin is under jurisdiction of the Nevada State Engineer. A summary of the Nevada State Engineers' ruling on the appropriation of groundwater for this project is provided in section 3.3.3.3.1 of the FEIS. LCWD conducted groundwater studies to support their water rights application. An interdisciplinary team of resource specialists selected by the BLM and its Cooperating Agencies, reviewed the basin-specific data prepared by the Applicant, in addition to other regional water resources data to analyze the potential effect of implementation of the Proposed Action.

To: BLM/Groundwater Projects Office
Penny Woods
From: Richard Spilsbury
Ref: Kane Springs Valley DEIS

Comment No. 5.2

I am protesting that the draft EIS does not analyze the cumulative effects on the carbonate aquifers in effected counties. Water from carbonate aquifers must be moving, or otherwise it would be salt water. If it is moving, it's feeding springs somewhere. Draining carbonate aquifers will eventually effect springs. It doesn't take a hydrologist to figure this out. Just because you don't study this, doesn't mean it won't happen.

Response to Comment No. 5-2
Cumulative impacts are discussed in Chapter 4.20

Thank you,

Richard A. Spilsbury
PO Box 1055
McGill, NV 89318

To: BLM/Groundwater Projects Office
Penny Woods
From: Richard Spilsbury
Ref: Kane Springs Valley DEIS

Comment No. 5.3

I am protesting the fact that the draft EIS does not study a full range of alternatives.

1. Conservation. Pat Mullroy herself wrote the forward to the NRDC publication "In Hot Water," which claims that through conservation, cities can grow without increasing water use.
2. Desalination. Water can be desalinated offshore and traded for a bigger allotment of the Colorado River.
3. Responsible Growth. Cancer-like growth of Southern Nevada should not be supplemented by stunted growth of Rural Nevada.
4. Development of water saving crops. Southern Nevada could financially support the development of crops that use less water in exchange for a bigger allotment of Colorado River water.
5. Conservation in other areas. Southern Nevada could financially support conservation in the Colorado River Basin in exchange for a bigger allotment of the Colorado River.

There are a number of alternatives to doing the most environmentally damaging thing first. Why the hell are we not even considering them?

Thank you,

Richard A. Spilsbury
PO Box 1055
McGill, NV 89318

Response to Comment No. 5-3

This EIS is in response to a Lincoln County Water District request for a right of way across federal lands managed by the BLM. The Proposed Action is the construction and operation of the Kane Springs Valley Groundwater Development Project, within a congressionally designated utility corridor. Alternatives considered included alternative infrastructure locations, and the no action alternative (denying the right of way application). Chapter 2.4 explains the criteria by which alternatives are considered.

To: BLM/Groundwater Projects Office
Penny Woods
From: Richard Spilsbury
Ref: Kane Springs Valley DEIS

Comment No. 5.4

I am protesting the fact that the draft EIS is full of b*llsh!t. That's right. The (un)scientific studies and data came directly from the people who want to take the water. None of these "studies" has been appropriately peer reviewed. In fact, the Nevada State Engineer has rejected them.

We need honest, thorough data. We don't want the fox's lies that the hen-house is safe.

Thank you,

Richard A. Spilsbury
PO Box 1055
McGill, NV 89318

Response to Comment No. 5-4

The data analyzed for this EIS included regional studies conducted by federal and state agencies, private developers and their consultants, more localized studies conducted by the Applicant and site specific biological and cultural surveys conducted by the BLM for the Proposed Action. The BLM acknowledges that the Applicant and other entities continue to expand the body of knowledge regarding groundwater development in the project area and regional aquifer system to support future water rights applications. That data will be used by the Nevada State Engineer in its decision to approve or deny the application. Existing and permitted water rights will be subject to the terms and conditions directed by the Nevada State Engineer. Construction and operation of infrastructure associated with the Proposed Action on federal lands will be subject to the terms and conditions directed by the BLM as part of the right of way grant. Uncertainties related to this project are discussed in Incomplete and Unavailable Information section at the beginning of Chapter 4.

To: BLM/Groundwater Projects Office
Penny Woods
From: Richard Spilsbury
Ref: Kane Springs Valley DEIS

Comment No. 5.5

I am protesting the fact that the draft EIS is not doing a full analysis of the impacts of the proposed pipeline and wells. Monitoring the effect of the pipeline without monitoring the effect of the mining and exportation of water is like monitoring the bullet without monitoring the effect of the bullet wound. Won't this effect public lands? Of course. This is dereliction of duty.

Apparently, the Department of the Interior has decided that the BLM doesn't have a purpose – other than to appear bureaucratic. Their next step will be cutbacks – and when the BLM won't stand up for us, Americans won't care. In the past, the BLM has promised to analyze all of the effects. Keep your promise!

Thank you,

Richard A. Spilsbury
PO Box 1055
McGill, NV 89318

Response to Comment No. 5-5

The BLM uses a comprehensive process to determine whether rights of way on BLM-managed lands should be granted. This process includes compliance with the requirements of the National Environmental Policy Act and the Council for Environmental Quality regulations, BLM planning regulations, manuals and handbooks, and applicable policy documents. While BLM does not have the authority over pumping and exportation of water this EIS discloses impacts from proposed alternatives on public lands.

To: BLM/Groundwater Projects Office
Penny Woods
From: Richard Spilsbury
Ref: Kane Springs Valley DEIS

Comment No. 5.6

I am protesting the BLM's response to public comment. Listing how many comments there were on each subject is the very minimum anyone could possibly do without totally ignoring us.

I've received no replies to any of my comments.

I've never heard of any of my comments being responded to.

In fact, I've never heard of anyone's comments recently being responded to.

At this rate, sooner or later, the American public will start to think that the BLM is just a rubber stamp for big business. When that happens, we won't want our tax money wasted on the BLM.

Thank you,

Richard A. Spilsbury
PO Box 1055
McGill, NV 89318

Response to Comment No. 5-6

As explained in Chapter 1.5 - Scoping, the BLM considered comments received through public scoping when developing the scope of issues and alternatives to be analyzed in the Draft EIS. All comments received during scoping were systematically reviewed by an interdisciplinary team of resource specialists from various BLM offices, representatives from cooperating agencies, and BLM's EIS consultants. See also response to Comment 5-5.

CENTER *for* BIOLOGICAL DIVERSITY

Via Electronic Mail and U.S. Mail

August 20, 2007

Penny Woods, Project Manager
Bureau of Land Management, Nevada State Office
Groundwater Projects Office
P.O. Box 12000
Reno, NV 89520
Fax: 775-861-6689
nvgwprojects@blm.gov

Re: Kane Springs Valley Groundwater Development Project, Draft Environmental Impact Statement

Dear Ms. Woods,

The Center for Biological Diversity ("Center") submits these comments on the Draft Environmental Impact Statement ("DEIS") for the Kane Springs Valley Groundwater Development Project ("project"). The Center is a non-profit environmental organization dedicated to the protection of native species and their habitats through science, policy, and environmental law. The Center has over 35,000 members throughout the western United States, including many members who live and recreate in Nevada. In light of the deficiencies in the DEIS discussed below, the Center urges the BLM to revise and re-circulate the DEIS before moving forward with project approval.

As detailed below, the DEIS fails to meet the requirements of the National Environmental Policy Act ("NEPA"). In addition, the BLM's review of this project fails to meet its obligations under the FLPMA and the Endangered Species Act. These comments focus largely on BLM's failure to adequately identify and analyze the project's potential impacts to rare, threatened and endangered species or to examine any alternative that would protect these imperiled resources. In addition, the DEIS is invalid because, among is other shortcomings, it: fails to provide a complete and accurate environmental baseline from which the impacts of the action can be measured; fails to consider a reasonable range of alternatives; fails to undertake a meaningful cumulative impacts analysis; fails to provide adequate data on the likely impacts to biological resources of these public lands including rare, threatened and endangered species; fails to adequately protect water resources on public lands; and fails adequately identify and analyze the impacts of global warming on the resources or this project's contribution to global warming. BLM has also failed to protect reserved Federal water rights on public lands and to prioritize the use of public water resources by native wildlife and riparian dependent species.

Environmental Baseline: The description of the affected environment or environmental baseline fails to accurately identify current status of all of the of the rare, sensitive, threatened

Tucson • Phoenix • San Francisco • San Diego • Los Angeles • Joshua Tree • Silver City • Portland • Washington, DC

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Comment No. 6.1

and endangered species in the project area that may be directly or indirectly affected by the proposed project as well as the cumulative impacts to such species. For example, BLM only surveyed for plants in the "project area" (DEIS at 3-34). However, the project will draw down ground water in a large area and will clearly affect plants outside of the "project area." This inappropriate focus on the area of surface disturbance and construction, and consequent failure to take a hard look at the impacts of the water extraction project, pervades the DEIS. See DEIS at 3-29 to 3-44. BLM's explanation that the DEIS uses three different "areas" does little to clarify the situation. DEIS 3-1 (describing project area, study area or ROI, and Area of Potential Effect). The definition of the so-called "Region of Influence (ROI) varies depending on the resource being analyzed and the predicted locations of direct and indirect impacts from the Proposed Action or Alternatives." DEIS 3-1. This methodology is circular and leads the agency to examine only the most obvious and already well-documented likely impacts of the proposed action. It cannot be used to justify ignoring impacts in areas where the agency has not pre-determined that they will occur. Unfortunately this appears to be an attempt to shore up BLM's decision to unlawfully narrow its examination of the far-reaching impacts of the proposed action.

NEPA requires BLM to "describe the environment of the areas to be affected or created by the alternatives under consideration." 49 C.F.R. § 1502.15. In Half Moon Bay Fisherman's Marketing Ass'n v. Carlucci, 857 F.2d 505, 510 (9th Cir. 1988), the Ninth Circuit stated that "without establishing . . . baseline conditions . . . there is simply no way to determine what effect [an action] will have on the environment, and consequently, no way to comply with NEPA." FLPMA also requires that BLM prepare and maintain a current inventory of all public lands and their resources. 43 U.S.C. § 1711(a). The DEIS and BLM's decision must be based on an adequate inventory of the resources of the public lands that may be affected by the proposed project including, but not limited to: special status, rare, and sensitive species; water resources including both groundwater and surface water resources; and riparian vegetation communities. Without a clear understanding of the current status of the affected public lands BLM cannot comply with NEPA or FLPMA. Unfortunately, the DEIS clearly shows that BLM has not adequately inventoried the resources of the public lands that may be affected by this proposed action, opting instead to focus primarily on the construction of the well field and pipelines. While these areas are important, this massive groundwater extraction project will impact a far greater area and many other resources for which additional baseline data should have been provided.

Response to Comment No. 6-1

Chapters 3.4.4 and 3.5.5 of the FEIS describe the environmental baseline for special status plant species; Chapters 3.5.2 and 3.5.3 describe the environmental baseline for special status wildlife species. Direct and indirect affects of the project on special status plants and wildlife are described in Chapters 4.4.1.2, 4.4.1.3, 4.5.1.1, and 4.5.1.2. Cumulative impacts are described in Chapters 4.20.4.3 and 4.20.4.4. The project area, Region of Influence, and cumulative resource analysis areas for special status species are based on the anticipated impacts on surface water and groundwater in Chapters 4.3.1.1, 4.3.1.2, 4.3.1.3, 4.3.1.4, and 4.3.1.5. Groundwater drawdown would occur in the deep carbonate aquifer (greater than 900 feet below ground surface). Therefore, there would be no impact on vegetation. The baseline condition of the affected environment is described in Chapter 3. Any potential impact of pumping of the Kane Springs Valley Groundwater Development project on the Muddy River Springs area is mitigated through the stipulated agreement between the LCWD and USFWS.

Comment No. 6.2

Range of Alternatives: An EIS must include a reasonable range of alternatives including alternatives that will avoid or minimize impacts to rare, sensitive and special status species. The DEIS failed to include any alternative that would lessen the impacts on these species or support the recovery of these species in the whole project area in order to fulfill BLM's obligations under the Endangered Species Act ("ESA") to promote conservation of listed species and work towards recovery of these species. See ESA § 7(a)(1).

NEPA requires that, in preparing and EIS, each agency "[r]igorously explore and objectively evaluate all reasonable alternatives" to the proposed action. 40 C.F.R. § 1502.14. The "existence of a viable but unexamined alternative renders and [EIS] inadequate." Idaho Conservation League v. Mumma, 956 F.2d 1508, 1519 (9th Cir. 1992). See Resources Ltd., Inc.

Response to Comment No. 6-2

Chapters 1.4.3 and 2.0 address alternatives development. The LCWD is requesting a right of way across federal lands managed by the BLM. The Proposed Action is the construction and operation of the Kane Springs Valley Groundwater Development Project, within a designated utility corridor. Alternatives considered included alternative infrastructure locations, and the no action alternative (denying the right of way application). The Proposed Action deviates from a congressionally approved utility corridor as a means to minimize impacts to vegetation, soils and desert tortoise habitat. BLM analyzed an alternative whereby the alignment stayed within the congressionally designated corridor as Alternative 1. Desert tortoise and rare plant surveys were conducted within the area of direct effects (construction right of way).

Comment No. 6.2 (Cont.)

v. Robertson, 35 F.3d 1300, 1307 (9th Cir. 1993). An alternative is not rendered unviable if it is outside the jurisdiction of the lead agency. 40 C.F.R. § 1502.14(c). Quite to the contrary, analysis of "reasonable alternatives not within the jurisdiction of the lead agency" is required. Id.

BLM simply assumes that the proposed groundwater pumping will go forward with or without the proposed action. This undermines BLM's examination of the full impacts of the proposed action and a reasonable range of alternatives. In fact, the DEIS does not analyze any alternative that would have fewer impacts on surface water resources, fish and other riparian dependent species, or on the desert tortoise and its occupied habitat including critical habitat. For example, BLM fails to examine any alternative sites or a project that would extract less groundwater.

Comment No. 6.3

Biological Resources: The DEIS fails to adequately identify and analyze direct, indirect, and cumulative impacts to the desert tortoise and its critical habitat. The DEIS provides only cursory information about the current status of the desert tortoise in this area and provides no meaningful evaluation of how the permanent and temporary loss of significant occupied habitat—including critical habitat—will impact the survival and recovery of the species in the immediate project area or how changes in surface water resources and hydrology may destroy or adversely modify critical habitat and inhibit recovery of the species.

In addition, the DEIS fails to look at secondary or indirect impacts of the project such as increased traffic and the presence of predators such as ravens attracted by trash and other consequences of increased human disturbance in this area. The DEIS states that workers will be required to remove garbage daily (DEIS at 4-17) as though this were the beginning and end of the issue. In fact, littering and open trash receptacles are already prohibited in many areas but this has not stopped the accumulation of trash and garbage that attracts ravens. Unfortunately, increased human presence leads to increased trash and BLM cannot simply close its eyes to this fact and wish it away. Along with increased perching opportunities, human trash is highly likely to increase ravens in the area and thereby cause impacts to the desert tortoise population. In addition, there is no provision for so-called "tortoise fencing" along the roads where heavier traffic during construction and operation will lead to additional roadkill both directly killing desert tortoises and the additional roadkill in turn will attract additional predators including ravens.

The short- and long-term impacts of groundwater pumping on fish and riparian vegetation communities is also inadequately identified and analyzed in the DEIS. For example, BLM fails to identify the full range of likely impacts to the Moapa dace and other riparian dependent species in the Muddy River ecosystem. See DEIS at 4-18. Instead, BLM attempts to skip the steps required by NEPA—identification and analysis of impacts—and jump ahead to simply assume that what ever the impacts may be they will all be adequately mitigated by the measures outlined in the Stipulated Agreement between USFWS and LCWD regarding senior water rights. See DEIS at 1-6. While that agreement is important, it does not in anyway lessen BLM's duty to comply with NEPA and take a "hard look" at the impacts of the proposed project. More importantly, that narrowly tailored agreement cannot and does not provide all of the mitigation necessary for this project's impacts to biological resources in general or the Moapa

Response to Comment No. 6-2 Applicant proposed environmental protection measures to minimize construction related impacts are incorporated in the project design and outlined in Appendix C (Standard Construction and Operation Procedures). The BLM would monitor the effectiveness of approved mitigation measures (i.e. desert tortoise fencing, installation of perch inhibitors, and revegetation). A Biological Assessment was prepared as part of Section 7 consultation under the ESA. Additional mitigation measures may be required by the USFWS through Section 7 or Section 10 consultation. The Applicant would also be required to comply with stipulations mandated by the Nevada State Engineer for allocation of water supplies, and the stipulated agreement between the LCWD and USFWS for potential impacts of groundwater pumping on the Muddy River Springs area.

Response to Comment No. 6-3
The BLM is consulting with the USFWS through the ESA Section 7 process. A Biological Assessment has been prepared for the project. The USFWS may request additional terms and conditions or mitigation measures with the release of the BO (anticipated by February 10, 2008). Further description of the analysis has been added to sections 4.5.1.1.2 Moapa Dace, 4.5.1.1.3 Southwestern willow flycatcher, 4.5.1.1.4 Yellow-billed Cuckoo, and 4.5.1.2.4 Fisheries.

dace and the Muddy River ecosystem in particular. For example, the project will also have growth inducing impacts, which will in turn increase pressures on groundwater and other resources that will both directly and indirectly affect all of the biological resources of the area.

Comment No. 6.4

Surface Waters: The DEIS also failed to adequately assess the impacts to perennial, seasonal, and ephemeral surface water resources including, but not limited to, springs, seeps, creeks, and rivers. In the arid Great Basin, the loss of even a small amount of surface waters can be devastating to fish, plants, and riparian vegetation communities and may result in the collapse of entire ecosystems that depend on these resources. BLM completely ignores the fragile state of the ecosystem in this area. Indeed, BLM does not even acknowledge the impacts of the current drought or the cumulative impacts to water resources that are the result.

Comment No. 6.5

Cumulative Impacts: The DEIS does little more than list many of the projects that will likely have cumulative impacts on the same resources as the proposed project. The DEIS fails to adequately identify or analyze the cumulative impacts these projects will have on the fragile biological resources of these public lands. All of these projects will negatively affect the biological resources of this area through, inter alia, increased traffic and noise, increased fragmentation of wildlife habitat, increased night lighting, increased loss of surface water resources, and increased trash which attracts predators such as ravens. The long-term and cumulative impacts to the ecosystem as a whole, desert tortoise survival, and critical habitat due to the proposed extraction of groundwater should also have been thoroughly examined but were not.

Comment No. 6.6

Global warming and Climate Change: The DEIS fails to provide any information about the project's greenhouse gas ("GHG") emissions whether due to the energy used for the pumping and transportation of water, for construction of the project, for workers traveling to and from the site during construction and operation or otherwise. The DEIS also fails to look at the cumulative impacts to global warming from this and other projects in the area. Nor does the DEIS estimate or discuss the emissions that would be caused by project which is not only likely to increase development in Las Vegas but is intended to do so. Because the DEIS fails to provide a complete inventory of the proposed project's greenhouse gas emissions, it fails to comply with NEPA which requires that all impacts be identified and disclosed to the public. This is unacceptable.

BLM must fully disclose and evaluate the project's greenhouse gas and global warming implications. It must fully analyze the proposed project's direct, indirect, and cumulative greenhouse gas emissions. The greenhouse gas emissions of each project component must be quantified and disclosed, including construction, operation of the groundwater pumping system itself, transportation of the water from the project site, and other emissions associated with worker transport during construction and operation of the project. The impact of these emissions must be fully discussed and placed in proper context. Alternatives which reduce or eliminate the proposed project's total GHG impacts must be proposed, including the adoption of energy conservation measures both at the project site and in Las Vegas where the project is intended to foster additional urban and suburban growth. BLM should also disclose an estimate of the economic cost of the proposed project's greenhouse gas emissions. Information on calculating

Response to Comment No. 6-4

Potential impacts to surface water resources have been analyzed and are discussed in section 4.3.1.1. These impacts are expected to be minor, primarily limited to those related to construction activities and would be further minimized by application of mitigation measures. Impacts to surface water from groundwater pumping are not anticipated, as the water would be pumped from deep carbonate aquifer (greater than 900 feet below ground surface) which does not appear to be connected with the surface water in the Kane Springs Valley. Any potential impact of pumping on the down gradient Muddy River Springs area surface water resources would be mitigated through the stipulated agreement between the LCWD and USFWS.

Response to Comment No. 6-5

The Proposed Action would not impact the following resources: Geological Resources, Mineral Resources, Livestock Grazing, Transportation, Wilderness, Recreation, Air Quality, Noise, Environmental Justice, Hazardous and Solid Waste, Paleontological Resources, and Heritage Resources and Historical Properties. Therefore, there would be no cumulative impacts to these resources from the Proposed Action. The impact on groundwater resources is discussed in section 4.20.4.2. Impacts on the ecosystem are discussed in sections 4.4, 4.5, 4.20.4.3, 4.20.4.4, 4.20.4.4.2, and 4.20.4.4.3. The impact on desert tortoise is discussed in section 4.20.4.4.1.

Response to Comment No. 6-6

The BLM acknowledges that the potential effect of climate change on water availability and future use is a dynamic and controversial topic. In the context of the Proposed Action, it is beyond the scope of this EIS. However, in the interest of understanding past, present, and reasonable foreseeable natural events that are likely to occur in the region of influence, a discussion of climate change has been added to the Cumulative Impacts section 4.20.3.1 in the FEIS.

Estimates of greenhouse gas emissions for construction of the project are included in Table 4-3 in Chapter 4.9. The number of vehicles and construction equipment that will be needed for construction of the project are unknown and emissions cannot be quantified at this time. However, the projected annual power needs of the Kane Springs Valley Groundwater Development Project are estimated at 2,000 MWh or .22 MW for wells pumping 1,000 afy and 10,000 MWh or 1.1 MW for wells pumping 5,000 afy. Greenhouse gas emissions will vary depending on the source of the power that is delivered to the project area; however, estimates have been provided in Chapter 4.9.1 based on projected annual operation power needs. For the reasons listed in this paragraph, the economic impact of greenhouse emissions associated with the project cannot be quantified.

GHG and reducing emissions is readily available to BLM and its failure to identify or analyze this issue in the DEIS is inexplicable.

Comment No. 6.6 (Cont.)

Global warming is one of the foremost problems our nation faces today and implicates all aspects of society, including environmental health and biodiversity, public health, the stability of our economy, and national security. Overall, the World Health Organization estimates that as of the year 2000, 154,000 deaths and the loss of 5.5 million daily adjusted life years per year worldwide are attributable to global warming (WHO 2002). This toll is due to the combined impacts of higher temperatures, increasing whether variability such as more frequent and intense droughts and floods, a pattern of more violent tropical storms, as well as more subtle, gradual changes that can also profoundly damage public health (Epstein and Mills 2005).

The impacts to plants and animals are well documented. For example, the endangered Quino checkerspot butterfly (*Euphydryas editha quino*) which occurs in southern California and Baja, Mexico is threatened by the significant warming and drying of its habitat from global warming (Parmesan and Galbraith 2004). The drying and warming is causing the species' host plant to die off and dry up prior to the completion of caterpillar growth, resulting in mass starvation of young caterpillars (Parmesan and Galbraith 2004). When species cannot shift their ranges northward or to increased elevations in response to climate warming, they will become extinct (Parmesan and Galbraith 2004). Impacts are being felt by species found in Nevada and other parts of the Great Basin as well as throughout the desert southwest. For example, the impact of climate change on wildlife in the Great Basin such as the pika and desert dwelling bighorn sheep have been documented (Beever 2003, Epps 2004).

Conclusion: Thank you for this opportunity to provide comments on the DEIS for the Kane Springs Valley Groundwater Development Project. Because this DEIS is inadequate it should be revised and re-circulated to the public. We look forward to reviewing a revised DEIS that adequately identifies and analyzes the impacts of the proposed project and includes a meaningful range of alternatives. Please do not hesitate to contact me if you have any questions regarding the issues raised in these comments regarding the proposed project.

Sincerely,

Lisa Belenky
Staff Attorney

Literature Cited

Beever, E.A., *et al.* 2003, Patterns of Apparent Extirpation Among Isolated Populations of Pikas (*Ochotona princes*) in the Great Basin, Journal of Mammalogy, 84(1):37–54.

Epps, *et al.*, Effects of Climate Change on Population Persistence of Desert-Dwelling Sheep in California. 18 Conservation Biology at 102.

Response to Comment No. 6-6 (Cont.)

The Proposed Action is the shortest route available to convey groundwater. For this reason, it is the alternative with the least impact on greenhouse gas emissions because construction will take less time than if the route were a longer distance.

The KSV Groundwater Development Project is not intended to increase development in Las Vegas and would not have an impact on greenhouse gas emissions in that area.

Epstein, P.R. and E. Mills (eds.). 2005. Climate change futures health, ecological, and economic dimensions. The Center for Health and the Global Environment, Harvard Medical School. Cambridge, Massachusets, USA. Available at: http://www.climatechangefutures.org/. 142 pp.

Parmesan, C. and H. Galbraith. 2004. Observed impacts of global climate change in the U.S. Pew Center on Global Climate Change. Available at: http://www.pewclimate.org/docUploads/final%5FObsImpact%2Epdf. 67 pp.

World Health Organization (WHO). 2002. The World Health Report 2002. Available at: http://www.who.int/whr/2002/en/index.html. 4 pp.

SOUTHERN NEVADA WATER AUTHORITY
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RECEIVED
BUR. OF LAND MANAGEMENT
NEVADA STATE OFFICE
07 AUG 20 AM 9:00

August 15, 2007

Penny Woods, Nevada Groundwater Project Manager
U.S. Bureau of Land Management, Nevada State Office
P. O. Box 12000
1340 Financial Blvd
Reno, NV 89520-0006

Dear Ms. Woods:

SUBJECT: COMMENTS ON THE DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR THE KANE SPRINGS VALLEY GROUNDWATER DEVELOPMENT PROJECT

On June 22, 2007, the Bureau of Land Management (BLM) issued the Draft Environmental Impact Statement (DEIS) for the Kane Springs Valley Groundwater Development Project. The Southern Nevada Water Authority (Authority) has reviewed the document and appreciates the opportunity to provide comments on the DEIS. The Authority represents seven-member water and wastewater agencies in southern Nevada, including Big Bend Water District, Boulder City, City of Henderson, City of Las Vegas, City of North Las Vegas, Clark County Water Reclamation District, and Las Vegas Valley Water District. The Authority's mission is to manage the water resources of southern Nevada and develop solutions that will ensure adequate future water supplies for the Las Vegas Valley. Our comments to the document are provided below.

Project Description

Comment No. 7.1

Chapter 2.1. A subchapter should be added to the Proposed Action describing the Lincoln County Water District (LCWD) and US Fish and Wildlife Service (USFWS) Stipulation Agreement, and the associated Mitigation, Monitoring and Management (MMM) Plan. The commitments under the MMM Plan, including the agreement to restrict or cease groundwater pumping in Kane Springs Valley, if specified trigger ranges of in-stream flow in the Warm Springs area are reached, are an integral part of the Proposed Action and need to be described in this section

Response to Comment No. 7-1

The LCWD and USFWS Stipulated Agreement and the associated Mitigation, Monitoring, and Management Plan are described in Chapter 1.4.2.1. Key components of the agreement have been summarized and added to this section as a bulleted list. The Kane Springs Valley Groundwater Development project would be constructed and operated in accordance with the stipulated agreement, and monitoring plan required and to be approved by the Nevada State Engineer.

Water Resources

Comment No. 7.2

Chapter 3.3, page 3-10, third paragraph. The Region of Influence for water resources needs to include the Muddy River Springs basin, since the MMM Plan identifies specific Action Criteria in that area.

Response to Comment No. 7-2

The text has been clarified (Section 3.3, page 3-10) so the reader understands that the Muddy River Springs area is within the Region of Influence. The basin is down gradient from the Proposed Action, and any indirect impacts from the construction and operation of the Kane Springs Valley Groundwater Development Project would be subject to stipulations outlined in the LCWD/USFWS Mitigation, Monitoring, and Management Plan.

Comment No. 7.3

Chapter 3.3.3.2, page 3-21, first bullet on page. The White River Flow System does not act as a single, continuous aquifer. There are numerous faults across the area, which act to either limit or enhance groundwater movement through the carbonate-rock aquifer.

Response to Comment No. 7-3

The statement in Chapter 3.3.3.2, page 3-21 is a direct citation from the USGS publication No. 1409-C, and subsequent Desert Research Institute publication No. 411169. This issue was also addressed in the hearings before the Nevada State Engineer (Appendix B of the FEIS).

Comment No. 7.4

Chapter 3.3.3.3.1, page 3-22, last paragraph on page. This discussion only describes groundwater recharge and discharge estimates from the CH2MHILL 2006 report. Other water budget estimates developed by different researchers should also be described, so that the discussion provides an accurate representation of existing available information. In Ruling 5712, the Nevada State Engineer did not accept the CH2MHILL 2006 recharge and discharge estimates, and provided alternative estimates which should be stated.

Response to Comment No. 7-4

This section describes local hydrogeology in Kane Springs Valley and the CH2MHILL study is the only local site-specific study the BLM is aware of in the Kane Springs Valley Hydrographic Basin. The results of regional studies are described in the groundwater occurrence section (3.3.3.2) of the FEIS. The NSE discounted some of the CH2MHill recent studies in favor of the older studies conducted by the USGS (1971) and Eakin (1966).

Comment No. 7.5

Chapter 3.3.3.4, page 3-25. Table 3-4 only provides estimates from the CH2MHILL 2006 analysis. As stated above, different values developed by other researchers should also be represented.

Response to Comment No. 7-5

See response to Comment No. 7.4

Water Rights

Comment No. 7.6

Chapter 1.4.2.1, page 1-6, third paragraph. The discussion should also state that the 1,000 acre-feet per year (afy) water rights granted in Kane Springs Valley by the Nevada State Engineer under Ruling 5712 were permitted after consideration of senior appropriated rights in down-gradient basins.

Response to Comment No. 7-6

Findings of the Nevada State Engineer in Ruling 5712 have been summarized in Chapter 3.4 and Chapter 4.3. The process the NSE uses to allocate groundwater resources within the State of Nevada is not germane to BLM's decision to grant or deny a right of way application.

Comment No. 7.7

Page 3-29, Table 3-6 and page 4-59, Table 4-7.

1) Nevada State Engineer did not list perennial yield for all the identified basins in Ruling 5712. The source of this data should be explained, and ranges provided where there is not a single definitive source.

Response to Comment No. 7-7

Table 3-6 has been revised. Perennial yields came from Nevada Water Facts – Perennial Yield and Committed Resources Details NDWR 1992. The footnote was clarified.

Comment No. 7.8

2) The water rights permitted column contains inaccuracies and should be checked. In Nevada State Engineer Order 1169, 16,300 afy was listed as permitted in Coyote Spring Valley and 14,756 afy as permitted in the Muddy River Springs (Upper Moapa Valley) basin.

Response to Comment No. 7-8

Tables 3-6 and 4-7 have been revised. Discrepancies resulted from reporting diversion rates (and conversions from cubic feet per second to acre feet per year) in order to stay consistent with amounts reported for applications that are still pending.

Comment No. 7.9

3) The citation for the third footnote is missing.

Response to Comment No. 7-9

Citation has been added to Table 3-6 and 4-7. The citation is NDWR (2007) Water Rights Database web page which can be found at http://water.nv.gov/water

Comment No. 7.10

4) The 80,051,543 afy listed as water rights pending for Delamar Valley should be verified and explained.

Response to Comment No. 7-10

Table 3-6 has been revised. However, Delamar Valley does have 4 pending applications (69881-69884) filed in 2003 for large diversion rates for municipal and power use.

Comment No. 7.11

Page 3-29, Tables 3-6 and page 4-59, Table 4-7. The pending water right applications listed in these tables do not necessarily represent reasonable and foreseeable developments, and could be misconstrued. As described in more detail below, under Cumulative Analysis comments, the total quantity of these applications are not included in the DEIS analysis. Either the column should be removed, or substantial additional explanation provided regarding the status of each of the individual water right applications in those basins, and reasonably foreseeable developments separately identified.

Response to Comment No. 7-11

Tables 3-6 and 4-7 have been revised. For clarification, totals were removed from the table.

Cumulative Analysis

Comment No. 7.12

Page 4-52, Table 4-6. In the Project column, the timing for the Coyote Spring Well and Moapa Transmission System project is incorrect. The Final Environmental Assessment (EA) and Finding of No Significant Impact (FONSI) were issued June 22, 2007.

Response to Comment No. 7-12
Correction has been made in Table 4-6 of this Final EIS.

Comment No. 7.13

Chapter 4.20.3.3.5, page 4-55.

1) The last sentence of the first paragraph should be updated to indicate that the Final EA and FONSI have been issued. Construction of this project is anticipated to start in fall of 2007.

Response to Comment No. 7-13
Correction has been made in section 4.20.3.3.5 of this Final EIS.

Comment No. 7.14

2) The first sentence of the second paragraph is incorrect. The Coyote Spring project will develop existing permitted water rights, and is not subject to Order 1169. Order 1169 pertains to pending groundwater applications, which would be developed under other projects.

Response to Comment No. 7-14
Correction has been made in section 4.20.3.3.5 of this Final EIS.

Comment No. 7.15

Chapter 4.20.3.3.9, page 4-57.

1) In the first paragraph, the description of the proposed facilities for the Clark, Lincoln and White Pine Counties Groundwater Development Project should be updated to indicate that they include 327 miles of pipeline, 5 pumping stations, 6 regulating tanks, a buried storage reservoir, a water treatment facility, 14 groundwater production wells, 349 miles of overhead power lines, 8 substations, and 4 hydroturbine energy recovery facilities (SNWA Plan of Development, July 2007).

Response to Comment No. 7-15
Correction has been made in section 4.20.3.3.9 of this Final EIS.

Comment No. 7.16

2) In the second paragraph, the first sentence should be revised to: "The proposed facilities would develop groundwater in the following valleys…" The second sentence should be revised to: "SNWA holds water rights and applications for approximately 167,000 afy…"

Response to Comment No. 7-16
Correction has been made in section 4.20.3.3.9 of this Final EIS.

Comment No. 7.17

3) The third paragraph provides an extensive discussion of the SNWA groundwater rights in Spring Valley recently issued by the Nevada State Engineer. If the intent of this discussion is to identify the quantity of SNWA's existing rights in Spring Valley, the discussion should also include the groundwater rights purchased by SNWA with property in Spring Valley. However, it does not appear that specific Spring Valley water rights are pertinent to the cumulative impact analysis for Kane Springs, therefore this entire discussion may not be necessary.

Response to Comment No. 7-17
The discussion regarding the Nevada State Engineers ruling on water rights in Spring Valley has been modified (section 4.20.3.3.9). Allocation of water rights within the Spring Valley Hydrographic Basin is not germane to BLM's decision to approve or deny the LCWD's right of way application in Kane Springs Valley.

Comment No. 7.18

Page 4-59, Table 4-7. As mentioned under the Water Rights comments above, the listing of all pending water right applications, is not appropriate for the cumulative analysis. Some of these water rights applications have been held for an extended time period, no State Engineer action has been requested, nor have formal development projects been proposed. Since only a portion of the pending application quantities were included in the cumulative impact analysis, listing all of them without additional explanation could be

Response to Comment No. 7-18
The column has been removed in Table 4-7.

Comment No. 7.18 (Cont.)

misinterpreted. Only pending water right applications considered reasonably foreseeable and evaluated in this cumulative analysis should be listed.

Comment No. 7.19

Chapter 4.20.4.2, page 4-60, fifth paragraph. In addition to Spring and Snake Valleys, the Clark, Lincoln, and White Pine Counties Groundwater Development Project also includes water right applications in Coyote Spring, Delamar, Dry Lake, and Cave Valleys. These valleys are within the same groundwater flow system as Kane Springs Valley and the Muddy River Springs basin, and any water rights granted by the State Engineer pursuant to SNWA's pending groundwater applications would be senior in priority to both the 1,000 afy granted under Ruling 5712 and any additional water rights granted in Kane Springs Valley.[1] Consideration of the location and senior status of SNWA's pending applications within the same flow system should be mentioned in this cumulative analysis.

Response to Comment No. 7-19

A summary of the findings of the Nevada State Engineer in Ruling 5712 have been added to Chapter 3.3.3.3.1. The process the NSE uses to allocate groundwater resources within the State of Nevada is not germane to BLM's decision to grant or deny a right of way.

Comment No. 7.20

Chapter 4.20.4.2, page 4-61, second, third, and fourth paragraphs. The cumulative impact discussion should also mention that the trigger range commitments for the Proposed Action under the LCWD and USFWS Stipulation Agreement would result in groundwater pumping under the Kane Springs Project being completely shut down before trigger levels for action under the Coyote Spring Memorandum of Agreement are reached.

Response to Comment No. 7-20

The decisions to require reduction or cessation of pumping under the LCWD and USFWS Stipulation agreement and/or the Coyote Springs MOA would be made by the Nevada State Engineer, the timing and sequence of which are presently not known.

Comment No. 7.21

Chapter 4.20.4.2, page 4-62, first non-bulleted paragraph. The listed rulings and agreements would not necessarily prevent any cumulative impacts from occurring. Under those agreements, in-stream flow, levels may decrease to the agreed-upon trigger ranges and levels. These decreases in flow, may not result in significant impacts, but it seems inappropriate to imply that there would not be any impacts.

Response to Comment No. 7-21

Comment noted.

We appreciate the opportunity to provide these comments. If you have any questions, please contact me at (702) 258-3107 or Lisa Luptowitz at (702) 862-3789.

Sincerely,

Kay Brothers

Kay Brothers
Deputy General Manager
Engineering/Operations

KB:LL:df

cc: Lisa Luptowitz, Senior Environmental Planner, SNWA

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[1] See NRS 534.080(3) "The date of priority of all appropriations of water from an underground source, mentioned in this section, is the date when application is made in proper form and filed in the office of the State Engineer[.]".

"Simeon Herskovits"
<simeon@communityandenvironment.net>
08/21/2007 12:29 AM

To nvgwprojects@blm.gov, Penny_Woods@blm.gov
cc sblynn@sbcglobal.net, rosenreno@sbcglobal.net
bcc
Subject comments on Kane Springs DEIS

Dear Ms. Woods:

Attached are comments on the draft Environmental Impact Statement for teh Kane Springs Valley Groundwater Development Project. In addition to the main comment document, please note that three additional documents are being submitted as part of those comments. Those three documents comprise Dr. Myers's hydrogeology report and Dr. Deacon's manuscript article on potential biological impacts (with the article's figures as a separate document).

Thank you for attention to these materials.

Sincerely,

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8-20-07.Kane Springs DEIS Comments 2.doc
8-3-07.Myers review of Kane Springs DEIS.doc
7-30-07.Deacon manuscript final no figs.doc
7-30-07.Deacon manuscript Figures.ppt

SENT VIA E-MAIL

August 20, 2007

Penny Woods
Project Manager
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E-mail: nvgwprojects@blm.gov
Penny_Woods@blm.gov

Re: Comments on the BLM's Kane Springs Groundwater Development Project Draft Environmental Impact Statement

Dear Ms. Woods:

Thank you for providing this opportunity to provide comments on the Bureau of Land Management's (BLM's) draft environmental impact statement (DEIS) for the Kane Springs Groundwater Development Project (hereinafter "project," "proposed action," or "Kane Springs Project").

These scoping comments are submitted by Advocates for Community and Environment on behalf of the Great Basin Water Network ("GBWN") and Defenders of Wildlife ("DOW") (collectively the "Commenters"). Additional comments may also be submitted separately by members of these organizations, their employees/officers, and other interested citizens associated with these organizations. These comments incorporate by reference all such comments, as well as the comments of the Toiyabe Chapter of the Sierra Club, Dr. Jim Deacon, and Dr. Tom Myers.

Comment No. 8-1-1

The Commenters request that these comments, and all attachments be included as part of the administrative record. The Commenters further request that all documents, articles, and/or reports cited in these comments and attached expert testimony be included as part of the administrative record of this action. See County of Suffolk v. Secretary of Interior, 562 F.2d 1368, 1384, n.9 (2d Cir. 1977) (addressing scope of NEPA administrative record), cert. denied, 437 U.S. 1064 (1978); Silva v. Lynn, 482 F.2d 1282 (1st Cir. 1973) (same); see also Thompson v. United States Dep't of Labor, 885 F.2d 551, 555 (9th Cir. 1989) (administrative record consists of all documents and materials directly or indirectly considered by agency and includes evidence contrary to agency's position).

Response to Comment No. 8-1-1

As described in Chapter 1.2 – Purpose and Need, the purpose of LCWD's application to the BLM is to construct and operate infrastructure to convey groundwater resources permitted by the Nevada State Engineer across federal lands managed by the BLM. The CSI development in Lincoln and Clark County are separate actions from the Proposed Action. CSI development in both counties would occur in the absence of the Proposed Action. The NSE is the governing entity that has the authority to approve and control the amount of groundwater pumped from basins in Nevada. The CSI development must be designed to incorporate water efficiencies and conservation measures to support their proposed buildout. These measures are described in the CSI General Improvements District Water Plan. Also see response to comment 6-6.

As explained in detail below, the Project is premised on unsustainable groundwater mining, and as such poses a serious threat to the groundwater system underlying a substantial

portion of the carbonate aquifer province and the dependent environment. Among the harms likely to be caused by the Project are long-term, catastrophic depletion of the aquifer that would take many millennia to remedy. By substantially drawing down the local and regional aquifer systems, the Project also threatens to dry out regional springs that support a host of endemic species, including species listed under the Endangered Species Act. The project also poses a significant risk of creating a substantial area of denuded, dried out sediment with considerable potential to generate harmful dust emissions comparable to those produced by the drying out of the Owens Valley, which ranks as one of the Nation's most conspicuous environmental disasters. In addition, the use of such a significant quantity of ground water on the surface of a great area of Coyote Springs Valley promises to attract ravens and other birds of prey that will predate on fragile desert tortoise population in nearby habitat areas. These are only some of the distrubing potential environmental impacts from the Project, impacts that in practical terms will be permanent and very expensive to even attempt to mitigate.

Comment No. 8-1-2

The Draft Environmental Impact Statement (DEIS) does not adequately address these and other serious problems with the Project. Indeed the DEIS is woefully inadequate under NEPA. Among its most glaring deficiencies, the DEIS is based on a patently deficient description of the Project and the physical conditions and environmental resources in its vicinity, a grossly inadequate assessment of the purpose and need for the Project, and a failure to examine the Project's feasibility and likely adverse environmental impacts. In all these regards, the DEIS fails to comply with NEPA.

Response to Comment No. 8-1-2

Direct impacts on these resources are discussed in Sections 4.3.1.1, 4.3.1.2, 4.3.1.3, 4.3.1.4, 4.3.1.5, 4.3.1.6, 4.4.1, 4.5.1, 4.5.1.1, and 4.5.1.2.

The Legal Requirements of the National Environmental Policy Act:

"Section 101 of NEPA declares a broad national commitment to protecting and promoting environmental quality." Robertson v. Methow Valley Citizens Council, 490 U.S. 332, 348 (1989), citing 83 Stat. 852, 42 U.S.C. § 4331. "The sweeping policy goals announced in § 101 of NEPA are . . . realized through a set of 'action-forcing' procedures that require that agencies take a "hard look' at environmental consequences.'" Id. at 350, citing Kleppe v. Sierra Club, 427 U.S. 390, 410 n.21 (1976). NEPA's main "action-forcing" procedure comes in the form an environmental impact statement ("EIS"), a detailed statement on environmental impacts that must be prepared before an agency undertakes any "major Federal action[] significantly affecting the quality of the human environment." NEPA § 102(2)(C), 42 U.S.C. § 4332(2)(C).

Thus, NEPA "ensures that the agency, in reaching its decision, will have available, and will carefully consider, detailed information concerning significant environmental impacts." Robertson v. Methow Valley Citizens Council, 490 U.S. 332, 349 (1989). See also Vermont Yankee Nuclear Power Corp. v. Natural Resources Defense Council, 435 U.S. 519, 553 (1978) ("NEPA places upon an agency the obligation to consider every significant aspect of the environmental impact of a proposed action"). "These procedural provisions of NEPA 'are designed to see that all federal agencies do in fact exercise the substantive discretion given them. These provisions are not highly flexible. Indeed, they establish a strict standard of compliance.'" Sierra Club v. Watkins, 808 F. Supp. 852, 859 (D.D.C. 1991), quoting Calvert Cliffs' Coordinating Comm., Inc. v. United States Atomic Energy Comm'n, 449 F.2d 1109, 1112

(D.C. Cir. 1971).

The Council on Environmental Quality ("CEQ") has promulgated regulations implementing NEPA that are binding on all federal agencies. 40 C.F.R. § 1500.3; Robertson v. Methow Valley Citizens Council, 490 U.S. at 354.

The DEIS Fails to Accurately Identify or Adequately Evaluate the Purpose and Need for the Project:

As described below, the Assessment of purpose and need that underlies the DEIS is inadequate and characterized by omissions and inconsistencies.

Conservation Measures

To begin with, the DEIS does not provide sufficient specificity regarding what conservation measures have been, or reasonably can be expected to be, implemented in Lincoln and Clark Counties. Without this information it is not possible to assess the reasonableness of the assumed future demand on which the Kane Springs Valley Groundwater Development Project is premised.

Comment No. 8-1-3

Throughout the discussion of need and purpose, the DEIS betrays a presumption in favor of mining groundwater from Kane Springs Valley for proposed unsustainable growth in Coyote Springs Valley, rather than examining other, more sustainable, potential water supplies, including increased water conservation and recycling in both Lincoln and Clark Counties.

The bias betrayed in this unbalanced consideration is also evident in the DEIS's failure to acknowledge that increased conservation measures would protect against overdraft of groundwater basins.

Because the BLM passively accepts the Project proponents' assertions concerning future water demand, the DEIS provides the public and the ultimate decision-makers with no basis for assessing the adequacy of the consideration given to reasonably available additional conservation measures.

Response to Comment No. 8-1-3

The CSI development is a separate action from the Proposed Action. The CSI Development would occur in the absence of the Proposed Action. However, in the interest of understanding reasonable, foreseeable future actions in the region of influence, the Final EIS contains an expanded discussion of CSI's proposed actions in Clark and Lincoln County. This information has been added to Chapter 4.20.3.3.2. Cumulative socioeconomic impacts are discussed in section 4.20.4.8.

Comment No. 8-1-4

Water Recycling and Groundwater Recovery Programs:

The purpose and needs analysis also fails to adequately describe or address the opportunities to meet anticipated water demand through water recycling and groundwater recovery programs. Because this potential additional water supply is not considered in the purpose and need analysis underlying the DEIS, neither the Agencies nor the public can make an informed decision regarding the actual need for the Project.

Response to Comment No. 8-1-4

Cumulative impacts are discussed for all resources in Chapter 4.20.4. The geographic scope for the analysis is referred to as the cumulative resource analysis area and varies by resource. The timeframe for the cumulative impact analysis encompasses past and present activities in the areas described above, and future activities that may extend up to 20 years in the future and is described in Chapter 4.20.2. Other actions affecting resources, ecosystems, and/or human communities of concern are described in Section 4.20.3 Cumulative Projects Considered.

The DEIS Fails to Adequately Describe the Project and the Physical Conditions and Environmental Resources in its Vicinity -- Deficient Description of Hydrogeologic Conditions and Analysis of Potential Hydrogeologic Impacts:

Comment No. 8-1-5

As detailed in the report of Dr. Tom Myers (attached hereto as Exhibit A), the DEIS is grossly deficient in many regards concerning the hydrogeology of Kane Springs Valley and of the proposed project. That report and the criticisms contained therein are herby incorporated by reference into these comments.

Response to Comment No. 8-1-5

As required by Nevada State Engineer ruling 1169, data are currently being collected for all wells in Coyote Springs Valley with the results posted on the internet. For Kane Springs, the only available data is from the test wells KPW-1 and KMW-1. Geochemistry data for the eight wells has been added to section 3.3.3.3.1 of this FEIS.

Additional deficiencies of the DEIS are listed below. In light of these deficiencies under NEPA, we believe that the only appropriate action for the BLM to take is to correct its deficient analysis and issue a new DEIS for public comment.

Comment No. 8-1-6

(1) Direct Impacts. The DEIS has failed to carefully analyze the direct impacts of the Project. This includes analyzing the impacts of both the construction and long-term operation of the wells, pipelines, electrical supply lines and ancillary facilities. Of particular concern are the direct impacts of the proposed action on eastern Nevada's aquifers (valley fill and carbonate), springs, seeps, wetlands, and wet meadows, water dependant vegetation, wildlife populations and habitat (including threatened and endangered species), and existing water rights (including vested rights). The DEIS also fails to adequately analyze the impacts of the proposed action on the neighboring Area of Critical Environmental Concern (ACEC), the Pahranagat National Wildlife Refuge, Desert National Wildlife Range, and the Arrow Canyon Wilderness.

Response to Comment No. 8-1-6

A reasonable range of alternatives is presented in Chapter 2.0 of this FEIS. Chapter 2.

Comment No. 8-1-7

(2) Indirect Impacts. The DEIS fails to adequately analyze the indirect effects of the Project. Indirect effects are effects that are caused by the action but occur later in time or are further removed in distance. See 40 C.F.R. § 1508 (b). Indirect effects "may include growth inducing effects or other effects related to induced changes in pattern of land use; population density or growth rate; and related effects on air, water, and other natural resources." Id. Here, the indirect effects of the Kane Springs Project include, but are not limited to, the future growth and development of the Coyote Springs Valley – the stated "purpose" of the project – and the indirect effects on the region's human and wildlife communities that will result from the proposed pumping of the aquifer. Unfortunately, the DEIS fails to take a meaningful, let alone the required "hard," look at these impacts.

Response to Comment No. 8-1-7

Comment Noted.

Comment No. 8-1-8

(3) Cumulative Impacts. The DEIS does not contain the required hard look at the cumulative impacts of the proposed action. Cumulative impacts are "the impacts on the environment which result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions." 40 C.F.R. § 1508.7. Cumulative impacts can result from "individually minor but collectively significant actions taking place over a period of time. Id.

The DEIS does not properly analyze the cumulative effects of the Project because it does not: (1) identify the significant cumulative effects issues associated with the proposed action; (2) establish the proper geographic scope for the analysis; (3) establish an appropriate time frame for the analysis; or (4) identify other actions affecting the resources, ecosystems, and/or human communities of concern. Thus, the DEIS is deficient in all regards concerning cumulative effects.

Response to Comment No. 8-1-8

Environmental resource data was collected and analyzed to the level of detail necessary to understand potential impacts and to distinguish project effects (both beneficial and adverse) among the Proposed Action and alternatives. The data analyzed in this EIS are the best available representation of current and predicted conditions at this time. There is, however, a level of uncertainty associated with any set of data in terms of predicting impacts, especially where natural systems are involved. Areas of uncertainty associated the Proposed Action are described in the Incomplete and Unavailable Information section located at the beginning of Chapter 4.

In this case, establishing the proper geographic scope or boundary for a cumulative impacts analysis is extremely important because the proposed action will have direct, indirect, and an "additive" affect on resources *beyond the immediate* area. To determine the appropriate geographic boundaries for a cumulative effects analysis, therefore, the BLM's DEIS should first have: (1) determined the area and resources (i.e., the aquifers) that will be affected by their proposed action (the "project impact zone"); (2) made a list of resources within that area or zone that could be affected by the proposed action; and (3) determined the geographic areas occupied by those resources outside the immediate area or project impact zone. The largest of these areas would be the appropriate area for the analysis of cumulative effects. By way of example, for resident or migratory wildlife, the appropriate geographic area for the cumulative impacts analysis will be the "species habitat" or "breeding grounds, migration route, wintering areas, or total range of affected population units." see e.g., NRDC. v. Hodel, 865 F.2d 288, 297 (D.C. Cir. 1988) (agency violated NEPA by failing to consider the synergistic effect of simultaneous development on migratory whales).

Indeed, because the Kane Springs Project will directly impact a vast aquifer system (valley fill and carbonate), the scope of the cumulative impacts analysis in the DEIS must encompass the entire aquifer system. Some of Nevada's aquifers are connected among basins. As such, the development of water resources in one basin may affect water levels in or discharges to other basins. It therefore is imperative that the scope of the BLM's cumulative impacts analysis extend beyond the immediate Kane Springs Valley, transcend State boundaries, and include the entire aquifer system (this includes the States of Idaho, California, and Utah). Unfortunately, however, the DEIS fails utterly to engage in this broad analysis.

Another important aspect of a cumulative impacts analysis that the BLM is required to engage in is an assessment of other past, present, and reasonably foreseeable actions affecting the resources, ecosystems, and/or human communities of concern. According to the CEQ, the "most devastating environmental effects may result not from the direct effects of a particular action, but from the combination of individually minor effects of multiple actions over time." The requirement to consider cumulative impacts, therefore, is designed to avoid the "combination of individually minor" effects situation – to avoid the "tyranny of small decisions" or "death by a thousand cuts" scenario. See e.g., Grand Canyon Trust v. FAA, 290 F.3d 339, 346 (D.C. Cir. 2002).

The DEIS therefore should have taken into account and analyzed a number of state, private, and other federal actions as well as natural occurrences or events that have taken place (historic and current pumping), are taking place, or are proposed to take place that will similarly impact the region's aquifers, wildlife populations and habitat, and human communities (i.e., existing rights, domestic wells). Individually, each groundwater pumping activity – though serious – may not rise to the level of posing a significant risk to the aquifer. Collectively, however, the impacts of all of these and other activities – whether conducted by private individuals, state agencies, or other federal agencies – may be significant and must be analyzed. See e.g., Grand Canyon Trust, 290 F.3d at 346 (discussing collective impacts to Zion National

Comment No. 8-1-8 (Cont.)

Park); NRDC v. Hodel, 865 F.2d 288 (D.C. Cir. 1988) (discussing collective impacts to migratory whales). As the D.C. Circuit Court noted, federal agencies must "give a realistic evaluation of the total impacts [of the action] and cannot isolate the proposed project, viewing it in a vacuum." Grand Canyon Trust, 290 F.3d at 342. Even "a slight increase in adverse conditions . . . may sometimes threaten harm that is significant. One more factory . . . may represent the straw that breaks the back of the environmental camel." 290 F.3d at 343 (quoting Hanly v. Kleindienst, 471 F.2d 823 (2nd Cir. 1972)).

Under NEPA, an agency must honestly address the various uncertainties surrounding the scientific evidence upon which it relies in its environmental evaluations. The agency has a duty to respond to credible opposing points of view, and it may not ignore reputable scientific opinion. See, e.g., Seattle Audubon Soc'y v. Espy, 998 F.2d 699, 704 (9th Cir. 1993); Public Service Co. v. Andrus, 825 F. Supp. 1483, 1496-99 (D. Idaho 1993); see also Sierra Club v. Watkins, 808 F. Supp. 852, 864-69 (D.D.C. 1991). An agency's NEPA analysis must expose scientific uncertainty regarding the risk of a proposed action and inform decisionmakers of the full range of responsible scientific opinion on the environmental effects of the proposed action. Friends of the Earth v. Hall, 693 F.Supp. 904, 926, 934 (W.D. Wash 1988). Also, federal agencies are responsible for overseeing and ensuring the accuracy of environmental impact statements produced by contractors. 40 C.F.R. § 1506.5(c).

In this regard, too, the DEIS is inadequate on its face and must be redone.

Comment No. 8-1-9

Additional potential significant impacts of the Kane Springs Project that the DEIS fails to adequately address are impacts on air quality through the creation of conditions that will increase the likelihood of serious dust emissions in the affected area and impacts to wildlife species in the affected area, including those listed under the ESA and presently protected in wildlife refuges and management areas.

(4) Baseline. The BLM's DEIS will need to establish the proper baseline upon which to base its impacts analyses and conduct the requisite "trends analysis," i.e., an assessment of the environmental impacts of all activities affecting the various resources over an extended period of time. Only by properly defining the baseline and engaging in a trends analysis can the BLM get a sense of the changes that have occurred overtime. At a minimum, baseline data on water rights and claims (vested, recorded, and applications), historic and current water uses, locations of all springs and seeps (on both private and public land), locations of all wet meadows and wetlands, locations of water-dependant flora and fauna, aquifer recharge rates, and information on the connectivity between the alluvial groundwater and carbonate system throughout the affected region is needed in order to properly analyze the impacts (direct, indirect, and cumulative) of the proposed action.

(5) Alternatives. The BLM's DEIS will need to consider a reasonable range of alternatives. Under NEPA, federal agencies must "study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources." 42 U.S.C. § 4332(2)(E); 40 C.F.R.

Response to Comment No. 8-1-9

Each of the projects mentioned are separate and distinct with their own unique issues and timelines. Each represents a discreet hydrographic basin or set of basins for which the allocation of water rights is with the purview of the Nevada State Engineer.

§ 1508.9(b). The discussion of reasonable alternatives section is the "heart" of any environmental analysis under NEPA. 40 C.F.R. § 1502.14. In order to comply with this mandate, the BLM's DEIS will need to properly define the "purpose and need" of the action. If the "purpose and need" of the action is too narrowly defined, then the range of alternatives considered will likewise be too narrow in scope. At a minimum, the DEIS will need to explore different levels of pumping, alternative sources of water, piping from different sources, desalinization, different combinations of pumping among valley fill and carbonate wells, various mitigation measures, various levels of development in the Coyote Springs valley, and a water conservation alternative.

(6) Meaningful Public Comment. The goal of NEPA, and the very purpose of preparing a DEIS is to "provide a full and fair discussion of significant environmental impacts [of a proposed action]" and to "inform decision makers and the public of the reasonable alternatives which would avoid or minimize adverse impacts or enhance the quality of the human environment." 40 C.F.R. §1502.1. With this mandate in mind, and in order to enable meaningful public comment, the BLM's DEIS for the Kane Springs project will need to be well organized, easy to read and understand, and include proper references and citations to all relevant scientific studies and data. Given the technical nature of the DEIS and the need for careful public review and analysis, the DEIS's public comment period should also be extended to a minimum of 120 days. The BLM should also disclose to the public, as soon as possible, the hydrological and biological data and assumptions underlying any models that will be used for the DEIS. The BLM's DEIS must also include complete and accurate information. In this respect, it is extremely important for the BLM to collect the necessary data on the aquifers, springs, seeps, and wetlands, and existing rights (especially vested rights) before preparing the DEIS. It is equally important for the BLM to identify the precise location and dates of all well applications filed, the amount of water to be withdrawn, and the status of any other water rights and applications in the region.

(7) Best Scientific Information. All agencies, including the BLM "shall insure the professional integrity, including scientific integrity, of the discussions and analyses in [NEPA documents.]" 40 C.F.R. §1502.24. Pursuant to NEPA, information included in a DEIS "must be of high quality." 40 C.F.R. § 1500.1 (b). Accurate "scientific analysis [is] essential to implementing NEPA." Id. While a DEIS may not be expected to reference or rely on every study or opinion, the state of scientific knowledge on a particular subject must be fairly represented in a balanced manner. Morever, a DEIS must contain a reasoned analysis in response to conflicting data or opinions on environmental issues.

The DEIS for the Kane Springs Project does not present and is not based upon the required high quality scientific data and analysis required by NEPA. This failure is apparent by comparing the conclusory discussion contained in the DEIS with the authoritative information and analysis contained in the report of Dr. Tom Myers on hydrogeologic aspects of the Project (attached hereto as Exhibit A) and the manuscript article of Dr. Jim Deacon on the biological implications of ground water development proposals including the Kane Springs Project (Attached hereto as Exhibit B). In order to adequately analyze the direct, indirect, and

cumulative impacts of the proposed action, the BLM will need to review and collect more scientific data. At a minimum, the BLM needs to prepare detailed potentiometric surface maps for the valley fill and carbonate aquifers, complete sufficient pump tests (with monitoring) to detail the variability in hydraulic conductivity across the basins, and complete pump tests for transient calibration of a groundwater model. In addition, the BLM needs to prepare a detailed groundwater model that includes all of the basins in the carbonate province and the overlying valley fill aquifers. The BLM should also prepare a monitoring and mitigation plan and carefully review and consult all other available (or soon be available) studies on the aquifer system and the impacts of groundwater pumping on the area's natural resources.

(8) Comprehensive EIS. The deficiencies of the DEIS plainly bear out the need for the BLM to prepare one comprehensive or programmatic EIS for all groundwater development projects in the region. Pursuant to CEQ's NEPA regulations, actions that: (1) are closely related, i.e., are interdependent parts of a larger action and depend on the larger action for their justification; or (2) are cumulative actions, which when viewed with other proposed actions have cumulatively significant impacts; or (3) are similar actions that have similarities that provide a basis for evaluating their environmental consequences together, such as common timing and geography, need to be considered in one EIS. See 40 C.F.R. § 1508.25.

Here, there are a number of individual projects that should be considered in one, single EIS. These projects include, but are not limited to: (1) the Tule Desert project (also known as the "Lincoln County Land Act project"); (2) the Three Lakes Tikaboo project; (3) the Virgin/Muddy River surface water development project; (4) the Lake Mead pipeline EIS; (5) the Coyote Springs development project; and (6) the Southern Nevada Water Authority's Clark, Lincoln, and White Pine Counties groundwater development project.

Without question, all of these projects are closely related as they involve the same impacts to the same resource (the aquifer system) and are part of a larger, programmatic plan to develop interconnected "in-state" water resources. The projects are also actions, which when viewed with other proposed actions have cumulatively significant impacts on the aquifer, human communities, and wildlife populations and habitat in the region. These projects also qualify as "similar actions" that have similarities that provide a basis for evaluating their environmental consequences together, such as common timing and geography. These projects therefore belong in one, programmatic EIS.

In fact, preparing a single EIS is the only way the BLM can explore a reasonable range of alternatives with varying degrees of groundwater pumping, alternate sources of water, conservation measures, various locations for proposed wells, and different combinations of pumping among the valley fill and carbonate wells throughout the region.

In closing, thank you for providing this opportunity to submit scoping comments on the BLM's Kane Springs project. We sincerely appreciate the opportunity to participate in this and other important decisions affecting public resources in Nevada. The significance of these interconnected water development projects in terms of the impacts to human communities in

rural Nevada and Utah and the survival of unique ecosystems and endemic species in the Great Basin region cannot be overstated.

We hope you find these comments to be helpful, informative, and useful in your efforts to comply with the NEPA and other substantive statutes. If you have any questions or comments, or wish to discuss the issues raised in these comments in greater detail, please do not hesitate to contact me or the GBWN and DOW representatives listed below.

Sincerely,

_____//s//_____

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COMMENTS OF GREAT BASIN WATER NETWORK AND DEFENDERS OF WILDLIFE ON THE DRAFT EIS FOR THE KANE SPRINGS GROUNDWATER DEVELOPMENT PROJECT

EXHIBIT A

August 2, 2007

Technical Memorandum
To: Great Basin Water Network
From: Tom Myers, PhD, Hydrologic Consultant
Re: Review of the Kane Springs DEIS

This DEIS is based on Coyote Springs Development ultimately receiving 5000 af/y from the Nevada State Engineer. The project has three phases, with the first implementing the existing 1000 af/y grant. The remainder of the project depends on the State Engineer effectively reversing his Kane Springs ruling (Nevada State Engineer Ruling 5712 (Kane Springs Ruling)) and granting more water.

The DEIS indicates that Lincoln County has applied for additional water rights from Kane Springs beyond that which was considered in the Kane Springs ruling (DEIS, page 4-6). The DEIS claims that the pumping will not affect Muddy Springs, but does recite some modeling results done by others showing that the cumulative effects will be devastating. The DEIS also depends in large part for its hydrologic conditions on findings by consultants work which the State Engineer rejected in part or in whole in the Kane Springs ruling, as will be described below.

This technical memorandum reviews the hydrogeology in the Kane Springs DEIS. It finds that the DEIS inappropriately used recharge and interbasin flow estimates that had previously been rejected by the Nevada State Engineer, does not do a numerical model of the impacts of the flow, and inappropriately uses the Theis method to predict the extent of drawdown from six wells. The methods used will lead to an estimate of drawdown that is much less than will occur if this project is built.

Faulty Science in the DEIS

Comment No. 8-2-1

The BLM in the Water Resources section of the DEIS presented numerous flow estimates and suppositions that are in error and that have been rejected by the Nevada State Engineer. One example is the estimate for flow into, out of, and recharge to Kane Springs Valley (DEIS, page 3-22). There are at least three problem areas.

First, the BLM references CH2MHILL's estimate of that there is 13,000 af/y of regional groundwater flow into Kane Springs Valley. The estimate is based on a gradient determined from wells far apart without any evidence of there being a hydraulic connection between them. The State Engineer found "the Applicants' inflow analysis [to be] overly interpretive and without sufficient supporting evidence" (Kane Springs ruling,

Response to Comment No. 8-2-1

The NSE found that "the applicants' interpretation of ground-water movement in the Kane Springs Valley from northeast to southwest and into Coyote Spring Valley, preferentially along the Kane Springs Wash Fault zone, is generally consistent with the available data." A summary of the NSE ruling has been added to section 3.3.3.3.1. The BLM agrees that the NSE found fault with the calculations and accordingly only appropriated 1,000 afy. This has been clarified in the FEIS (in section 3.3 and 4.3).

Comment No. 8-2-1 (Cont.)

page 8). The flow would occur through a "relatively narrow zone at the corner of the basin" (*Id.*). The State Engineer also found that "sufficient data does not exist to substantiate or reliably estimate subsurface flows into the Kane springs Valley Hydrographic Basin and the Applicants' **inflow estimates are hereby discounted and not accepted**." (*Id.*, emphasis added). It is these discounted estimates that the BLM reports as fact in this DEIS.

Second, the BLM claims local recharge in Kane Springs Valley to "be on the order of 5000 AFY" (DEIS, page 3-22). In the Kane Springs ruling, the State Engineer specifically rejected the analyses supporting the project proponents estimate recharge range of 5000 to 14,000 af/y. The State Engineer used an analogue with the Death Valley flow system and suggested that groundwater recharge would range from 1 to 2% of total precipitation or from 1200 to 2800 af/y (Kane Springs ruling, page 14). The State Engineer states that his estimate is greater than the reconnaissance estimate of 500 af/y but also that his new estimate should not be considered definitive (*Id.*).

Third, the BLM reports that project proponents estimated discharge from Kane Springs into Coyote Spring Valley as equaling 16,000 af/y as though it is accepted (DEIS, page 3-22). It is not accepted; the Nevada State Engineer rejected all of the analysis used to reach these conclusions in his Kane Springs Ruling. "The State Engineer finds several irregularities and inconsistencies with the Applicants' analysis." (Kane Springs ruling, page 9). For one, the State Engineer rejected the applicants estimated gradient of 0.005 and instead determined the appropriate gradient was 0.0004.

In section 4, the BLM discusses the Nevada State Engineer's ruling and acknowledges that the Nevada State Engineer limited the permits to 1000 af/y – not the 5000 af/y sought by the applicant (and proponent of this right-of-way application). The BLM also acknowledges that it is the Nevada State Engineer who sets the perennial yield for a basin. But the BLM then repeats the CH2MHILL estimated recharge of 5000 af/y as though the BLM assumes that the Nevada State Engineer will change his mind. The BLM must realize that the BLM rejected the applicant's water rights applications **because** he rejected the 5000 af/y recharge estimate which the BLM is now using as the basic science supporting this DEIS.

The BLM has rejected the State Engineer's decision with respect to the science by accepting much of it for this DEIS. But, when considering the effects of the pumping on Muddy River Springs, it accepts the State Engineer's finding that there is not sufficient data to prove there would be an effect. This is discussed below in the section on Regional Springs.

Response to Comment No. 8-2-1 (Cont.)

The CH2MHill study is the only local site-specific groundwater study that has been conducted in the Kane Springs Valley Hydrographic Basin. Regional findings are described in the groundwater occurrence section (3.3.3.2). New sections have been added to the FEIS Chapter 4 that address uncertainty: Assumptions for Analysis and Incomplete and Unavailable Information at the beginning of Chapter 4.

Improper and Inappropriate Modeling

Comment No. 8-2-2

The DEIS described geologic conditions as being complex, with faults both limiting and enhancing flow. The conditions described are very heterogeneous. But the project does not include predictive numerical modeling, as it should. Rather the project utilizes standard Theis equations to predict the extent of drawdown to be expected; this method is

Response to Comment No. 8-2-2

In this section, BLM presented a local recharge data for Kane Springs Valley as reported by CH2MHill (2006). CH2MHill presented this data at the Nevada State Engineers hearing in April 2006. Following these hearings and review of both the older regional and the newly acquired data, the Nevada State Engineer permitted up to 1,000 AFY of groundwater from Kane Springs Valley (February 2007, Ruling 5712). As part of the ruling the State Engineer did not accept several of the recent results from the Applicant's studies cited in the above paragraphs and instead relied primarily on the older work of the State Engineer's Office (1971) and Eakin

Comment No. 8-2-2 (Cont.)

grossly inappropriate for the flows being considered herein as will be discussed below, especially when those flows could affect interbasin flow to downstream springs and water rights.

This author has reviewed many EISs in Nevada for many types of projects. These include many mine proposals that will dewater the groundwater to keep the pits dry. Some of these have proposed to pump at rates equivalent to or even less than proposed in the Kane Springs DEIS. NEPA analysis projected similar rates for the Rain mine, Ruby Hills and Round Mountain, and the hydrologic analysis of drawdown and future impacts was much greater for those projects than for this project.

One big difference between the mine projects and Kane Springs is that the mines are temporary: the pumping will cease within 5 to 15 years, and then a lake will form. The draw from groundwater will cease in a few decades. Kane Springs will in all likelihood pump in perpetuity, and the drawdown will expand in perpetuity, especially if the BLM's projected 5000 af/y is ever granted by the State Engineer and pumped. The drawdown will continue to expand especially because it exceeds by from 2 to 4 times the local recharge. Thus, the BLM in mine dewatering/pit lake analyses has required a far more stringent analysis than one for a project which will operate in perpetuity. The BLM should redo this analysis after the proponent has collected sufficient data to complete a groundwater flow model of the system.

Response to Comment No. 8-2-2 (Cont.)

(1964). Ruling 5712 findings and their ramifications are summarized in Sections 3.3.3.3.1. and 4.3.1.3. There is a level of uncertainty associated with this data which is further described in Incomplete and Unavailable Information section at the beginning of Chapter 4. The project proponent intends to satisfy the requirements of Ruling 5712 by pumping up to the appropriated limit. Following that and additional studies, it may reapply for more than the currently appropriated 1,000 af/y. However, this DEIS is for the pipeline right of way which is a viable project based on the NSE's appropriations of 1,000 af/y. Given the results of pumping of the initial 1,000 af/y and review of data from other existing wells to be monitored in the region, the applicant may seek NSE action on pending applications for groundwater beyond the 1,000 af/y already appropriated, up to 5,000 af/y total.

Theis Method Analysis

Comment No. 8-2-3

The DEIS used simple Theis analysis to estimate the drawdown caused by the proposed project. This analysis violated all of the assumptions for using the Theis method even though it attempted to explain how some of the assumptions were satisfied. The DEIS presents the assumptions on page 4-7. They are incorrect and are addressed in order as follows:

The method assumes the aquifer is confined. A confined aquifer is under pressure, such that a well developed in the aquifer would have a water level above the top of the aquifer. There is no indication that this is the case. In Kane Springs, the carbonate is apparently the highest aquifer, which means it would have a free water surface unless there is an aquitard overlying it and preventing groundwater flow flowing upward. The definition of confinement is not that the "sedimentary layer defined as the aquifer have other overlying sediments that restrict the inflow of water from a surficial aquifer" (DEIS page 4-7), although that is part of it.

The small amount of information in the DEIS about well KMW-1 suggests the aquifer is not pressurized. The well is 2000 feet deep and the screen length is 1025 feet, presumably over the bottom length of the well (DEIS page 3-22). If the water level is 992 and 997 feet bgs (Id.), the top of the screen corresponds with the water level. It is possible that individual fracture networks are under pressure, but this does not qualify as an unconfined aquifer. If Figure 3-4 in the DEIS is correct, the water level lies in the middle of the Ely Springs dolomite where it forms a free water surface; it is clearly has

Response to Comment No. 8-2-3

Please see response to comment 8-2-1.

Comment No. 8-2-3 (Cont.)

no confining layer and is unconfined. Using the Theis method for this analysis violates one of its key assumptions – that of a confined aquifer.

It is certainly incorrect to state: "[t]his assumption is clearly met in the current case of extraction from the deep carbonate aquifer, which is overlain by a surficial aquifer that is approximately 200 feet thick." (*Id.*). The water level was just shown to be at least 700 feet below the bottom of the basin fill, so there is no hydraulic connection. But, the BLM's assumption is that no inflow from the surface occurs. There is no data to support that supposition. In fact, if the basin fill aquifer is ephemerally saturated, it likely drains into fractures in the Laketown dolomite and seepage may reach the underlying carbonate aquifer. Unless the BLM obtains data to show that no water leaks from the surface to the aquifer, and without data to indicate the quartzite layer shown on Figure 3-4 is continuous, the BLM should not claim there is no connection and rely on this claim for its analysis.

The aquifer is most certainly not isotropic and homogeneous as claimed on page 4-7. These conditions are not met in a fracture system where secondary permeability provides most of the conductivity and by its nature the system is extremely horizontally anisotropic. The BLM acknowledges this in part by stating that the actual cone of depression may be oval, but then concludes that the method is reasonable.

One Theis method assumption not addressed by the BLM is that the method assumes the aquifer has infinite extent. This means there is an unlimited supply of water to be pumped from the well. The method's mathematics depends on the assumption that flow can occur from all directions without limit. The limited confines of a fracture system completely violate that assumption; the actual drawdown will be much higher because of the limited water source.

The BLM concludes that the method is acceptable because it knows too little about the system. "However, due to the unknown geometry of the Kane Springs Wash Fault system and the potential for further focusing by the Willow Spring Fault, it is believed that the Theis approach provides a reasonable method for estimating the maximum impacts (drawdown) prior to project development" (DEIS page 4-7). This argument can be summarized by saying that since we do not know much about the area, we feel justified in using this simplified analytic technique. The problem is that drawdown caused by pumping in the actual system will be much higher than calculated using the idealized conditions used by the BLM. The direction the drawdown cone extends from the well will not be circular; it will extend further in some directions.

The BLM also used a single well as a proxy for the multiple wells; this is incorrect in this situation because up to six wells would be spaced every mile along the west side of Kane Springs Valley in a line. BLM's proxy method may be accurate for a symmetric well field but it is most certainly not appropriate where the wells are spaced along a line which is longer than the valley is wide.

Comment No. 8-2-3 (Cont.)

BLM also used inappropriate parameters in the analysis. The storage coefficient of 10^{-4} is very high, especially for fractured carbonate rock. Faunt et al (2004) found that the specific storage ranged from $1.5x10^{-8}$ to $6.3x10^{-2}$ and calibrated their model based on the storage coefficient being $7.0x10^{-8}$ m^{-1}. Converting the calibrated specific storage would result in a value much lower than 10^{-4}.

The BLM improperly argues that storage coefficient is not very important. "The effect of the storage coefficient on the drawdown is greatest near a well or immediately after the start of pumping. At longer times or greater distances, **an order of magnitude change in storage coefficient will result in a relatively small change in the drawdown**" (DEIS, page 4-7, emphasis added). This indicates a lack of understanding of the storage coefficient. It is the amount of water that must be pumped from a unit area for a unit drop in potentiometric surface. An order of magnitude change means that 10 times more or less water removal will cause the same drawdown. In other words, if a given pumping rate will cause 10 feet of drawdown in a year for $S = 10^{-4}$, it will cause 100 feet of drawdown for $S = 10^{-5}$. There is a huge difference dependent on the estimate of storage properties and this estimate is a bad one that will cause the DEIS to grossly underestimate the drawdown.

BLM also used transmissivity values which may be inappropriate (in addition to the storage value discussed above). In the Kane Springs ruling, the Nevada State Engineer ruled that the consultants had overinterpreted the results from the pump test which the BLM accepted for this DEIS. The BLM justified the use of a high transmissivity by comparing it with values in the Prudic et al (1995) professional paper, which had been written to document the results calculated from a large scale steady state flow model. The transmissivity referred to resulted from the steady state calibration of that model. The highest values reported by Prudic et al (1995) were a little greater than 400,000 gpd/ft. Only six percent of the 480 carbonate rock cells in the upper model layer and two percent of all 2456 cells in the lower, all bedrock, layer had transmissivity exceeding 116,000 gpd/ft (Prudic et al 1995, page D43; this is based on a conversion from ft^2/s to gpd/ft) which appear to apply in the vicinity of Kane Springs; high values at Kane Springs would be due to the fact that high transmissivities in the model were clustered upgradient from discharge points (in this case, Muddy Springs) (Prudic et al 1995, page D39). Prudic et al also indicated that the errors in transmissivities are unknown, but could be as much as a factor of 5 (*Id.*).

The biggest problem with the transmissivity estimates from the Prudic et al model is that they are based on isotropic, homogeneous conditions being assumed for a 37.5 square mile model cell. The reality is that flow is through fractures and the calibrated values are a distinct blending of conditions. It is poor support for the use of the pump test results.

Regional Springs

Comment No. 8-2-4

The DEIS claims that Muddy River, Rogers and Blue Point Springs will not be affected by this pumping. This is primarily based on data presented (DEIS, Table 3-4) indicating

Comment No. 8-2-4 (Cont.)

that the amount of carbonate water present in the springs decreases with distance south from the project site toward the Colorado River.

The raw data for this table was not presented and not reviewed herein. In general, Table 3-4 reports that most of the springs, Pahranagat, Coyote, Garnet, Muddy River Big Muddy and California Wash, contain about 60% carbonate water while Rogers and Blue Point Springs contain 39-50 and 42-53%, respectively. Only for the last two was there a range presented; this suggests that if there is more than one observation, there will likely be a range. It is expected that these warm springs have local recharge because the groundwater goes through surface layers, including fill, which would contribute local water just before discharging.

BLM does not explain why springs near the Colorado River include more local recharge which is counterintuitive because the springs discharge in an area of very low rainfall. One possibility not discussed is that water discharging from the Muddy River springs percolates, or becomes river recharge, back into the aquifer system. Once the water flows on the surface, it would experience some evaporation and take on characteristics of local recharge water.

The BLM appears to argue that because the amount of local recharge water increases with distance from Pahranagat Valley, the pumping would not affect these springs (DEIS, page 4-9). The BLM also cites ruling 5712 which argues that there is not substantial evidence that pumping 1000 af/y would impair flows at the springs; it is indeed ironic that the BLM cites this ruling in support of its conclusion of no impact on the springs while ignoring the ruling's science (see discussion above).

However, the BLM may have misrepresented the State Engineer who writes: "The State Engineer finds there is not substantial evidence that the appropriation of the limited quantity being granted under this ruling will likely impair the flow at Muddy River Springs, Rogers Springs or Blue Point Springs" (Ruling 5712, page 20). The State Engineer does not conclude there is no impact; he concluded there was no evidence which in a State Engineer's hearing process means that the protestants could not bring sufficient data forward to prove there would be an impact.

The problem with the BLM's conclusion is that there is no place else for the water to go. If pumping decreases the groundwater flowing from Kane/Coyote Springs valleys into the Muddy River Springs basin, as there is no question it will, then water balance considerations require discharge from Muddy River Springs to eventually be decreased. The State Engineer's conclusion appears to be based on the relatively small proportion that 1000 af/y is of the total amount discharge from the springs. Even if all of it were eventually lost from the springs, it may not be sufficient for him to have denied the applications. Ruling 5712 specifically does NOT consider the pumping of 5000 af/y (as the BLM misquotes the ruling).

Also, the BLM relies on the stipulation agreement between the LCWD and USFWS to protect the springs. Unfortunately, by the time the cessation or reduction of pumping in

Response to Comment No. 8-2-4

It is common practice to use a simple analytical calculation when insufficient data precludes the use of a numerical model. In all modeling, assumptions must be made regarding the site conditions versus the mathematical assumptions. While conditions at this site differ from the mathematical assumptions, we believe that application of the Theis equation does provide a reasonable approximation to change in the aquifer conditions expected during pumping. While it is true that the radius of influence around a pumping well will continue to expand with time, it does so with an exponentially decreasing effect. Thus the results shown in Table 4-1 after 100 years of pumping will not change substantially if continued for a longer period of time.

Kane Springs could help recover the springs, it would be too late. The BLM has a requirement in a NEPA document to actually conduct an analysis of the effects of this agreement.

Cumulative Impacts

Comment No. 8-2-5

The DEIS lists numerous projects which are occurring or may occur in the area of Kane Springs. It does not do an independent analysis of the cumulative impacts, but does provide evidence of the gross impacts that would occur. Table 4-7 (DEIS page 4-59) lists three hydrographic areas, Kane Springs, Coyote Spring and Muddy River Springs, as the cumulative impacts area to be considered. Other projects are outside the flow area; the BLM does not consider whether pumping could change the boundaries.

Existing permitted water rights exceed 76,000 af/y which exceed the total 55,000 af/y perennial yield; pending applications total 231,446 af/y, with more than 202,000 af/y in Coyote Springs Valley (Table 4-7, DEIS). Obviously, the development of all these rights would devastate the groundwater resources in the area.

The DEIS reports three modeling studies which each show devastating cumulative impacts of developing the proposed projects. One study conducted by SNWA of pumping 27,512 af/y by SNWA, 4600 af/y by Coyote Springs Development, 2500 af/y by Nevada Power and 7200 af/y by Moapa Valley Water Districts in Upper Moapa Valley would lower the water level in the carbonate aquifer in the Muddy Springs area by 10 feet and decrease the discharge by 4 cfs within 61 years (DEIS, page 4-60). A BLM, NPS and FWS model of a similar area and pumping predicted that there would be reduction of flow in the Muddy River of up to 33% (*Id.*). Both show significant effects even though the results are substantially different. A USFWS model of pumping up to 16,100 af/y from Coyote Spring Valley and California Wash found that flow reduction of 6 percent at the Moapa Valley Wildlife Refuge within 5 years.

The BLM should consider the results of the cumulative impacts analysis presented and do whatever it can to minimize these projects. The BLM could start by improving its analysis of the Kane Springs project and imposing its own restriction, including denying the right-of-way for building the project because the overall pumping proposed will seriously impact resources for which the BLM is responsible.

Recommendations

Comment No. 8-2-6

1) The hydrology aspects of this DEIS have been shown to be grossly inaccurate and insufficient. The water resources sections should be redone considering the following recommendations.

Comment No. 8-2-7

2) The BLM should complete new recharge estimates. It should consider using the estimates from Flint et al (2004).

Response to Comment No. 8-2-5

The reviewer is correct in that the limited lithologic information does not show a continuous aquitard. However, the response of the well during pumping indicates a storage coefficient of 10-4 which is consistent with confined to semi-confined conditions assumed for the study area.

The BLM concurs that the statement "clearly met" is incorrect and the text has been revised in section 4.3.1.3. However, the results from the aquifer test show a storage coefficient of 10-4 which is indicative of semi-confined conditions.

No aquifer in the real world is isotropic and homogeneous. Additional explanation of the validity consequences and uncertainties of this assumption are provided in section 4.3.1.3. of this FEIS.

The commenter is correct that this assumption was not discussed in detail but is listed as a basic assumption. The text has been revised in section 4.3.1.3. to clarify that the carbonate aquifer is nearly infinite in extent, but that fracture flow could limit its response.

With little data (one well) it is not possible to conduct more sophisticated modeling. As described in Chapter 4.3, it is assumed the drawdown cone will not be linear. Whether the Theis model over or under-predicts the drawdown, remains uncertain. The drawdown from a single well pumping at 5 times its nominal rate, will be greater in the vicinity of the well, than that for 5 separate wells, and thus represents a worst-case scenario.

The comment is true close to the pumping well. However, at greater distances this effect diminishes exponentially.

The values for the transmissivity were obtained from the aquifer test. Comparison with the Prudic model (Prudic D.E., J.R. Harrill, and T.J. Burbey. 1995. Conceptual Evaluation of Regional Groundwater Flow in the Carbonate Rock Province of the Great Basin, Nevada, Utah, and Adjacent States. United States Geological Survey Professional Paper 1409-D) indicates that the result is in reasonable agreement. Table 4-1 shows the computed drawdown for two values of transmissivity which are representative of the local aquifer conditions affected by the Willow Springs Fault (300,000 gpd/ft) and another representative of a lower value, which would be more applicable for a long-term pumping estimate (150,000 gpd/ft).

Response to Comment No. 8-2-6

This statement is based on the NSE ruling 5712 which finds that there is not substantial evidence that the appropriation of the limited quantity being granted under this ruling will likely impair the flow at Muddy River Springs, Rogers Springs or Blue Point Springs.

This argument implies that all the water flowing through Kane and Coyote Springs Valleys is captured by the Muddy River Springs. It is highly likely that there is significant flow under and around the Springs which would reduce the effect (if any). The stipulated monitoring and mitigation plan was examined thoroughly by the USFWS. In addition, the Nevada State Engineer has required that a monitoring plan by approved by his office.

Response to Comment No. 8-2-7

Comment No. 8-2-8

3) The BLM should reconsider and redo its interbasin flow estimates for the Kane Springs Valley. Prudic et al (1995) and Plume (1998) may provide adequate scientific background.

Comment No. 8-2-9

4) The BLM should complete a groundwater model for the flow system of which Kane Springs is a part. It should be predictive and be used to analyze this project and cumulative impacts of the projects listed in the DEIS. The BLM could use the NPS model currently being developed as referenced in the DEIS.

Comment No. 8-2-10

5) Where necessary, the BLM should require the project proponent to collect data necessary to improve the parameterization of the groundwater flow model of the system.

Comment No. 8-2-11

6) The BLM should use its model to analyze the cumulative impacts of the proposed projects in the flow system.

References

Faunt, C.C., J. B. Blainey, M. C. Hill, F. A. D'Agnese, and G. M. O'Brien, 2004. Transient Numerical Model, Chapter F in Belcher, W.R. (ed.), Death Valley Regional Ground-Water Flow System, Nevada and California—Hydrogeologic Framework and Transient Ground-Water Flow Model, Scientific Investigations Report 2004–5205. Prepared in cooperation with the U.S. Department of Energy, Office of Environmental Management, National Nuclear Security Administration, Nevada Site Office.

Flint, A.L., L.E. Flint, J.A. Hevesi, and J.B. Blainey, 2004. Fundamental concepts of recharge in the Desert Southwest: A regional modeling perspective, pages 159-184 in Hogan, J.F., F.M. Phillips, and B.R. Scanlon (ed.), Groundwater recharge in a desert environment: the southwestern United States. American Geophysical Union, Washington DC.

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Response to Comment No. 8-2-7

Table 4-7 has been updated and includes Kane Springs Valley, Coyote Spring Valley and Muddy River Springs. The reviewer correctly notes that the pending water rights applications exceed the perennial yield for some of the basins. The NSE will determine which of the applications will be approved.

Cumulative influences of the projects in the cumulative impact area are addressed in section 4.20.4.2 of this FEIS. In addition, the NSE found that there is not substantial evidence that the appropriation of the limited quantity being granted under this ruling will likely impair the flow at Muddy River Springs, Rogers Springs or Blue Point Springs. Finding of NSE ruling are presented in Section 3.3.3.3.1.

Response to Comment No. 8-2-8

The NSE has allocated 1,000 af/y based on the current recharge estimates. Before any increase in pumping can occur the proponent would have to convince the NSE that additional recharge is available.

Response to Comment No. 8-2-9

The NSE has allocated 1,000 af/y based on the current flow estimates. Before any increase in pumping can occur the proponent would have to convince the NSE that additional flow is available.

Response to Comment No. 8-2-10

While NPS is in the process of developing a groundwater flow model for the general area, the results of this model are still pending and currently not available. Furthermore, this model is not site specific to Kane Springs Valley and is not based on any more site specific data for Kane Springs Valley than that presented in the FEIS.

Response to Comment No. 8-2-11

BLM is not required to develop a groundwater model but rather to disclose impacts based upon the best available data. The best available data does not support construction of a groundwater model and such is beyond the scope of this EIS. It should also be noted that a model currently being developed by NPS, due to likely limitations in data availability and related uncertainty, may not provide any better disclosure of possible impacts than the information presented in the FEIS.

Title: Fueling Population Growth in Las Vegas: How Large-Scale Groundwater Withdrawal Could Burn Regional Biodiversity

Key words: groundwater, water rights, public trust, endangered species, ecological integrity

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Fueling Population Growth in Las Vegas: How Large-Scale Groundwater Withdrawal Could Burn Regional Biodiversity

JAMES E. DEACON, AUSTIN E. WILLIAMS, CINDY DEACON WILLIAMS AND JACK E. WILLIAMS

Abstract: *Explosive growth in Las Vegas, Nevada, has stimulated demand for additional water supplies. To meet these needs, local officials hope to obtain rights to about 200,000 acre-feet/year from a regional groundwater aquifer extending from Salt Lake City, Utah, to Death Valley, California. Officials from satellite communities are pursuing rights to an additional 870,487 acre-feet/year. If granted, these new permits would trigger declines in groundwater across at least 78 basins covering nearly 130,000 km^2. Water rights decisions historically interpreted economic development as a more compelling "public interest" than maintenance of natural systems. If economic development continues to drive allocation decisions, consequent declines in the water table, spring discharge, wetland area, and stream flow will adversely impact 20 federally-listed species, 137 other water-dependent endemics, and thousands of rural domestic and agricultural water users in the region. Reducing consumption and implementing cost-effective technologies, such as recovery of urban runoff and shallow saline groundwater, indirect potable water reuse, and desalinization, offer ways to meet metropolitan and ecological needs within the limits of the resource.*

Key words: groundwater, water rights, public trust, endangered species, ecological integrity

Some of the most rapid population growth in the United States is occurring in intermountain west and southwest urban areas where water is in short supply and aquatic ecosystems are stressed (Naiman and Turner 2000, Fitzhugh and Richter 2004). As a result, municipal water consumption is on the rise and water from rural areas is being shifted toward municipal uses. Competition for water is felt keenly in

southern Nevada where water is scarce, human population growth is explosive, and confrontations between biodiversity and human needs for water have a long and litigious history.

With an annual growth rate of 5.5% and a population exceeding 1.8 million, Las Vegas, Nevada is among the fastest growing metropolitan areas in the nation. After use of local groundwater produced up to 2 m of land subsidence and a 91 m decline in water table in parts of the metropolitan area (Burbey 1995), the community became primarily dependent on the now drought-stricken Colorado River as its major source of supply. Water demand exacerbated by daily per capita consumption ranking among the nation's highest (both in terms of single family consumption at 660 l/person/day, and total system-wide consumption at 971 l/person/day, Western Resource Advocates 2006) has reached the limits of current supply.

The Southern Nevada Water Authority (SNWA) is pursuing a multi-pronged approach to meet the growing municipal water demand (SNWA 2005). In 2004, SNWA purchased 1.25 million acre-feet of Colorado River water from Arizona to be delivered over the next 15 years as a stop-gap measure. SNWA also has advocated vigorously for new operating rules, currently under review by the Secretary of the Interior, to be used during severe drought conditions on the Colorado River. Further, SNWA plans to tap a regional deep carbonate aquifer extending across central and southern Nevada from Utah to California (SNWA 2004), a tactic simultaneously being pursued by other Nevada counties (e.g., Lincoln, Nye and White Pine).

Great Basin spring systems, although small and isolated, harbor a large proportion of the region's biodiversity and have received significant conservation attention (Deacon and Minckley 1991, Sada and Vinyard 2002). Twenty species listed under the federal Endangered Species Act (ESA) depend upon springs, spring-fed wetlands, and streams in the 78-basin area most likely to be impacted by the proposed SNWA groundwater withdrawals (table 1). Many listed taxa are "umbrella species" that provide protection to little-known, non-listed sympatric species, including at least 137 spring-dependent animal taxa—primarily

locally endemic aquatic springsnails, insects, and fishes. The Nevada Natural Heritage Database identifies 347 sensitive taxa within the area (Nevada Natural Heritage Program Database 2005).

Our purpose is to critically examine the SNWA proposals for large-scale groundwater withdrawal, evaluate their potential impacts on aquatic biodiversity, and evaluate whether Nevada water law can avoid decisions "detrimental to the public interest" for a project of this size. The literature reviewed herein demonstrates that deep carbonate and shallow basin fill aquifers are interconnected across the various basins likely to be impacted and that SNWA applications, if granted, are likely to reduce or eliminate many spring and wetland communities in the region with consequent adverse impacts on the rich diversity of spring and wetland-dependent endemic species. We contend that large-scale groundwater withdrawal in Nevada, the most arid state in the US, poses a major under-appreciated threat to biodiversity.

The groundwater flow system

Carbonate rocks deposited in a shallow sea during the Paleozoic underlie a 259,000 square-km carbonate-rock province in the eastern two-thirds of the Great Basin (Fiero 1986). During late Mesozoic, compression, uplift, and low-angle thrust faulting deformed this carbonate layer. East-West extension in mid-Tertiary thinned the carbonate section, caused block faulting, and gave rise to the north-south orientation of mountain ranges characteristic of the Basin and Range. Subsequently, predominantly northeast-southwest oriented fractures and joints formed throughout the brittle limestone and dolomite deposits (Winograd and Thordarson 1975).

While much of the originally 12 km thick carbonate layer in Nevada has become deformed, dismembered and thinned, there remains a 110-160 km wide central corridor of contiguous carbonate rocks typified by an extensive interconnected subterranean fracture network extending 1 to 1.5 km or more below land surface. This corridor integrates a regional-scale drainage network extending from near the Utah-Nevada border through southern Nevada's Spring Mountains and into California, and is capable of transporting large volumes of water (Riggs et al. 1994).

Groundwater typically flows from high elevation montane recharge areas to discharge areas in basin fill sediments of valley lowlands. Flow occurs at various scales resulting in the superimposition of numerous relatively shallow localized basin fill aquifers on the regionally integrated deep carbonate aquifer. Because of the fractured nature of underlying carbonate rocks, water carried in the deep aquifer may originate from all elevations throughout the central corridor. Regardless, shallow aquifers discharge primarily via evapotranspiration and through local springs, while deep aquifers discharge mostly at regional warm springs (Prudic et al. 1995).

Regional springs in the 78 basins examined are the primary natural discharge points from eight major groundwater flow systems (figure 1). Springs from Preston Big Spring southward to Ash Spring are supplied principally from montane recharge areas in east-central Nevada at the "top" of the regional drainage net. Muddy River springs are supplied principally from the north through the central corridor, but also may receive some recharge from nearby Sheep Mountains. Ash Meadows springs are supplied predominantly from recharge areas on the north and northeast slopes of the nearby Spring Mountains, but, along with springs on the east side Death Valley, are partially dependent on regional groundwater movement from the north-northeast through the central corridor (Dettinger et al. 1995). Las Vegas and Pahrump valleys receive most of their groundwater from recharge in southern Nevada's Spring Mountains.

Estimated annual groundwater recharge to the eight flow systems is about 900,000 acre-feet/year (Harrill and Prudic 1998), with about 80% of that attributable to the 78 basins examined (table 2). Subsurface movement of water from one flow system to another supplements groundwater recharge from more local sources. For example, approximately 21,000 acre-feet/year, principally from the White River flow system (a northern subdivision of the Colorado River flow system), supplements groundwater in the Death Valley flow system (Dettinger 1989). Because there is equilibrium between aquifer recharge and natural discharge, wells continuously extracting any part of the annual recharge virtually guarantee equivalent reductions in natural discharge (Dettinger et al. 1995).

Spring systems and groundwater withdrawal

The large number of endemic species occurring at regional springs in the carbonate rock province is due in no small part to the reliability, consistency, and predictability of these wetland and aquatic habitats over millions of years. The springs in Ash Meadows, for example, have been major discharge points from the deep aquifer for the past two to three million years, although three million years ago those springs were more widespread and discharge was greater than at present (Hay et al. 1986).

Climatic variation produced changes in groundwater levels in Ash Meadows over the past 116,000 years, including a 9 m decline in groundwater in the last 15,000 years as Pleistocene lakes disappeared (Szabo et al. 1994). It is notable that over the past century the water table in the adjacent Pahrump and Las Vegas valleys has experienced an extreme drop attributable to groundwater pumping that dwarfs this climatically induced decline.

Development in Las Vegas Valley began in the early 1900s. Groundwater pumping led directly to failure of major valley springs in about 1957 (Harrill 1976), causing extinction of the endemic Las Vegas dace (*Rhinichthys deaconi*) (Miller 1984). Development in Pahrump Valley to the west of Las Vegas proceeded more slowly. None-the-less, Raycraft Spring failed in 1957. Bennett's Spring dried in 1958 and Manse Spring followed in 1975 (Soltz and Naiman 1978, Harrill 1986), extirpating the endemic Pahrump poolfish (*Empetrichthys latos*) throughout its historic range (Deacon 1979) and eliminating a local population of the Spring Mountains pyrg (*Pyrgulopsis deaconi*) (Hershler 1998). Groundwater declines of up to 30 m occurred by 1975 in Pahrump Valley (Harrill 1986) and up to 91 m by 1990 in Las Vegas Valley (Burbey 1995).

In Ash Meadows, major groundwater development initiated in the late 1960s, after reducing both spring discharge and the water table (Dudley and Larson 1976), was curtailed in 1977 and stopped by 1982 (Dettinger et al. 1995). Spring discharge recovered (e.g., Fairbanks Spring, figure 2) and the groundwater table rose steadily through 1987, but reinitiated a slow decline in 1988 that continues to the present (Riggs

and Deacon 2004). An analysis by Bedinger and Harrill (2006) indicates that the decline is unrelated to climatic variation, and instead is due to groundwater withdrawal for irrigation at the Amargosa farms area about 25-30 km northeast of Devils Hole. Though some springs throughout the carbonate province tend to demonstrate stable flow, in many valleys there is evidence of decline (figure 2).

As of February 2006, existing groundwater permits authorized withdrawal of 730,587 acre-feet/year from the 78 basins we examined (table 2). This included 156,908 acre-feet/year for municipal uses in the urban areas of Las Vegas and Pahrump and about 573,679 acre-feet/year supporting the present agricultural and rural livelihoods of the area's residents.

These existing permits appropriate 102% of the 78-basin area's cumulative perennial yield, slightly more water than the State Engineer has determined is available each year over the long term. However, permitted withdrawals are not spaced evenly across the landscape, but range from 0% to 1660% of the perennial yields estimated for individual basins. For example, valid groundwater rights presently exist for 376% of perennial yield in Las Vegas Valley, 331% in Pahrump Valley, and 113% for the seven basins (combined in the State Engineer's records) that include Ash Meadows. Existing rights exceed 100% of perennial yield in five of the eight major flow systems underlying the 78-basin area.

Looming threats

The Las Vegas Valley Water District (now SNWA) filed 147 applications in 1989 for rights to unappropriated groundwater from 26 of the 78 basins overlying the region's major groundwater flow systems. Since originally submitted, some applications have been withdrawn and others modified to accommodate rural interests (SNWA 2004). At present, SNWA hopes to obtain rights to 180,800 of the 330,000 acre-feet/year of groundwater for which they have applied. Wells to supply the water are to be drilled into shallow valley fill aquifers, as well as the deep carbonate aquifer of central, eastern, and southern Nevada. The first phase is planned to begin supplying water to Las Vegas as early as 2007, with additional wells and associated pipelines proposed over the coming 50 years (SNWA 2004).

SNWA estimates that by 2050, it will need to add 375,000 to 475,000 acre-feet/year to the 471,786 acre-feet/year presently supplied predominantly from the Colorado River (SNWA 2005). Negotiations with other Colorado River Basin states reached an agreement in principle on 3 February 2006 that SNWA would not exercise its right to about 120,000 acre-feet/year of surface water from the Virgin and Muddy rivers so long as efforts by all basin states to augment flows of the Colorado River provide Nevada with the equivalent of 75,000 acre-feet/year (Jenkins 2006). The agreement also permits Nevada and other basin states to claim "augmentation credit" for water added to the river from other sources. If this augmentation credit is included in the final Colorado River drought condition operations rule, SNWA can claim a credit for any Nevada groundwater that passes through the Las Vegas sewage system, including any water resulting from the new permits for which it has applied. This results in a 70% bonus and constitutes a substantial additional incentive to develop the proposed groundwater project.

Groundwater to be removed from regional aquifers by SNWA does not represent total anticipated new demand on those aquifers. Stimulated by Las Vegas' growth, satellite communities within a few hours drive of Las Vegas (e.g., Coyote Springs, Mesquite, Pahrump, Sandy Valley, Prim, and Lincoln County communities) are being planned, or are expanding rapidly. As of 20 February 2006, those satellite communities were responsible for most of the pending applications for an additional 870,500 acre-feet/year of groundwater from the 78 basins.

Probable future effects of groundwater development

Following the 1989 applications by Las Vegas Valley Water District for all unappropriated groundwater in much of eastern, central, and southern Nevada, considerable effort was directed toward evaluating probable impacts. Schaefer and Harrill (1995) produced a conceptual model of effects on the regional groundwater table, based on the assumption that the project now administered by SNWA was the only source of groundwater removal throughout the region, and total annual extraction was limited to 180,800 acre-feet. Their work suggested effects would be evident throughout the 78 basins examined

here. Schaefer and Harrill's work was evaluated and compared to SNWA's ongoing modeling efforts by Principia Mathematica (1997), who, in the process developed their own numerical model. Several groundwater models have been developed for specific basins within the area of probable impact (Durban 2006, Elliott et al. 2006, Myers 2006), most recently focusing on Spring Valley from which SNWA hopes to extract about half of the 180,800 acre-feet per year they seek.

Except for SNWA, all research models produced results consistent with those of Schaefer and Harrill (1995) which projected groundwater level declines of about 0.3 - 488 m throughout 78 basins extending from Sevier Lake, Utah, to Death Valley, California. They suggested a new steady-state might be reached in 100-200 years with groundwater level declines of 15-152 m predominating in both shallow and deep aquifers. Evapotranspiration throughout the region would decline as water tables dropped below the level of phreatophytic root penetration. Over the first 100 years, regional springs fed by the carbonate aquifer would lose about 2-14% of their flow. They would continue to decline over the next 100 years, and may not stabilize before failing. The divergence of conclusions from SNWA is due largely to the fact that SNWA modelers tended to estimate higher precipitation-induced recharge and evapotranspiration-induced discharge than other modelers. This tendency is particularly evident when comparing the model submitted by SNWA in support of their application for water rights in Spring Valley (Durban 2006) to models submitted by the Western Environmental Law Center (Elliott et al. 2006, Myers 2006) in support of their protest to those applications.

Development dreams

Within the 78 basins examined herein, total water demand would be increased to 127% of perennial yield by adding only the 180,800 acre-feet/year sought by SNWA. Addition of the 870,487 acre-feet/year sought by satellite communities would push demand to about 1.8 million acre-feet/year, or 250% of the region's estimated perennial yield. Approval of all applications pending as of February 2006 would put aquifer demand at 271% of perennial yield.

The State Engineer, in accordance with decisions based on state law, is likely to authorize permits for less water than has been requested. While location, depth, and quantity of withdrawal strongly influence the response in the aquifer, addition of only the incremental amount sought by SNWA to the amount withdrawn under existing rights will produce greater reductions in the groundwater table, evapotranspiration, and spring discharge, than simulated by Schaefer and Harrill (1995).

In Lincoln County, applications for groundwater rights by Vidler Water Company tend to locate points of withdrawal closer to regional discharge areas than do applications by SNWA. Consequently, groundwater pumping by Vidler likely will impact regional spring discharge more quickly than will pumping by SNWA whose impacts probably will manifest only decades later. Regional springs most likely to be influenced first by Vidler and later by SNWA wells include the large warm springs in Panaca Valley (Panaca Warm Springs), Pahranagat Valley (Ash, Crystal, Hiko springs), White River Valley (Preston Big, Lund, Moorman, Flag springs), and the Muddy River Springs.

In Nye County, proposed SNWA wells are likely to impact regional spring discharge in Railroad Valley (Duckwater, Lockes and other springs) and Ash Meadows. Though the response will be long delayed by distance from the wellhead, regional springs in Ash Meadows are most likely to be adversely influenced by SNWA wells proposed for Indian Springs, Three Lakes and Tikaboo valleys in the northeastern portion of the Ash Meadows Flow System (Riggs and Deacon 2004). Even before substantial reduction in spring discharge occurs in Ash Meadows, the first impact on existing water rights may be a lowering of the water level at Devils Hole, the one place in the entire carbonate rock province where a surface water right is objectively tied to groundwater level. In fact, there is mounting evidence to suggest that groundwater pumping from the regional aquifer already is producing a decline in the water level at Devils Hole (Bedinger and Harrill 2006).

State water management

The State Engineer manages groundwater and surface waters under Nevada law that recognizes connections between the two. Conflicts between users, whether of surface or groundwater, are resolved according to prior appropriation principles. Thus, senior water rights, both surface and groundwater, limit junior rights – a limitation that would constrain the groundwater withdrawal plans discussed above.

In evaluating the potential impacts of proposed groundwater permits on existing rights, the State Engineer must make a water availability determination based on the aquifer's perennial yield (similar to, but distinct from sustainable yield). Permits beyond the perennial yield of the target aquifer may not be issued.

The Nevada Division of Water Resources (1992) definition of perennial yield (i.e., "*the amount of usable water from a ground-water aquifer that can be economically withdrawn and consumed each year for an indefinite period of time*" so long as it does "…*not exceed the natural recharge to that aquifer and ultimately is limited to maximum amount of discharge that can be utilized for beneficial use*") can be a substantial barrier to conservation efforts. While this definition conceptually prohibits the mining of groundwater, it offers little or no protection for surface water and thus is not a standard amenable to maintenance of wetlands, springs, stream flows, or biodiversity. It also fails to maintain the groundwater table or subsurface interbasin flows. Furthermore, the technical accuracy of perennial yield estimates for some local and regional aquifers has been questioned (SNWA 2003).

Malmburg's (1967) estimate of perennial yield for Pahrump Valley provides an excellent example of the methods and assumptions commonly used. The maximum "salvageable discharge" available for appropriation included: 1) all net spring discharge, 2) estimates of evapotranspiration from areas of shallow groundwater, 3) estimates of water salvageable from the amount leaving the shallow aquifer as subsurface outflow from the basin, and 4) estimates of water salvageable from the amount leaving the basin via subsurface outflow in the deep aquifer.

This method of determining perennial yield anticipates that permits issued will dry all springs and kill all phreatophytes, with consequent losses in biodiversity. It anticipates lowering of the groundwater

table, a consequent increase in pumping costs, and the likelihood of land subsidence. It foresees reductions in both shallow and deep interbasin subsurface flows supplying down-gradient basins and their springs, thereby establishing a "drain" on shallow aquifers in surrounding valleys and in the regional deep carbonate aquifer (figure 3). These predictable consequences result directly from issuance of permits equivalent to 100% of "perennial yield." Unfortunately, despite the clear requirements of law, permits commonly are issued for many times that amount.

Clearly, several factors confound attempts to unambiguously quantify the extent of expected detrimental impacts. Predicting the "final steady state" of the groundwater system in response to massive groundwater removal is complicated by disagreement over recharge from precipitation, discharge from evapotranspiration, connectivity among aquifer components, and the time required to reach a new equilibrium. There is no question, however, that the state's definition of and methodology for determining the quantity of water that legally may be withdrawn fails to envision maintenance of natural systems. As a result, it is nearly impossible for the State Engineer to issue groundwater permits in support of urban development while protecting existing water rights, including those protecting recreational resources and biodiversity.

How might protection be achieved?

In the 1976 U.S. Supreme Court case *Cappaert v. United States*, the court ruled that Devils Hole had an implied reservation of water, noting that a 1952 Presidential Proclamation made Devils Hole a disjunct part of Death Valley National Monument (now National Park) (Deacon and Williams 1991). The court stated that "[w]hen the federal government withdraws its land from the public domain and reserves it for a federal purpose, the government, by implication, reserves appurtenant water then unappropriated to the extent needed to accomplish the purpose of the reservation." The Presidential Proclamation specified the Devils Hole withdrawal was intended to protect the "unusual features of scenic, scientific, and education interest . . . [including] a remarkable underground pool . . . [and] a peculiar race of desert fish." By this

language, the federal government secured its right to the groundwater required to maintain the pool in Devils Hole and the endemic Devils Hole pupfish (*Cyprinodon diabolis*), vesting the right with a 1952 priority date. This implied reservation prohibits subsequent junior water users from receiving water rights that undermine conservation of the unique features of Devils Hole that led to its withdrawal, thereby benefiting not only the pupfish but also the endemic Devils Hole riffle beetle (*Stenelmis c. calida*), other species in the system, and it's unique ecology and geology.

The federal government also has reserved other centers of aquatic biodiversity because of their unique water resources and accompanying wildlife. Pahranagat National Wildlife Refuge (NWR), established in 1963 to provide habitat for migratory waterfowl, also protects an endemic subspecies of speckled dace (*Rhinichthys osculus* ssp.). Moapa NWR, established in 1979, provides habitat for the endangered Moapa dace (*Moapa coriacea*) and other rare aquatic spring endemics. Ash Meadows NWR, withdrawn in 1984 "to provide water habitat resources in Nevada for the protection of waterfowl and fish" protects a total of 15 federally-listed species, including nine dependent on springs or spring-fed wetlands as well as 103 "at-risk" plant and animal taxa. If pressed, the courts likely would determine that the federal government has implied water rights to groundwater germane to the purposes of all these reservations with a priority date corresponding to their date of withdrawal. It is possible the implied reservation of water doctrine also would apply to lands acquired—as opposed to reserved—after statehood; however, that application has never been tested in court.

While the principles learned from *Cappaert* provide some protection when a species inhabits habitat within reserved lands, the federal ESA may afford additional protection to threatened and endangered species dependant upon habitat supported by discharge from groundwater aquifers. While current large-scale groundwater plans presently do not envision expenditure of federal monies, the proposals do envision many well sites on and pipeline corridors across Bureau of Land Management administered lands, necessitating a federal permit and triggering the ESA's Section 7 consultation

provisions to ensure that federal actions do not jeopardize listed species. Furthermore, Section 9 of the ESA prohibits "take" of listed species regardless of whether a federal action is involved.

All water within Nevada belongs to the public. The Nevada State Engineer has a "continuing responsibility as a public trustee to allocate and supervise water rights so appropriations do not 'substantially impair the public interest in the lands and waters remaining'" (*Mineral County v. Dep't of Conservation and Natural Res.*, 20 P.3d 800, 808-09 (2001) quoting *Illinois Central R.R. v. Illinois*, 146 U.S. 387, 452, (1892)). Traditionally, the public trust doctrine protected the public's interest in navigation, fishing, and commerce. However, the doctrine has evolved to encompass additional public values, including recreational and ecological uses.

Fahmy (2005) observed that, subsequent to the *Cappaert* decision, the State Engineer increasingly has interpreted the "public interest" to include environmental values such as endangered species. Beyond helping conserve "at-risk" species, Fahmy suggests that continuing judicious use of the public interest standard also could help maintain state sovereignty over water resources allocation and administration.

Achieving ecologically sustainable water use

Providing for the water needs of a growing Las Vegas Valley by relying on historical practices is a recipe for an ecological disaster that includes loss of wetlands, spring-dependant species, and phreatophytic communities. New technologies can help increase water availability and efficiency of use, but in the long run are futile unless combined with reduced growth of human populations. Reducing per capita consumption could align Las Vegas residents' water use with those already realized in other major southwestern U.S. cities (e.g., Albuquerque and Tucson, figure 4).

Water for lawns and other external use outside the home offers the largest opportunity for cutting back single-family residential consumption. Mayer et al. (1999) calculated that approximately three-fourths of residential water consumed in Las Vegas could be attributed to external rather than internal use. Western Resource Advocates (2006) calculates that, by 2030, converting 50% of Las Vegas Valley's single

family residential landscaping to xeriscape would reduce demand by 80,000 acre-feet/year, while indoor water conservation could reduce demand by more than 70,000 acre-feet/year.

As in other southwestern cities, substantially lower consumption rates would result from increasing the price differential between tiers in the tiered rate structure already in place, and by implementing a range of other widely recognized measures to improve efficiency of water use (Western Resource Advocates 2003, 2006). For new developments where retrofitting is unnecessary, low per capita consumption can be even more easily achieved simply by requiring serious water efficiency as a condition of development. Opportunities to reduce per capita water consumption to the low rate of 380 l/person/day have been identified for a new 648 ha development in Las Vegas (Rocky Mountain Institute 2003). Comparable opportunities are available throughout Las Vegas Valley.

As a reuse or recycling strategy for Las Vegas' tertiary effluent, membrane treatment could recover an amount of water comparable to that presently being obtained through "return-flow credit," a water accounting system allowing Las Vegas to reuse water of Colorado River origin pumped from and then returned to Lake Mead. In addition, a membrane treatment system would make it possible to use saline water (originating as landscape irrigation water) perched above the valley fill aquifer. This shallow saline groundwater reportedly is accumulating at about 100,000 acre-feet/year (SNWA 2006) and increasingly is flooding basements and creating other problems. Combined with urban runoff (which equals approximately 35,000 acre-feet/year) and intermittently available floodwaters, both of which currently move through flood control channels to Las Vegas Wash and into Lake Mead, these sources have an apparent cumulative recovery potential of more than 135,000 acre-feet/year. Following membrane treatment this water could be used directly in the potable supply or indirectly as groundwater recharge. Membrane treatment would have the additional advantage of removing approximately 700,000 tons of salt per year (an amount approximating the total removed by all Bureau of Reclamation Colorado River Basin salinity control projects implemented to date) as well as a number of other environmental contaminants presently identified as

problematic – including endocrine disrupting compounds, personal care and pharmaceutical products, pesticides, chemicals used in plastic manufacturing, and artificial fragrances (Hinck et al. 2006) – and could substantially improve water quality in Las Vegas Valley and the lower Colorado River.

One approach taken by several communities to more efficiently manage consumption is direct or indirect reuse of highly treated effluent, a method becoming increasingly attractive as costs increase for water development, importation, and disposal. Reuse projects based on membrane treatment (microfiltration/ reverse osmosis) of tertiary effluent are in place or under construction in Los Angeles, El Paso, Scottsdale, and many other places around the world (Durham et al. 2003). Such projects produce water that could be "reused" immediately in potable or irrigation supplies (i.e., direct reuse) and/or reused later after recharging groundwater aquifers that are tapped to support domestic water supplies (i.e., indirect reuse). Currently, most direct reuse projects are designed to meet irrigation water demands, whereas reuse designed to supply potable water generally are indirect reuse projects. Preliminary calculations (Johnson 2005) demonstrate that a membrane treatment system for Las Vegas would cost approximately as much as a proposed effluent dilution project (~$800 million), and would produce water with a unit cost significantly less than the $6,050 per acre-foot that the Coyote Springs Development, under construction approximately 50 miles northeast of Las Vegas, recently agreed to pay.

Although the hydrogeology in southern Nevada is unique, concerns regarding ecological impacts from groundwater withdrawal exist across the western United States. For example, the dependence of San Antonio, Texas, on groundwater from the Edwards Aquifer for municipal water supplies increasingly has impacted the endangered fountain darter (*Etheostoma fonticola*). Ultimately, minimum spring flows needed to avoid jeopardizing the darter's existence were established and the Texas legislature mandated that the Edwards Aquifer Authority improve water management and conservation, leading San Antonio residents to reduce per capita water use by 24% between 1984 and 2000 (Fitzhugh and Richter 2004).

Richter et al. (2003) suggested defining ecologically sustainable water management as "protecting the ecological integrity of affected ecosystems while meeting intergenerational human needs for water and sustaining the full array of other products and services provided by natural freshwater ecosystems." Whether adhering to that standard of sustainability, or Nevada's considerably riskier standard of "perennial yield," we must acknowledge limits to water availability as we strive to strike a balance between human water demand, the needs of natural systems and future generations. Adherence to traditional standards virtually guarantees immediate ecological crises and unnecessary adversity for future generations. Those crises will manifest in litigation, "water wars," federal/state conflicts, and loss of springs, wetlands, phreatophytic communities, and biodiversity. Only through changed personal and community relationships with the earth and its waters are we likely to succeed in conserving our ecological heritage while building a sustainable society.

Acknowledgments

N. Williams and D. Melton applied their creative talents to the production of figures. Critical data, databases, and assistance were provided by C. Baldino, G. Clemmer, T. Fisk, S. Goodchild, W. Johnson, Z. Marshall, T. Mayer, E. Miskow, R. Mrowka, B. Schlotthauer, G. Scoppettone, J. Sjoberg, R. Strickland, K. Suchsland, D. Threloff, J. Wilson. We are grateful to A. Amos, M. Deacon, A. Riggs, and anonymous reviewers for manuscript critiques. We sincerely thank these colleagues for their constructive, unselfish contributions.

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Table 1. Native, spring-dwelling and riparian species known from the area of projected groundwater decline in Lincoln, Clark, White Pine, Nye and eastern Esmeralda counties, Nevada; eastern portions of Inyo and San Bernardino counties, California; western portions of Washington, Iron, Beaver, Millard, and Juab counties, Utah; and northwestern Mohave County, Arizona. Complete species listing available from the authors.

Taxa Group*	Endangered	Threatened	Other
Mammals	1	0	2
Birds	2	0	1
Fishes	11	2	31
Amphibians	0	0	4
Aquatic Insects	0	1	50
Springsnails	0	0	49
Plants	1	2	NA
Total	15	5	137

*Species listed as endangered or threatened include: mammals: *Microtus californicus scirpensis*; birds: *Empidonax trailii extrimus* and *Rallus longirostris yumanensis*; fishes: *Plagopterus argentissimus, Gila seminuda, Rhinichthys osculus nevadensis, Moapa coriacea, Empetrichthys latos, Cyprinodon nevadensis mionectes, Cyprinodon diabolis, Cyprinodon nevadensis pectoralis, Lepidomeda mollispinis pratensis, Lepidomeda albivallis, Crenichthys baileyi grandis, Crenichthys nevadae,* and *C. b. baileyi* ; insect: *Ambrysus amargosus*; and plants: *Centarium namophilum, Ivesia kingii* var. *eremica,* and *Nitrophila mohavensis*.

Table 2. Water rights currently allocated and applied for, expressed as acre-feet and percent perennial yield, in 78 basins likely to be impacted by proposed largescale groundwater pumping. Data from Nevada Division of Water Resources Water Rights Database accessed 20 February 2006 (http://water.nv.gov/Water%20Rights/permitdb/permitdb_index.cfm), data for Snake and Hamlin valleys obtained from Utah Division of Water Rights August 2005. Ground water level decline is projected by Schaefer and Harrill (1995) for only parts of South-Central Marshes, Goshute Valley, and Great Salt Lake Desert flow systems, but is anticipated throughout all basins in the other five flow systems.

Flow System	Area (km^2)	# Basins w/ Groundwater Declines	Perennial Yield (acre-ft)	Current Rights (acre-ft)	Current Rights (% PY*)	Rights plus Applications (acre-ft)	Rights plus Applications (% PY)
South-Central Marshes	17,586	4	31,000	41,516	134	44,076	142
Death Valley	40,922	24	86,610	112,590	130	128,619	149
Railroad Valley	10,697	4	91,500	30,792	34	242,407	265
Penoyer Valley	1,813	1	4,000	14,461	362	17,662	442
Colorado	42,217	35	248,800	312,916	126	911,964	367
Goshute Valley	9,428	1	70,000	95,928	137	119,349	170
Mesquite Valley	611	1	2,200	1,099	50	4,407	200
Great Salt Lake Desert	46,620	8	185,500	125,700	68	480,489	259
Total	169,894	78	719,610	735,003	102	1,948,973	271

* % PY = percent perennial yield

Figure 1. Simulated final steady-state groundwater level in valley fill (A), and deep carbonate aquifers (B) in eight major flow systems of Nevada, Utah, and California projected to occur as a consequence of pumping 180,800 acre-feet/year of water from specific well locations in specific quantities as proposed by the Southern Nevada Water Authority. This simulation assumes no groundwater removal other than the 180,800 acre-feet/year projected to be pumped by SNWA from 17 basins of east-central and southern Nevada. The eight major groundwater flow systems affected are numbered as follows: 1-Mesquite Valley, 2- Death Valley Flow System, 3-Colorado Flow System, 4-Penoyer Valley, 5-South-Central Marshes Flow System, 6-Railroad Valley Flow System, 7-Goshute Valley Flow System, 8-Great Salt Lake Desert Flow System. Modified from Schaefer and Harrill 1995, and Harrill and Prudic 1998.

Figure 2. Annual mean discharge (cubic meters per second) from 5 representative springs in Nevada from 1875 to 2005. Data provided by J. Wilson, US Geological Survey, Las Vegas, NV.

Figure 3A. Conceptual diagram of long-term effects of groundwater withdrawal on the variously integrated valley fill and deep carbonate aquifers in Nevada. See text (Groundwater flow system) for further description of the regional aquifer. (A) Near-term: Wells in the valley fill aquifer create a localized cone of depression; wells in the carbonate aquifer produce artesian flow; surface waters and biotic communities are imperceptibly affected.

Figure 3B. Mid-term: Water table in the valley fill aquifer is substantially lowered and local springs supported by this shallow aquifer fail; carbonate aquifer loses its artesian pressure as the deep water table declines and regional springs supported by this deep aquifer decline; groundwater from adjacent basins flows down-gradient toward the reduced pressure caused by the lowering deep water table.

Figure 3C. Late-term: A new steady-state develops in both shallow and deep aquifers within the basin subjected to groundwater withdrawal; the downhill groundwater gradient towards the sites of withdrawal causes lowering of water tables and failure of local and regional springs in adjacent basins.

Figure 4. Changes in single-family residential per capita water consumption in selected southwestern USA cities from 1994 to 2005. Data from Western Resource Advocates (2006).

FIG 1A - SIMULATED WATER-LEVEL DRAWDOWNS AT FINAL STEADY-STATE

UPPER LAYER MODEL

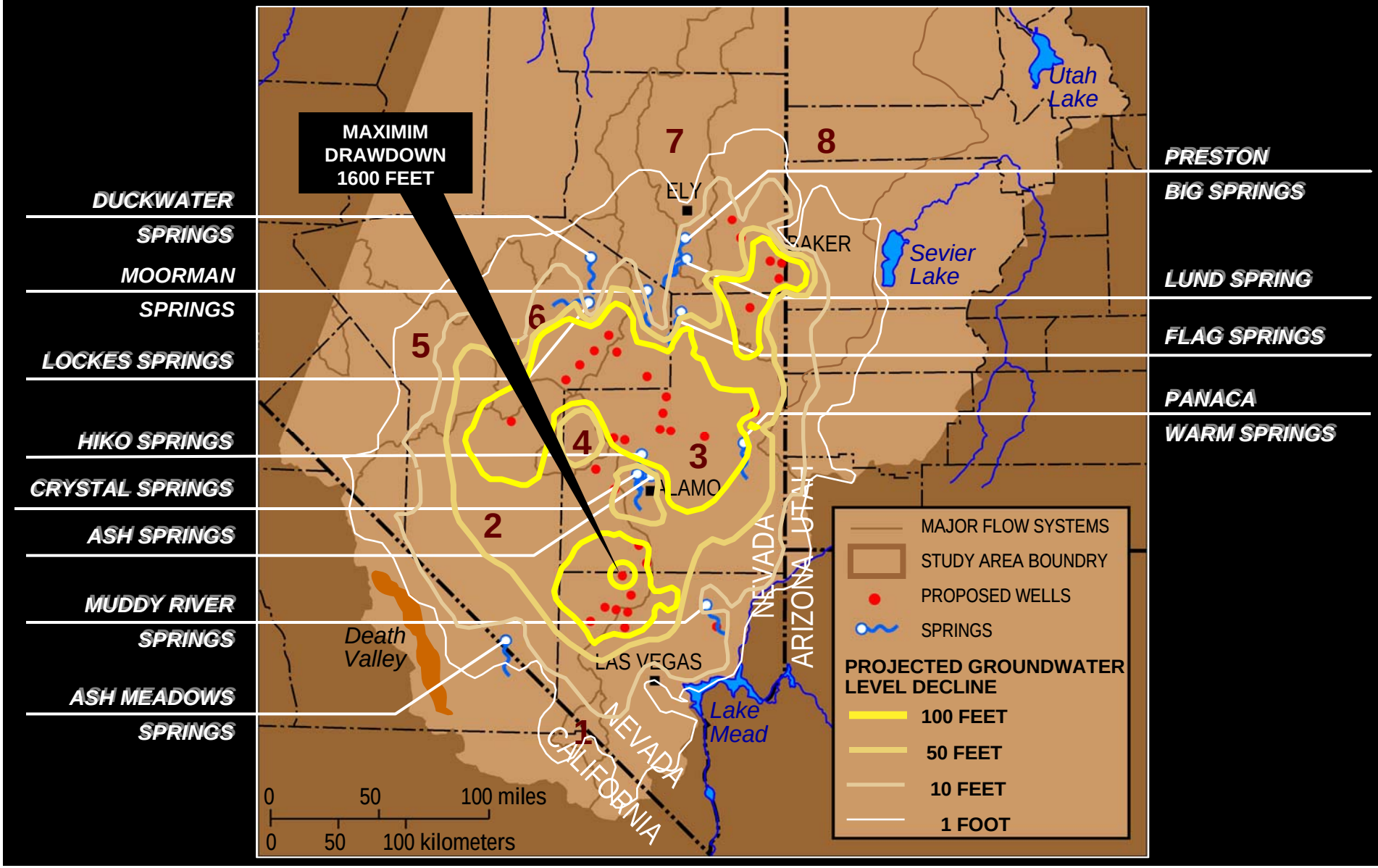


FIG 1B - SIMULATED WATER-LEVEL DRAWDOWNS AT FINAL STEADY-STATE

LOWER LAYER MODEL

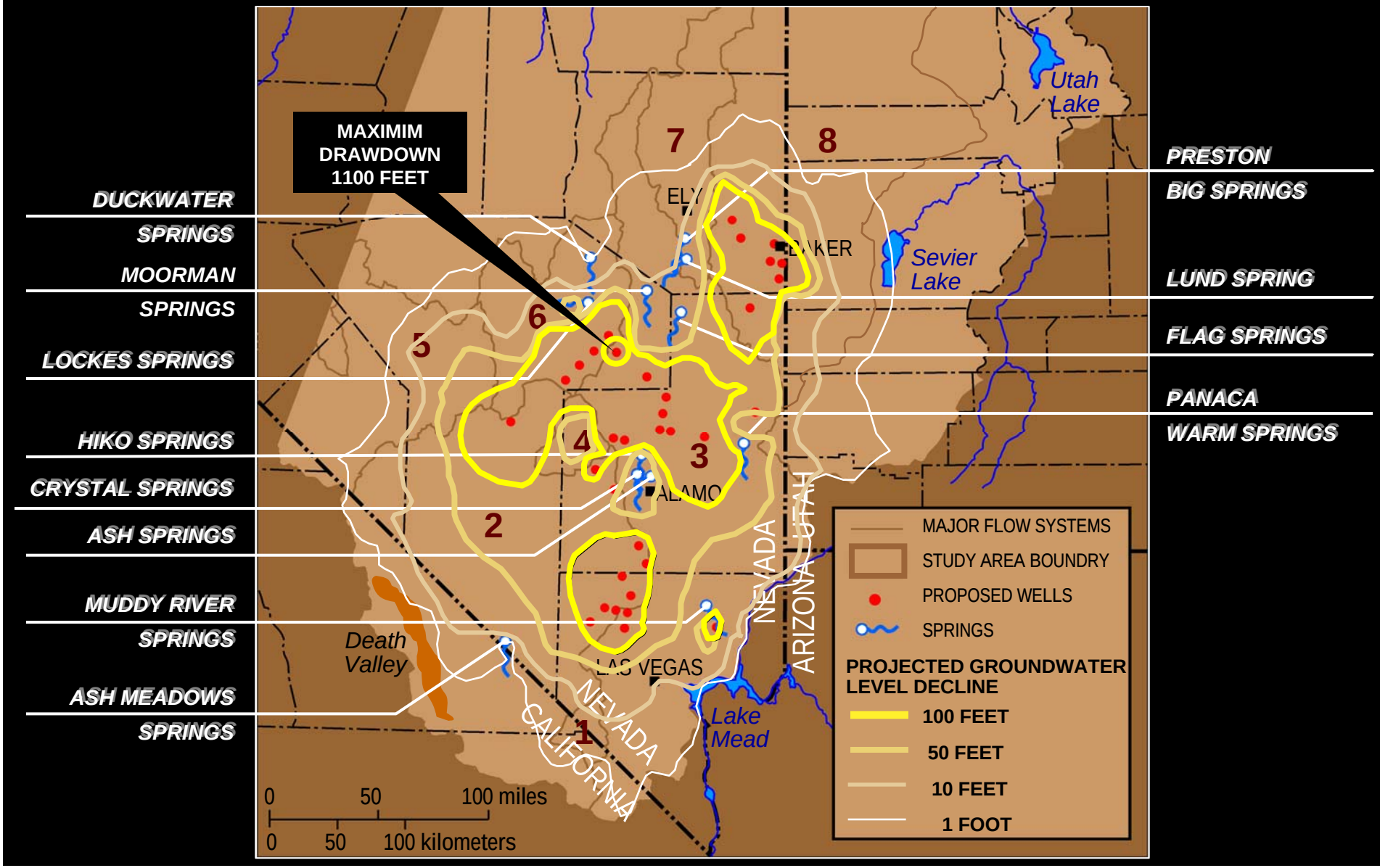


FIG 2 - HISTORICAL CONSEQUENCES

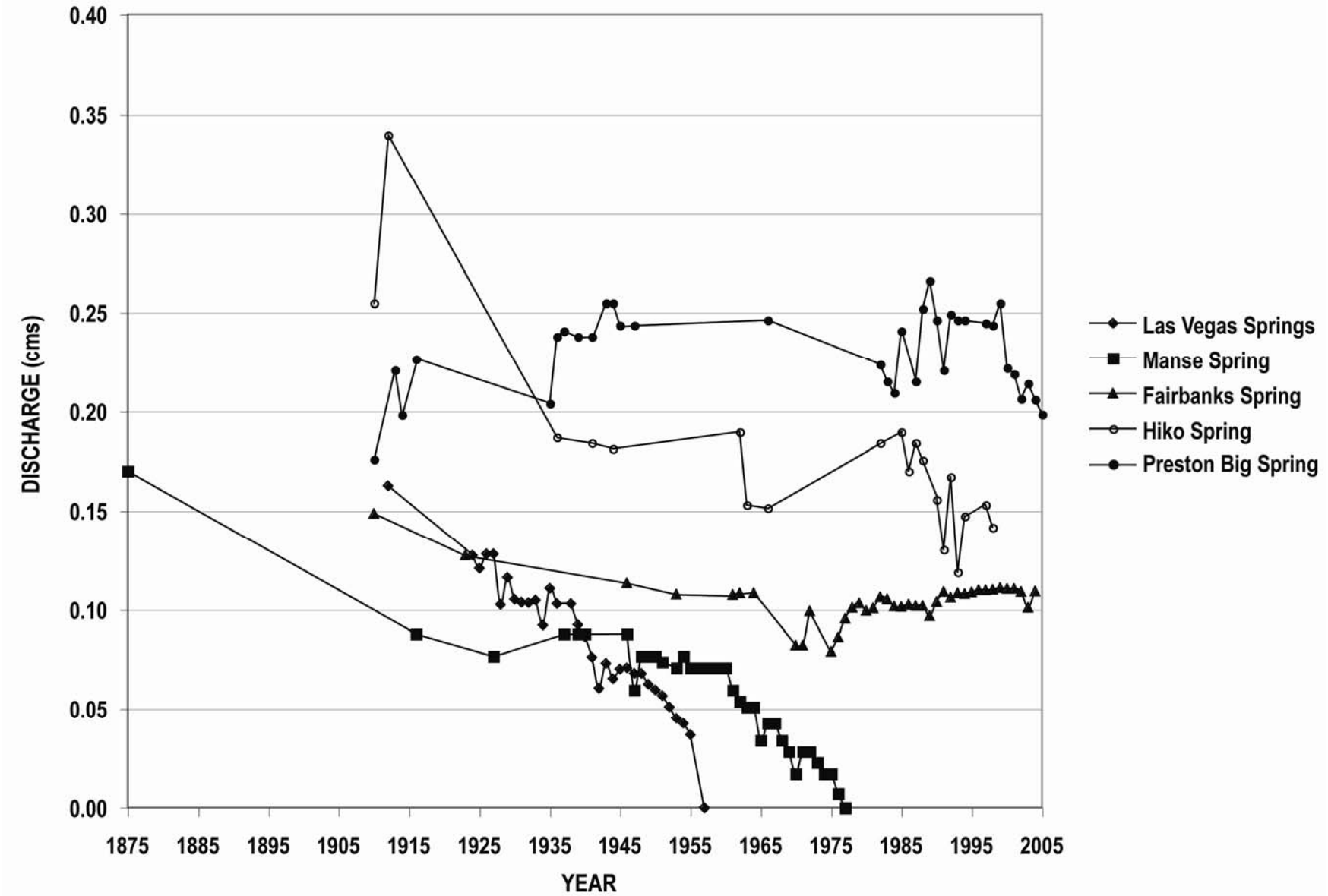


Fig 3A

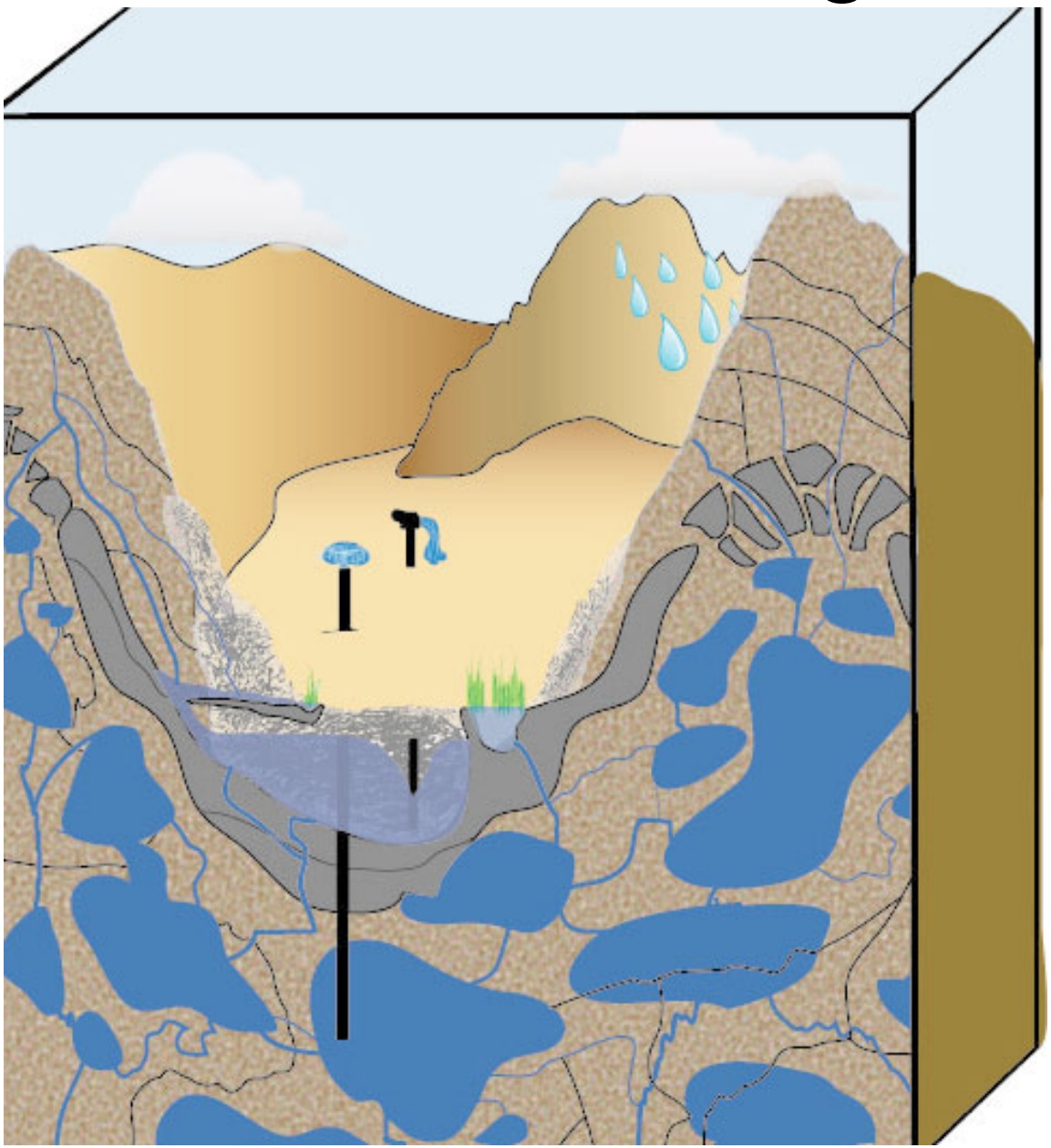


Fig 3b

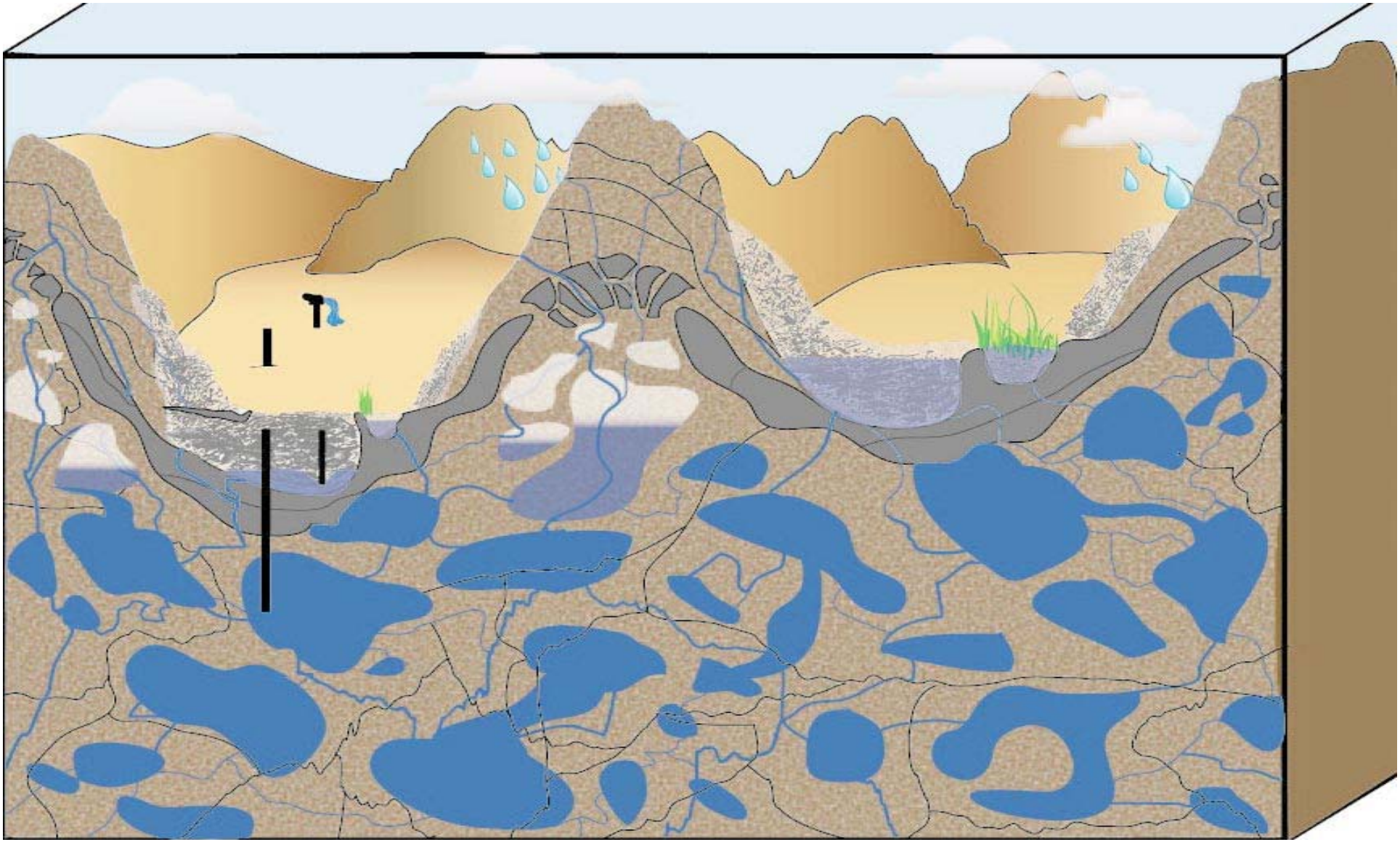


Fig 3c

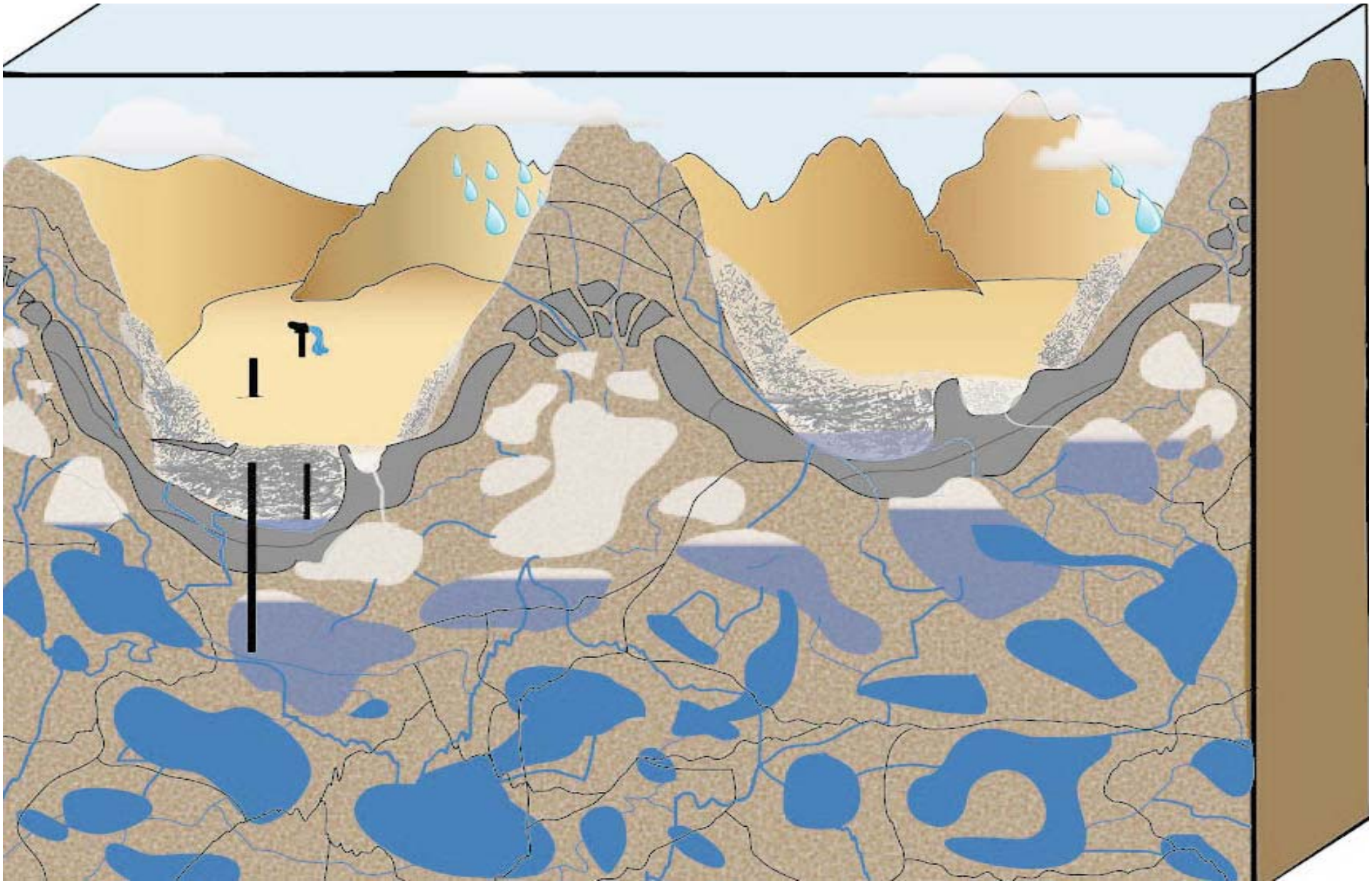
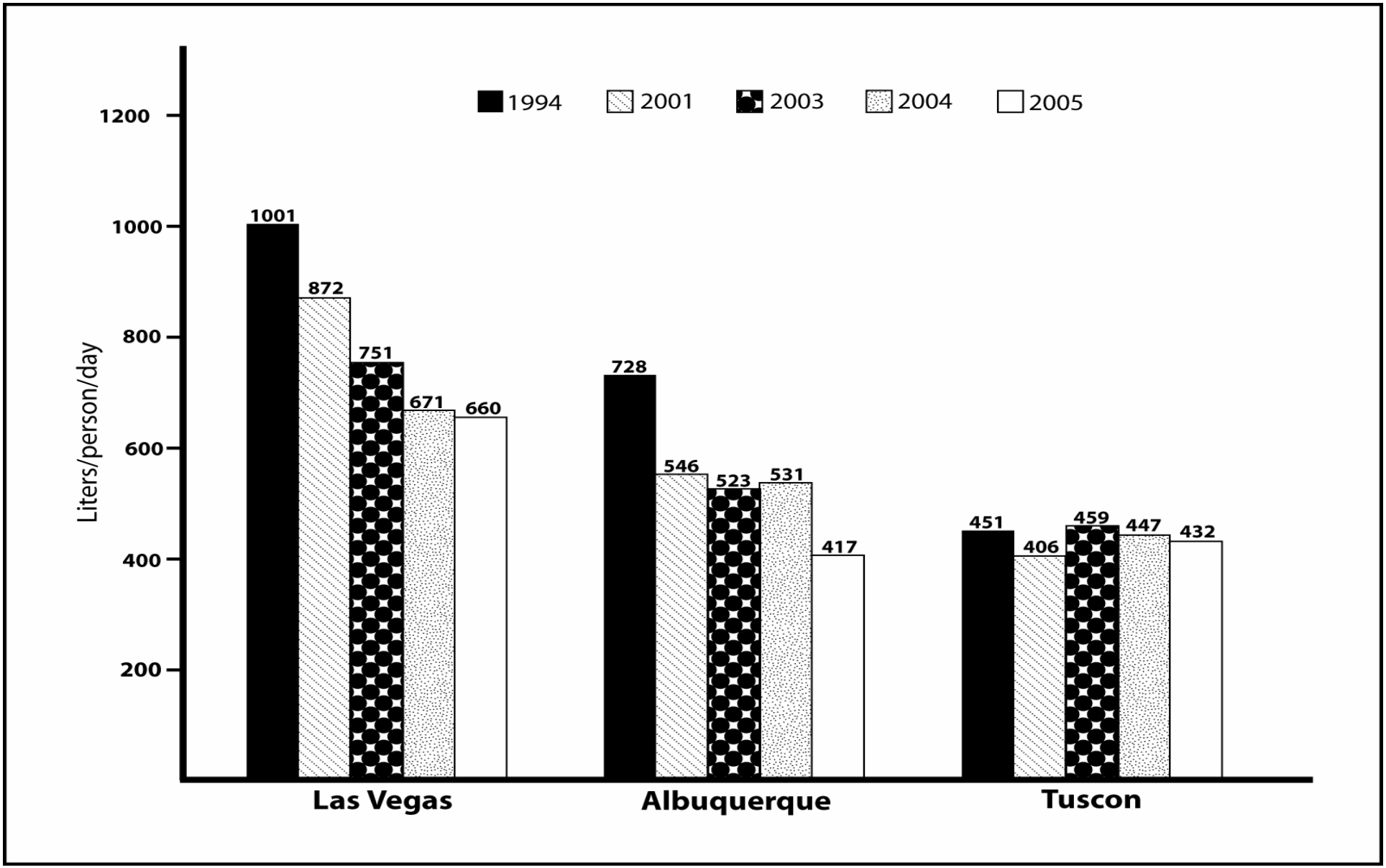


FIG 4 - Water Conservation:

Have We Done Enough?



Penny Woods
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In reference to the draft Environmental Impact Statement for the proposed transfer of 1,000 to 5,000 acre-feet annually to Coyote Springs, the Progressive Leadership Alliance of Nevada has the following concerns:

Comment No. 9.1

The Bureau of Land Management has failed to look at the overall impact the Coyote Springs development will have on the region. The water transfer and the development are inherently linked. Without the water, there will be no development; without the pipeline, there will be no water. Thus, the BLM made a decision contrary to years of federal precedent and the clear intent of the National Environmental Policy Act by failing to look at all the associated impacts within the draft EIS.

Comment No. 9.2

The Kane Springs project, additionally, must be considered in the light of the other groundwater development projects going on throughout the region, including the numerous substantial applications for water use coming from the Southern Nevada Water Authority. Failure to broaden the analysis to include the many parallel applications threatens the environment because of a deliberately incomplete analysis.

Comment No. 9.3

PLAN also is concerned that the scientific basis for the draft EIS is seriously flawed. The Nevada State Engineer rejected the same flawed science produced by the project advocates in his ruling on the Kane Springs application. The BLM has a responsibility to be at least as rigorous as the state agency.

Finally, we would argue that the BLM has a statutory responsibility to thoroughly consider all alternatives to the Kane Springs pipeline. We do not believe that has been done.

For these reasons, PLAN urges the BLM to bring the draft EIS back to the agency and conduct a complete, thorough and scientifically sound process.

Thanks you for your consideration of our comments.

Launce Rake
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Response to Comment No. 9-1

The CSI development is a separate action from the Kane Springs Groundwater Development Project. The CSI development would occur in the absence of the Proposed Action. Currently, 35,096 AFY of groundwater has been permitted within the Coyote Springs Basin for a variety of uses. Groundwater from Kane Springs Valley will be used to supplement these uses which include municipal, agricultural and industrial applications. In the interest of understanding reasonable foreseeable future actions in the region of influence, the Final EIS contains an expanded discussion of CSI proposed actions in Clark and Lincoln County. This information has been added to Chapter 4.20.3.3.2.

Response to Comment No. 9-2

Early in the NEPA compliance process, BLM considered whether to include all of the groundwater projects in a single NEPA analysis. For the following reasons, BLM concluded that all of the groundwater projects should not be included in a single NEPA analysis, but rather treated as separate Right-of-Way applications: 1) the projects are located in different geographic areas; 2) they each are drawing water from different hydrographic basins; 3) they are not dependent one upon the other; 4) they are being developed in differing timeframes and the related water is demanded at different times; and 5) the water being developed by each is being used in distinctly different locations.

Response to Comment No. 9-3

Environmental resource data was collected and analyzed to the level of detail necessary to understand potential impacts and to distinguish project effects (both beneficial and adverse) among the Proposed Action and alternatives. The data analyzed in this EIS are the best available representation of current and predicted conditions at this time. However, there is a level of uncertainty associated with any set of data in terms of predicting impacts, especially where natural systems are involved. Uncertainties related to this project are discussed in Incomplete and Unavailable Information section at the beginning of Chapter 4.

Rose Strickland
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08/20/2007 09:14 PM

To nvgwprojects@blm.gov
cc Penny Woods <penny_woods@blm.gov>
bcc
Subject Fwd: letter plus attachments in body of the message

Toiyabe Chapter
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August 20, 2007

Penny Woods, Manager
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Re: draft EIS for the Kane Springs Valley Groundwater Development Project

Dear Manager Woods,

On behalf of the 5,500+ members of the Toiyabe Chapter of the Sierra Club in Nevada and the eastern Sierra, I am submitting comments on the draft Environmental Impact Statement for the Kane Springs Valley Groundwater Development Project (draft EIS). We would like to incorporate herein the comments of the Great Basin Water Network. The Sierra Club is very disappointed at this document because it is essentially unresponsive to the extensive public scoping comments about issues to be studied in this controversial project, fatally flawed in meeting many NEPA requirements and wholly deficient in protecting public lands and resources in eastern Nevada.

We hesitate to provide lengthy comments on the draft EIS, both because BLM has ignored most of our extensive scoping comments, but also because there's so little substantive information and analysis in this document to review. Our specific comments follow:

Comment No. 10.1

1. SCOPING COMMENTS: The Sierra Club submitted (attached) 14 pages of scoping comments on April 20, 2006 and an additional 10 pages of scoping comments on April 24, 2006. The scoping report published by the BLM on its website does not reflect the extensive scoping issues raised by the Sierra Club comments nor by other commenters, nor does the draft EIS address the majority of scoping issues. Instead, the BLM apparently decided to develop "criteria" (p.ES-11) which eliminated consideration of suggested alternatives and eliminated the need for analysis of the majority of scoping issues raised by the public, including most impacts caused by the recipient of the exported water, the Coyote Springs development. This development will radically change the character of this small rural county by supporting over 100,000 additional residents), yet was effectively ignored in the dEIS. Under what authority can BLM define a proposed project so as to eliminate addressing public concerns about the proposal fully described in extensive scoping comments?

Comment No. 10.2

2. RANGE OF ALTERNATIVES: The draft EIS does not meet NEPA requirements to consider a full range of alternatives. The proposed action and a variant of the pipeline route and no action do not constitute a full range of alternatives and do not consider the many alternatives suggested in public scoping comments. Under what authority can BLM define a proposed project so as to eliminate addressing public concerns about the proposal and suggested alternatives fully described in extensive scoping comments?

Comment No. 10.3

3. IMPACTS ANALYSIS: The draft EIS does not meet NEPA requirements to fully analyze the impacts of the proposed federal project. The BLM only analyzes (p. 4-1) some effects of pipeline construction, operation and

Response to Comment No. 10-1
All issues submitted to BLM were addressed in Chapter 1. As explained in Chapter 1.5 - Scoping, the BLM considered comments received through public scoping when developing the scope of issues and alternatives to be analyzed in the Draft EIS. All comments received during scoping were systematically reviewed by an interdisciplinary team of resource specialist from various BLM offices, representatives from cooperating agencies, and the BLM's EIS consultants. Further, the CSI project is already under construction and the Proposed Action analyzed in this EIS would enable construction of infrastructure to provide a small component of the water resources being developed to serve this ongoing development.

Response to Comment No. 10-2
The purpose and need section of this DEIS provides a context and framework for establishing and evaluating the reasonable range of alternatives. There is a need for developing sustainable water supplies as outlined in the 1999 Lincoln County Water Plan: To assist and support the needs of local communities in Lincoln County, including Coyote Spring Valley; To meet the needs of future economic development within Lincoln County; and To produce, purchase, wholesale and transport water from sources inside of Lincoln County to meet customer water needs across the region.

Response to Comment No. 10-3
As part of the water appropriation permit application review and authorization, the Nevada State Engineer has the authority to approve and

Comment No. 10.3 (Cont.)

maintenance, but fails to analyze the environmental and socio-economic impacts of the delivery and use of 1,000 to 5,000 acre feet of groundwater each year to the Coyote Springs (p.4-34) development, fully covered in public scoping comments. Inadequate science (see point #4) apparently lead to BLM's conclusion that the project will cause no significant adverse environmental impacts by the even limited project. How can BLM do an adequate analysis of environmental impacts of a pipeline disconnected with the delivery of the water to its place of use? How can BLM claim (p.4-35) that mitigation for the impacts of 1,000 acre feet project would be adequate for the 5,000 acre feet project (full buildout), a project larger by four orders of magnitude?

Comment No. 10.4

4. SCIENCE: The draft EIS used scientific data and studies in its impacts analysis which was offered by the project proponent and is not peer-reviewed or independent or appropriate to an impacts analysis. In addition, much of the proponent's "science" was rejected by the State Engineer in his ruling on the water applications in Kane Springs Valley as inadequate or flawed (see ruling in Appendix B). The use of inadequate science has lead to significant flaws in the consideration of available water (recharge) as well as the impacts of pumping and removal of groundwater in the dEIS. How did the BLM assess the sufficiency and adequacy of available information to describe and analyze baseline conditions and impacts of alternatives? Additional studies are needed to document baseline conditions and to analyze potential impacts of the proposed project, as fully described in the Sierra Club and Great Basin Water Network scoping comments.

Comment No. 10.5

5. MITIGATION AND MONITORING: The draft EIS mentions mitigation and monitoring project impacts, but proposes only "some" wells to do so while relying on other agencies and the project proponent to monitor and mitigate environmental damage. This entire section is inadequate and violates NEPA requirements. How will the BLM enforce its mitigation promise (p.4-9) that "any water impacts within the system would be controlled and mitigated by ceasing all pumping activities if the water discharged in the Warm Springs area drops below 3.0 cfs?"

Comment No. 10.6

6. CUMULATIVE IMPACTS ANALYSIS: While the draft EIS devotes many pages to what it calls "cumulative impacts analysis," there is no attempt to estimate either the impacts of up to 14 projects which will be pumping and exporting water in eastern Nevada, nor to require any effective mitigation for cumulative impacts. Instead, the draft EIS cites various "stipulated agreements" and "MOAs" (p. 4-10) between the project proponents and federal agencies and other developers to minimize the potential significant adverse environmental impacts on threatened and endangered species and other public resources. Yet BLM is not a party to the agreements and the agreements are uncertain since there is no enforcement mechanism. The draft EIS statements about BLM "coordinating" or "working collaboratively" with agencies with authority to "ensure" no cumulative impacts (pp. 4/63/64) do not meet NEPA requirements.

Comment No. 10.7

There are many other serious flaws in the draft EIS including no actual locations of wells, roads and facilities (subject to "final design"), piecemealing NEPA requirements for analyzing impacts of related projects, failing to protect public lands, national parks and wildlife refuges and biodiversity in eastern NV.

Comment No. 10.8

The Sierra Club finds that the draft EIS is seriously flawed and does not meet NEPA requirements. We strongly urge the BLM to develop an EIS which seriously addresses public scoping comments, which is based on adequate project description and scope, which uses independent and adequate science, which adequate assesses environmental impacts including cumulative impacts and which proposes realistic mitigation and adequate monitoring.

Thank you for considering our comments. Please call us to clarify points or answer questions on our dEIS comments.

Sincerely,

/s/

Rose Strickland
Water Campaign Coordinator
775 329-6118

Response to Comment No. 10-3 (Cont.)

control the amount of groundwater pumped from basins in Nevada. The BLM has the authority to approve or deny the right of way application for use of federal lands.

Response to Comment No. 10-4

Environmental resource data was collected and analyzed to the level of detail necessary to understand potential impacts and to distinguish project effects (both beneficial and adverse) among the Proposed Action and alternatives. The data analyzed in this EIS are the best available representation of current and predicted conditions at this time. These data were reviewed by the cooperating agencies (Chapter 5.2) and accepted by BLM scientists. There is, however, a level of uncertainty associated with any set of data in terms of predicting impacts, especially where natural systems are involved. Uncertainties related to this project are discussed in the Incomplete and Unavailable Information section at the beginning of Chapter 4.

Response to Comment No. 10-5

Applicant proposed environmental protection measures to reduce or minimize construction-related impacts are incorporated in the project design and outlined in Appendix C (Standard Construction and Operating Procedures). Potential impacts associated with implementation of mitigation measures that could be required by BLM for the pipeline right of way, or another permitting agency, are described in section 4.20.4.2 of this Final EIS for each resource. The BLM would monitor the effectiveness of approved mitigation measures (i.e. desert tortoise fencing, installation of perch inhibitors, revegetation). In addition, the Applicant must comply with specific stipulations directed by the NSE for allocation of water supplies and by the USFWS for groundwater pumping and potential impacts to the Muddy River Springs area.

Response to Comment No. 10-6

Chapter 4 (Environmental Consequences) describes potential indirect impacts to regional springs and other sensitive resources within the project region of influence. Chapter 4.20 (Cumulative Impacts) describes potential cumulative impacts to regional springs and other sensitive resources within the cumulative impact region of influence. Applicant proposed Environmental Protection Measures are listed in Appendix C. Monitoring and mitigation program is discussed above. As part of NEPA, BLM is required to disclose all relevant mitigation, even those not within BLM's authority, and has done so in this FEIS..

Response to Comment No. 10-7

See response to comment 10-4 above.

Response to Comment No. 10-8

The BLM uses a comprehensive process to determine whether rights of way on BLM-managed lands should be granted. This process includes compliance with the requirements of the National Environmental Policy Act and the Council for Environmental

2 attachments

ATTACHMENT #1

Toiyabe Chapter
P.O. Box 8096
Reno, NV 89507

April 20, 2006

Penny Woods
BLM State Office
PO Box 12000
Reno, NV 89520

Re: scoping comments for Kane Springs Valley Groundwater Development Project EIS

Dear EIS Manager Woods,

On behalf of the Toiyabe Chapter of the Sierra Club and its over 6,000 members in Nevada and the Eastern Sierra, we are submitting detailed scoping comments for the environmental impact statement on the proposed Kane Springs Valley Groundwater Development Project (EIS). This eastern Nevada groundwater pumping and pipeline proposal is of great concern to the Sierra Club because of our decades of experience with the catastrophic environmental and socio-economic impacts of LADWP's water exportation program from Owens Valley, CA. We incorporate by reference into our comments the scoping comments of the Great Basin Water Network, the Spring-Snake Valleys Citizens Alliance and the Northern Snake Valley Water Alliance. And we request an extension of the deadline for scoping comments, because of the lack of information provided on the proposed project and the lack of a BLM process to assess cumulative impacts of over 8 related pump and pipe project proposals in the carbonate aquifer region of eastern Nevada and western Utah. Our initial procedural and substantive scoping comments follow:

I. PROCEDURAL ISSUES:

A. Project Description :

1. Piecemealing NEPA: NEPA requires that the BLM consider actions that are similar or connected in one EIS. Yet none of the Southern Nevada Water Authority's (SNWA) pipeline projects are included in the project description. Omitted are proposed SNWA pipelines to Las Vegas from 3 Lakes/Tikaboo Valleys in western Nevada, Coyote Springs pipeline for test pumping ordered by the Nevada State Engineer, the Virgin and Muddy Rivers pipelines, and from Railroad Valley in Nye County where SNWA has additional water rights applications. These are the SNWA proposals we know about. In addition, BLM has initiated scoping on a Vidler Water Co./Lincoln County Water District (Vidler/LCWD) pipeline to the LCLA area

Response to Comment No. 10-8 Cont.
Quality regulations, BLM planning regulations, manuals and handbooks, and applicable policy documents. During scoping, and subsequent public comment periods, the BLM considered comments received alternatives to be analyzed in the Draft EIS. All comments received were systematically reviewed by an interdisciplinary team of resource specialists from various BLM offices, representatives from cooperating agencies, and BLM's EIS consultants

north of Mesquite. Coyote Springs Investment (CSI) has applied to transfer nearly 75,000 acre feet per year (AFY) from Geyser Ranch to Coyote Springs, a conveyance which will require the construction of another pipeline or the use of the SNWA pipeline. In addition, there is another pipeline proposal by the Clean Water Coalition at Lake Mead dealing with waste water and a SNWA proposal on the water supply pipeline from Lake Mead. We have asked the BLM how it will do a cumulative impacts analysis of all of these related pipeline projects, but have received no indication of how the agency will comply with this NEPA requirement.

RECOMMENDATION: The BLM must reconsider the project scope and determine whether a programmatic EIS must be prepared on all related water pipeline proposals or disclose the way the BLM will be able to do a cumulative impacts analysis of all the related projects.

2. Missing information on utility corridors: The Lincoln County Act authorized utility corridors in Lincoln and Clark Counties for water pipelines and related facilities. Maps of these utility corridors were not available in the BLM scoping packet nor provided at the scoping open houses in Nevada. The Club nor the public were able to examine the utility corridor maps to determine if the proposed ROWs, alternative pipeline alignments and related facilities are in the corridor or not. Maps available at the BLM website are at a 1:1,000,000 scale with the corridor lines on the map covering hundreds of feet, not comparable to the pipeline routes in the BLM scoping package. A reviewer cannot tell if the Vidler/LCWD ROWs and related facilities are within the utility corridor or not.

RECOMMENDATION: Maps at the same or smaller scale as maps in the BLM scoping package should be available overlaid with the Congressionally designated utility corridors at additional scoping meetings and on a working website, to provide the public full access to this critical information.

3. Missing information on project facilities: The Lincoln County Act states that the Secretary of Interior shall grant to the Lincoln County Water District nonexclusive rights-of-way to federal land in Lincoln County, Nevada, for any roads, wells, well fields, pipes, pipelines, pump stations, storage facilities, or other facilities and systems that are necessary for the construction and operation of a water conveyance system. Such facilities would include arterial water pipelines and secondary feeders and transmission lines. But all other permitted facilities are not included in the project description, so how can their impacts be analyzed in this EIS?

4. Project description: What is the footprint of the CSI project supported by the exported ground water? At full build-out? at 50% buildout? at buildout supported by 5000 af/y of (unapproved) ground water from Kane Springs Valley? How many units of residential, commercial and other development are projected by CSI? Golf courses? Very little information about the CSI development proposal, the recipient of the exported groundwater was provided during the scoping process by the BLM.

RECOMMENDATION: BLM must re-issue the project description and re-initiate the scoping process with more complete project information.

5. Project area: The scoping package appears to limit the “project area” to Kane Springs Valley. This is not acceptable. Pumping from the carbonate aquifer may affect all areas

downsystem as well as upsystem areas in NV and Utah. The project area should include southern White Pine County, Utah counties along the NV/UT border, and all of Lincoln County as well as eastern Clark County.

B. Project Timing:

1. While Congress in the 11/30/04 Lincoln County Act required the USGS study of the carbonate aquifer to be completed in 30 months and the BLM to comply with NEPA requirements before issuing any ROWs for pipelines and related facilities, it did not set a timeframe for BLM to complete its environmental analyses. Yet BLM has initiated scoping and is planning on completing this EIS before the USGS can complete the Congressionally mandated water study. We question why BLM is rushing the EIS process in the absence of the USGS BARCASS information? Does the BLM and the project proponent want the environmental analysis to be done without the best possible information mandated by Congress? Does BLM intend to duplicate the USGS efforts in collecting existing hydrological information on the carbonate aquifer in White Pine, Lincoln, and Clark Counties, as well as other affected counties in Nevada and Utah?

RECOMMENDATION: BLM should use the 36 months of the BARCASS study, which is well underway, to collect baseline hydrologic and other resource information, in cooperation with the USGS and cooperating agencies, of the total project area, including data from pump tests if such tests can be agreed on by Nevada and Utah counties as well as the Nevada and Utah State Engineers. Scoping should be reinitiated when this data is available.

C. Technical Data/Model Use:

1. In the absence of the hydrological data mandated by Congress in the Lincoln County Act, the BLM must rely on published data on water and biological resources as well as on the proponent's groundwater data and models which we understand are not intended or suitable for the analysis of environmental impacts required by NEPA. Has the project proponent collected data on hydrology and biological resources and developed a groundwater model on which the EIS analyses will be based? Have the data and models been published or peer reviewed? Are the data and models available for public review? Has the groundwater model ever been calibrated or ground-truthed? EISs are public documents which must disclose the environmental impacts of proposed actions. BLM cannot use unpublished and unreviewed data in the very public EIS process.

RECOMMENDATIONS: The BLM must assemble a science team which evaluates the schedule currently envisioned to determine if it is scientifically feasible to answer critical questions of impacts from water export on people and wildlife. The BLM must disclose the names and qualifications of government, private and contractor scientific reviewers so that the public can determine the independence of the panel assembled to review the science of the EIS. The BLM must provide for complete disclosure of all hydrologic and other resource data used in the preparation of the EIS, using the web for public review as data and model results become available. The BLM must provide for a peer review of all data and methods for collecting the data as well as for all models used in the EIS. The BLM must provide a peer reviewed, scientific evaluation of the uncertainty in both the data used and models and scientific methods used to

calibrate the models. The BLM must include a peer reviewed, scientific evaluation of the impacts of the proposed groundwater pumping for at least 100 years, as impacts of groundwater pumping and export over such a large area of the carbonate aquifer may take time to become evident.

D. Project Alternatives:

1. NEPA requires a full range of alternatives to be analyzed in the EIS. The No Action must be more than pro forma and simply dismissed by BLM. One alternative should include all of the current related water projects in the carbonate aquifer (See I.A.1 above). Another should take a hard look at the other water supply options for the proposed Coyote Springs development. These should include: groundwater from other sources than Kane Springs Valley. The range of alternatives should include full build-out, 50% buildout and a development limited by actual water rights approved by the NV State Engineer.

E. Cumulative Impacts Analysis:

1. NEPA requires a cumulative impacts analysis in EISs. There are at least nine current pipeline proposals in eastern and southern Nevada. See I.A.1. above for the detailed list. Impacts on the downsystem as well as upsystem areas of the carbonate aquifer could occur in northern Nevada and Utah, as well as other Colorado River states. When we have asked the BLM how it intends to do a cumulative impacts analysis in 9 individual EISs of these related projects, most pumping and exporting groundwater from the carbonate aquifer, we have received no information on how such an analysis is even possible.

RECOMMENDATION: The BLM must reconsider its piecemeal approach to NEPA in preparing individual EISs for water pipeline projects in the carbonate aquifer and related pipeline projects in eastern and southern Nevada. One programatic EIS which looks at the potential impacts of all of the projects in the entire carbonate aquifer system is necessary, with individual EISs which study environmental impacts of pumping and exportation in specific basins would comply with NEPA far better than the current fragmented approach.

F. Open and Public Process:

1. We applaud the BLM for its public commitments to an open and public EIS process for these controversial and highly technical project proposals which could seriously affect so many rural and urban residents as well as dozens of TES species dependent on carbonate aquifer springs. Adding a scoping open house in Baker is commendable. Unfortunately, the BLM website may be down through the EIS process, through no fault of the NV or Ely BLM offices. In addition, this EIS involves highly technical hydrological issues associated with the carbonate aquifer about which little is scientifically known. And much hydrological and other resource data as well as the hydrologic model have been collected and developed by the project proponent, has not been peer reviewed, and is not accessible to the public. It is not clear how the BLM will coordinate protection of federal interests in public lands and resources among BLM field offices in Nevada as well as in Utah.

RECOMMENDATIONS: The BLM should use only public data and models in the EIS

preparation. All data and models used in the EIS should be peer-reviewed and disclosed on a working website for public review, long before the draft EIS is written and released. Additional science briefing meetings should be held for the public after the BLM's science team (see I.C. recommendations above) has examined existing data and models and made its recommendations on their adequacy, reliability and usefulness to the EIS as well as on the proper schedule for EIS completion. The public should be allowed to present its input to the BLM on these technical issues after review of the science team's recommendations. The EIS contractor should be closely supervised by the BLM and remain totally neutral throughout the EIS process. The BLM must set up a coordinating process with both NV and UT state and field offices.

G. BLM Supervision of EIS contractors: The Ely BLM is currently preparing 7 EISs, a heavy workload. And other EISs are soon to be initiated. This EIS being rushed, without the benefit of the USGS BARCASS study of the carbonate aquifer. The EIS contractors are paid by the project proponent, not the BLM, and are under no obligation to comply with NEPA requirements, as is the BLM. But EIS contractors will be under considerable pressure to keep to the published EIS schedule regardless of the adequacy of the scientific data and necessary impacts models.

RECOMMENDATION: The BLM must consider the recommendations of the science team and make the decision, after another opportunity for public review and input, on whether to incorporate the USGS BARCASS data into the EIS, even if the schedule for completion is delayed.

II. SUBSTANTIVE ISSUES:

A. Water Resources:

1. What are the current surface and groundwater uses for irrigation, domestic and municipal uses, and springs, seeps, creeks, rivers, and wetlands in the project area and how much water is used?

2. What are the sources of water for these uses?

3. What are the private and tribal water rights in the project area? What are the federal and state water rights in the project area?

4. What are the vested water rights in the project area?

5. How much groundwater is stored in the carbonate and alluvial aquifers in the basins in the project area?

6. What are the recharge and discharge areas and rates for alluvial and carbonate aquifers in the project area?

7. What are the connections between the carbonate and alluvial aquifers in the project area?

8. How does groundwater flow through the carbonate aquifer, where, and at what rates in the project area?

9. How does geology, including faults, impervious layers, and other factors, affect the groundwater flow through the carbonate and alluvial aquifers, recharge and discharge areas and rates in the project area?

10. How much groundwater flows from Nevada into Utah and at what rates and locations in the project area?

11. How much groundwater flows from Utah into Nevada and at what rates and locations in the project area?

12. What will the drawdowns of the groundwater table and existing wells and springs be from various levels of groundwater pumping and exportation by Vidler/LCWD in the project area and the entire carbonate aquifer area)?

13. How much of the Kane Springs Valley ground water flows into the Colorado River?

14 How long will it take for Vidler/LCWD pumping/exporting impacts to occur to existing users and springs in the project area and the entire carbonate aquifer? At 5, 10, 25, 50, and 100 year intervals?

15. What are the effects of proposed groundwater pumping on upsystem areas? How will pumping affect the head and storage of water upsystem? At what pumping rates will flows be reversed? Where?

16. What are the effects of Vidler/LCWD pumping/exporting of groundwater on the quantity and distribution of surface water? On existing users of surface water?

17. What are the effects of Vidler/LCWD pumping/exporting of groundwater on surface water quality?

18. What is the current water quality of groundwater in the project area? At what pumping rates will saltwater incursions occur? Where?

19. Will pumped groundwater need to be treated by Vidler/LCWD or CSI to meet water quality standards for M&I uses in Coyote Springs Valley?

20. How will exported groundwater be introduced into CSI's existing water delivery system?

21. What baseline information is available on spring flows in the project area and what additional information is needed before the Vidler/LCWD pipeline project is implemented?

22. What are the current sources of water for urban M&I uses in Coyote Springs?

23. What are the anticipated water conservation programs in Coyote Springs and how much water will be conserved?

24. What other water supply options for Coyote Springs Valley are being currently pursued by CSI?

B. Socio-economic issues:

1. What impacts will the proposed project including at full build-out have on rural communities, businesses, families and lifestyles, values, populations, and economies, both current and future in Lincoln, White Pine, Nye, Clark Counties, Nevada, and Tooele, Juab, Millard, Iron, Beaver, and Washington Counties in Utah?

2. Do these rural counties and areas have adequate financial resources to protect their interests in the EIS process?

3. What impacts will the proposed project have on these rural county and area governments, budgets, services needed and ability to deliver, revenues and costs, schools, courts, fire and public safety services, emergency services, health care, roads, parks, taxes, real estate values, hospital overall quality of life, etc. for the very remote Coyote Spring Valley development?

4. What impacts will the proposed project have on aesthetic values of these rural areas?

5. What impacts will the proposed project have on rural tourism and recreational opportunities?

6. What impacts will the proposed project have on rural air quality?

7. What impacts will the proposed project have on current and future growth in rural Nevada and Utah counties?

8. What impacts will the proposed project construction and the new residents who would be supported by exported water have on rural counties, on traffic impacts on Hwy. 93 and I-15?

9. How much will the proposed Vidler/LCWD project cost? Costs should include any financing costs and the time period for repayment.

10. Who will pay these costs?

11. What impacts will the proposed project and its new residents have on Nevada urban county and city governments, budgets, services needed and ability to deliver, revenues and costs, schools, courts, fire and public safety services, emergency services, health care, roads, parks, taxes, real estate values, crime, traffic problems, overall quality of life, etc.

12. What impacts will the proposed project have on the aesthetic values of Nevada rural areas?

13. What impacts will the proposed project have on urban tourism and recreational opportunities? Many Las Vegans currently hunt, fish, camp, and hike in Lincoln and White Pine Counties, but may lose these recreational opportunities if state and federal parks and wildlife areas are dried up or damaged by falling water tables from Vidler/LCWD pumping/exporting.

14. What impacts will the project have on urban air quality? Las Vegas is already out of compliance with many federal and state air quality requirements. Will air pollution be worse with commute traffic from Las Vegas to Coyote Springs during construction and afterwards?

15. What impacts will the proposed project have on current and future growth in urban Nevada and Utah? Will ground water for the Coyote Springs development reduce potential water supplies for Las Vegas and other Clark County communities?

16. Does Vidler/LCWD's need for additional M&I water to support leapfrog growth in Coyote Springs Valley outweigh rural values and ways of life currently supported by rural water supplies from the carbonate and alluvial aquifers in eastern Nevada and western Utah?

17. What impacts will the proposed project have on Native American tribes in eastern and southern Nevada, and west Utah?

C. Wildlife/Wildlife Habitat

1. What impacts will the proposed project have on resident wildlife species populations and habitats?

2. Lincoln County provides excellent habitat for Sage Grouse, a declining species in the west. Sage Grouse Conservation Plans have been developed for Population Management Unit areas in Lincoln County. What impacts will the proposed project have on Sage Grouse and on its habitat in NV?

3. Sage Grouse also live in sagebrush areas in west Utah. What impacts will the proposed project have on Utah Sage Grouse and its habitat?

4. What impacts will the proposed project have on fish species, populations, and their habitats in the project area?

5. NDOW is currently developing a comprehensive conservation strategy for wildlife in Nevada. How will the proposed project affect the conservation strategy, especially on the need to provide water-based habitats for Nevada fish and wildlife, in eastern and southern Nevada?

6. Fishing, hunting, birdwatching, camping, touring, and nature photography are popular recreational uses in eastern and southern Nevada, with campgrounds at state parks, wildlife areas, and BLM rec. areas filled nearly every weekend. What impacts will the proposed project have on these recreational uses?

7. Migratory bird species rely on watered areas in eastern and southern Nevada for resting and refueling. What are the migration corridors and oasis areas? What impacts will the proposed project have on migratory birds there?

8. Resident bird species also depend on habitat in eastern and southern Nevada. What areas are important for birds? What impacts will the proposed project have on important bird areas?

9. Riparian areas are critical to the survival of wildlife in the project area. What impacts will the proposed project have on riparian areas?

10. The use of key species in the EIS is not acceptable, as it omits environmental impacts analysis of the vast majority of fish and wildlife species, all of whom are at risk from the loss of

habitat from large-scale, regional groundwater pumping and exportation.

RECOMMENDATION: The BLM must conduct a thorough analysis of environmental impacts to fish and wildlife in the project area instead of using the inadequate "key" species approach.

11. What alternative would have the least negative impacts on fish and wildlife and their habitats in eastern and southern Nevada and western Utah?

D. Special Status Species

1. Eastern and southern Nevada have the highest biodiversity in the state and Nevada ranks second in biodiversity in the US. Much of this biodiversity is linked to springs, creeks, lakes, wetlands, and rivers, most of which scientists believe are supported by the carbonate aquifer in this arid desert region. What impacts will the proposed project have on the region's biodiversity?

2. There are dozens of federally listed, proposed and candidate species and BLM and State sensitive species, along with their habitats, in the project area, especially the threatened Desert Tortoise. See www.heritage.nv.gov for the entire list. What impacts will the proposed project have on each of the TES species in the project area in Nevada and Utah?

3. What impacts will the proposed project have on the ecological integrity of ecosystems in eastern and southern Nevada, and west Utah?

E. Other Environmental Impacts

1. What impacts will the project have on fire frequency and occurrence as groundwater pumping dries up vegetation over large areas of desert valleys in eastern and southern Nevada and in Utah?

2. What impacts will the proposed project have on soils, crusts and vegetation communities in the project area, including west Utah?

3. What impacts will the proposed project have on the invasion and spread of noxious weeds, especially from soil-disturbing construction activities and long-term vehicle and road use in maintaining facilities, in the project area?

4. What impacts will the proposed project have on livestock grazing and ranching operations?

5. What impacts will the proposed project have on the health of watersheds in the project area in Nevada and Utah?

6. What impacts will the proposed project have on air quality in the project area? Will toxic dust storms similar to those on Owens Lake, California, be created in areas of vegetation dying from groundwater table decline?

7. Will the proposed project, especially in the construction phase, mobilize radioactive dust in disturbed soils deposited by above-ground nuclear testing at the Nevada Test Site and elsewhere

in Nevada decades ago? Will cancer rates increase in downwind areas from the proposed project construction activities?

8. How will the proposed project impact wild horses and their habitat areas, including scarce desert watering holes and springs on which horse survival depends?

9. How will the proposed project impacts existing rights-of-way uses (other pipelines, telephone and power lines, etc)?

10. Eastern Nevada and western Utah are rich in caves, especially in the widespread limestone formations. What impacts will the proposed project have on existing caves and cave formations in the project areas? On bat species utilizing caves?

F. Cultural Resources

1. Native Americans occupied eastern and southern Nevada and west Utah for thousands of years. How will the proposed project impact Native American cultural resources and sites?

2. What impacts will the project have on paleontological resources?

3. What impacts will the project have on petroglyphs and pictographs in the project area (e.g. increased vandalism of cultural sites)?

G. Special Land Areas

1. There are a number of National Parks in the project area. What impacts will the proposed project have on Great Basin and Death Valley National Parks, and on Lake Mead National Recreation Area? What are current and projected levels of park visitors? What impacts will the proposed project have on each national park area, including loss of water, increasing erosion, and increased or decreased visitor use, need for and cost of park management and facilities, etc.?

2. State Parks in the project area include Cathedral Gorge, Beaver Dam, Echo Canyon Reservoir, and Kershaw Ryan, and in southern Nevada include Valley of Fire, Floyd Lamb, Spring Mountain Ranch. What impacts will the proposed project have on each state park, including loss of water, increasing erosion, and increased or decreased visitor use, need for and cost of park management and facilities, etc.?

3. Eastern and southern Nevada and west Utah are the sites for some unique and valuable National Wildlife Refuges, including Ash Meadows, Fish Springs, Desert, Pahranagat and Moapa Valley NWRs. Most are water-based and contain a large number of endemic species. What impacts will the proposed project have on each refuge?

4. Nevada has established a number of State Wildlife Management Areas in the project area, including Key Pittman, Wayne C. Kirch, Railroad Valley and Overton WMAs. What impacts will the proposed project have on each WMA?

5. BLM has some outstanding natural areas, ACECs, and recreational areas on public lands in the project area: 3 Desert Tortoise ACECs, the swamp cedars in Spring Valley, Red Rock

National Conservation Area, mesquite natural area near Pahrump, and a number of wilderness areas and wilderness study areas. What impacts will the proposed project have on each special BLM areas?

H. Public Access

1. The proposed pipeline will follow the main road into Kane Springs Valley, access to public lands used lightly or very heavily for a number of purposes. Access will be disrupted during the construction period and perhaps afterwards by security needs. What impacts will the proposed project have on public access to public and private lands during and after pipeline construction?

J. Security Issues

1. The proposed pipeline and related facilities, such as well-fields, pump stations, etc. have security needs in this post-911 era. Yet no such security measures were disclosed in the scoping process. Will large areas be fenced? Will the buried pipeline be fenced? Surveillance cameras? Armed security patrols of the pipeline corridor and other facilities? Closed areas? Closed roads? What impacts will security measures for the proposed project have on public use and enjoyment of public lands?

K. Monitoring

1. What monitoring is necessary to determine impacts from Vidler/LCWD groundwater pumping on public lands and resources? On existing water users? On TES species? On national and state parks, wildlife areas, and BLM special areas?

2. How often must monitoring be done?

3. What kinds of monitoring must be done? Electronic? Site visits?

4. Who will be responsible for monitoring?

5. Who will pay monitoring costs?

6. How will monitoring data be published for public review?

7. Who will evaluate monitoring data to determine the severity of impacts?

8. Will the BLM set impact thresholds beyond which pumping must be reduced or stopped?

9. What are acceptable and unacceptable impacts?

10. What happens if monitoring is not done by the responsible parties?

11. Can BLM withdraw the ROW permit for the pipeline if monitoring indicates unacceptable impacts in the basins losing water?

12. Who is responsible for monitoring impacts on TES species?

13. What are acceptable and non-acceptable impacts for TES species?

L. Mitigation

1. What is acceptable mitigation for declining water tables which affect wells, springs, wetlands, creeks, lakes, rivers?

2. What is acceptable mitigation for the loss of vegetation, increased erosion and air pollution from dust storms?

3. What is acceptable mitigation for economic losses by ranchers, farmers, small businesses, local and tribal governments?

4. What is acceptable mitigation for loss of population, opportunities for growth in rural communities, and rural quality of life?

5. What is acceptable mitigation for urban impacts of additional residents on urban and rural schools, parks, health and safety, crime, infrastructure and other government costs, employment/unemployment, taxes, real estate values, and quality of life?

6. What is acceptable mitigation for the loss of wildlife populations and habitats from project impacts?

7. What is acceptable mitigation for the loss of or severe impacts to TES species and their habitats?

8. Who sets mitigation requirements?

9. What are the costs of required mitigation?

10. Who pays mitigation costs?

11. Who enforces mitigation requirements?

12. How will mitigation be triggered?

13. How will adverse impacts on affected springs from pumping in Kane Springs Valley be determined when other carbonate aquifer wells will also be operating in the same part of the flow system?

M. Other: the Lincoln County Land Act Development and Wilderness Act of 2004 required an agreement be reached between Nevada and Utah on shared carbonate aquifer water before any groundwater would be transported through pipelines on public lands. Why is this EIS being started before there is any discussion or agreement between the two states on shared ground water?

In conclusion, the Sierra Club requests the BLM extend the scoping period while developing a more accurate and comprehensive project description including all related pipeline projects, while establishing a science team, while the science team reviews existing data and models to be

used in the EIS and makes recommendations on the adequacy and/or need for additional hydrological, biological, and other data and/or models for the impacts analysis and cumulative analysis, while the public reviews these science team recommendations, and while BLM determines whether the initial EIS scoping schedule is too short for the public to be able to adequately provide scoping issues and for the BLM to do a credible job of studying the environmental impacts, especially the cumulative impacts of related water exportation project proposals.

Thank you for considering our initial scoping comments. We will submit additional comments as more information becomes available on this controversial project proposal.

Sincerely,

/s/

Rose Strickland
Toiyabe Chapter of the Sierra Club

ATTACHMENT #2

Toiyabe Chapter
P.O. Box 8096
Reno, NV 89507

April 24, 2006

Penny Woods
BLM/NV State Office
PO Box 12000
Reno, NV 89520

<u>Re: additional scoping comments for Kane Springs Valley Groundwater Development Project EIS</u>

Dear Ms. Woods,

These are additional scoping comments for the environmental impact statement on the proposed Kane Springs Valley Groundwater Development Project (EIS), supplementing the initial written comments of April 20, 2006 and oral comments at scoping meetings. We again request a 309 day extension of time for scoping comments. There is much missing information on this project which has not been supplied by the BLM including our requests for additional information on the vague project description, for hydrological and biological data and models to be used in the EIS and any idea of how BLM will be able to conduct a cumulative impacts analysis on this and other related water pipeline proposals in the carbonate aquifer area.

We do not know if the Bureau is setting up a technical team to review existing data, or a "science team" to address the complex hydrological and biological issues involved in these multiple pumping projects in the carbonate aquifer area.

Will the Nevada Department of Wildlife be a cooperating agency in the EIS process? Without NDOW, the BLM and its technical team will be greatly impacted in its ability to address wildlife impact issues. We urge the BLM to negotiate an agreement with the State of Nevada, so that NDOW can fully participate on the technical team for the EIS.

The Sierra Club does have additional scoping comments, however, and submit the following to supplement our initial letter.

I. ADDITIONAL PROCEDURAL ISSUES

A. Project Description

1. Additional information needed:

a. What is the timing of the groundwater pumping? Different levels of pumping annually may have different environmental impacts, both in amount and timing. Pumping during a drought may exacerbate impacts.

b. The project description should identify the regional flow systems and the groundwater basins from which water would be pumped, as well as the source of water - alluvial, carbonate or other aquifers or surface water.

c. The project description should identify the dates and locations of well applications and af/y amounts of water expected, as well as the status of any other water rights in the project area, whether Vidler Water Co./Lincoln County water District (Vidler/LCWD) has any certificated water rights, etc. in each groundwater basin in the project area.

d. What is the estimated perennial yield in each of the groundwater basins in the project area? What is the estimated sustainable or safe water use in each basin? Who would determine safe water use in each basin? Will the hydrological model used in the EIS assume that the regional flow systems and groundwater basins are currently "in-balance" where "input equals output?"

e. What are the vested water rights in the project area? Will they be harmed by the pumping proposal?

2. Inadequately defined project area: Why were hydrological basins adjacent to those planned for direct groundwater development, but within the larger regional flow systems (Death Valley, White River, and Great Salt Lake Regional Flow Systems) not included in the project area? We challenge the implied assumption that neighboring basins will not be affected, either hydrologically or biologically, by proposed groundwater pumping and exportation.

RECOMMENDATIONS: All groundwater basins within the 3 larger regional flow systems be included as a part of the project study area. In addition, since many basins in White Pine County and Lincoln County and Utah are in the adjacent Colorado River Regional Flow System and targeted for groundwater development by other water purveyors in the near future, we strongly urge that the project area be expanded to include all basins in the Colorado River Flow System in both states. And, lastly, the EIS should examine why Las Vegas cannot obtain more Colorado River water - the "rationale" for the proposed in-state groundwater development proposal.

3. Missing NEPA requirements: Additional NEPA rules were published in the Federal Register of March 8, 2004, requiring the BLM to use consensus-based management and community-based NEPA training in the EIS process. These were not included in the BLM scoping package for the EIS. The purpose of the new rules is to maximize public participation in the NEPA process, especially early public input.

40 CFR 1501.2) "It is imperative that bureaus enlist the participation of all interested parties as early as possible and provide any necessary community-based training in order to reduce costs, prevent delays, and to promote efficiency in the NEPA process. It is the intent of these procedures to achieve early consensus on the scope of NEPA compliance and the methodologies for collecting needed baseline data...Further, it is the intent of these procedures to facilitate environmental analyses that avoid the late introduction of issues and alternatives that should have been identified initially during scoping."

RECOMMENDATIONS: We urge the BLM to continue scoping for this EIS while vigorously implementing 40 CFR 1501.2. The inclusion of NDOW in the EIS process is essential, so BLM should resolve any administrative issues preventing NDOW's participation.

<u>B. Project Timing</u>

1. BARCASS STUDY: We have recently learned that Phase II of the BARCASS study would take an additional three years and $6M to complete. This study would utilize the groundwork being laid in the Phase I study to develop a predictive model of impacts from pumping from the carbonate aquifer.

RECOMMENDATION: BLM should use the predictive model developed in the BARCASS Phase II study for assessing impacts of the proposed federal action. It is the only third-party, independent model which will be available on which BLM can base the critical impacts assessment.

2. Baseline Data Needs: BLM cannot conduct an impacts assessment or a cumulative impacts analysis without adequate baseline data on existing conditions, before groundwater pumping is initiated.

RECOMMENDATIONS: Using independent and peer-reviewed data collection methods, the BLM and other local, state, and federal government agencies, private

water users, and the project proponents should collect the following baseline data in the project area in Nevada and Utah:

- **water rights status, including recorded water rights, vested water rights, applications for water rights in the project area,**
- **water rights needed for reasonable expectations of local growth,**
- **historical and current water uses,**
- **mapped locations of all springs and seeps, on both public and private lands,**
- **mapped locations of wet meadows and other areas with water-dependent flora and fauna,**
- **test wells for assessing the connectivity between alluvial groundwater and the deeper carbonate-rock aquifer groundwater and for assessing the recharge rates of both aquifers.**

C. Technical Data/Model Use

1. Public participation in technical issues: The Sierra Club endorses the 3 recommendations made by the Northeastern Great Basin Resource Advisory Committee regarding public participation in the pipeline EIS:

RECOMMENDATIONS:

a. The BLM should base its EIS on the hydrological data results from the USGS BARCASS study of the carbonate aquifer before judging NEPA disclosure and analysis to be adequate and complete.

b. The BLM should provide for regular public update and comment on technical issues deliberated in closed sessions of the "technical team." Public outreach could include by:

1. **providing web-enabled interactive public discussion on technical topics**
2. **maintaining a website containing technical documents and transcripts of closed meetings**
3. **hosting open public meetings on technical issues shortly after each closed technical meeting**

c. The BLM should implement a mechanism for meaningful involvement by local governments denied Cooperating Agency Status.

2. Model: BLM should disclose, ASAP, the hydrological and biological data and the assumptions underlying any models used in the EIS process.

D. Project Alternatives

1. There are no alternatives proposed in the scoping documents, unlike other BLM scoping packets on proposed projects. This is a deficiency in BLM compliance with NEPA requirements.

RECOMMENDATION: The EIS must contain a range of actual alternatives to the

proposed action. These should include a no action alternative and alternatives with various levels of Coyote Springs development buildout. Minimization and mitigation strategies and best management practices should be included in each alternative.

2. Water conservation alternative: Enclosed is a report from the Rocky Mountain Institute of a conference in Las Vegas in which methods to achieve per capita use levels of 50 gal/person/day were discussed with developers. A water conservation alternative in the EIS for the Coyote Springs development should include all reasonable and implementable practices and policies to achieve reduced water demand, including indoor conservation (toilet retrofit programs, increased appliance efficiencies, and programs directed at tourists staying in motels and hotels and visiting casinos, restaurants, golf courses, and other water-using facilities.

3. Reduced groundwater pumping alternative: What is the minimum amount of groundwater necessary to make the proposed project economically feasible?

II. SUBSTANTIVE ISSUES:

A. Water Resources

1. Utah: What water resources in Utah could be impacted by groundwater pumping in Nevada? Please quantify the impacts, including amounts and timing.

2. National Forest Lands: What water resources on National Forest lands in Nevada and in Utah could be impacted by groundwater pumping in the project area, including springs, wetlands, riparian areas, creeks, and caves, especially those dependent on seeping groundwater to create or maintain cave formations?

3. Recharge Rates: Will recharge rates for the carbonate alluvial aquifers be affected by changes in vegetation cover, i.e., losses of vegetation due to declining water tables from groundwater pumping and exportation?

4. Water quality: What impacts on water quality will the proposed pumping cause?

B. Socio-economic issues

1. Project costs: Estimates of project costs should include all costs, not just construction costs. These would include financing costs, monitoring and mitigation costs.

2. Takings: Consider whether the effects of project pumping which result in direct effects to existing water rights - lowering water levels in wells and creasing flows in springs and creeks - constitute a taking of individual property rights. Can Vidler/LCWD effectively condemn and take individual water rights in Nevada? outside Nevada in Utah?

C. Wildlife/Wildlife Habitat

1. Recommendations: The BLM should use wildlife conservation plans developed in Nevada and Utah for specific species, including Nevada's Comprehensive Wildlife Conservation Strategy, the Nevada Partners in Flight Bird Conservation Plan, and specific Sage Grouse Population Management Unit conservation plans in White Pine and Lincoln Counties, in the EIS process to assess the wildlife values, assess project wildlife impacts, and develop monitoring and mitigation in the project area.

D. Other Environmental Impacts

1. Ecosystem impacts: Pumping and removing groundwater from groundwater basins in the project area will have enormous impacts on ecosystems and ecosystem functions in both the Great Basin and in the Mojave Deserts, since current levels of water use are resulting in declining spring flows and levels in domestic and irrigation wells in the project areas.

a. Great Basin Restoration Initiative: The BLM has proposed actions to reverse declining ecosystem health in the Great Basin. How will the proposed action affect BLM's program goals and objectives?

b. RVDE: The USGS has announced a project, entitled RECOVERABILITY AND VULNERABILITY OF DESERT ECOSYSTEMS, which is designed to conduct basic scientific research on ecological processes within the Mojave Desert Ecosystem and to use this knowledge to provide land managers with scientific understanding and tools needed to conserve and restore threatened desert landscapes in the Mojave Desert. We request that the BLM incorporate this USGS project into the pipeline EIS process for the affected Mojave Desert groundwater basins.

E. Other Issues

1. Environmental Justice: The project area includes many low-income families both in rural areas and in urban areas.

a. Rural communities: A decrease in agricultural income from declining water levels in irrigation wells and springs and surface water and resulting increases in costs for deepening wells and/or pumping costs may have drastic effects on local county school district budgets and provision of community services and infrastructure. Please consider these impacts over the next 50 years if the proposed action is implemented.

b. Urban areas: Creating a new town in this remote area will require huge amounts of water. How much water will be needed at full buildout? 50% buildout and at a development level supported by actual approved water rights? How much will the water cost? Who will bear the costs? What water rates will be charged at Coyote Springs to purchase and transport water? To operate and maintain water systems?

2. Bonds:

RECOMMENDATION: With the uncertainty over the economic and environmental impacts of massive groundwater pumping and removal from Lincoln, White Pine and Utah counties as well as the costs of monitoring and mitigation over 50 years, the Sierra Club recommends that BLM require a bond in a substantial amount to cover these costs.

3. Nevada State Water Plan: How will the proposed project comply with or violate Nevada State Water Plan policies?

F. Mitigation

1. Interim plans for mitigation: Will mitigation for declining flows in springs which support TES species be immediate, rather than held hostage to lengthy legal proceedings about exactly whose groundwater pumping is causing the environmental harm?

2. Multiple state monitoring and mitigation: How will monitoring and mitigation be coordinated across 3 states potentially affected by the proposed groundwater pumping and exportation?

3. Public notification: How will BLM make public up-to-date reports on monitoring and mitigation for the proposed project?

Thank you for considering these additional scoping comments.

Sincerely,

/s/

Rose Strickland
Toiyabe Chapter of the Sierra Club

attachment

Rocky Mountain Institute Summer 2004

Green Development in the Desert
A Green Oasis of Refrigerated Plenty

by Will Clift

Whether one arrives in Las Vegas by plane or by car, one is struck by a stark contrast between the lushness of the city and the dryness of the desert that stretches in all directions.

Las Vegas is world-renowned as a city of fantasy, flaunting its reputation for excess—a green oasis of refrigerated plenty in the midst of a blazing desert. But dig a little deeper, and a harsh reality becomes evident: this is not an oasis, but rather a region that is exceeding its human carrying capacity. This is evidenced by the city's congested traffic, severe water shortages, expensive power, and dwindling amounts of developable land.

And yet, people keep coming. The real estate market is staggering; Las Vegas has consistently been ranked as one of the fastest-growing cities in the country for much of the last decade. Certain recently-completed developments have nearly sold out before a single house was finished. Area officials are now faced with two challenges. The first is how to reduce the rate at which Las Vegas consumes resources. The second is to create a model for development that allows the city to continue to grow, without increasing its burden on the area's resources.

Planners in the city's Comprehensive Planning Department are hoping to create this model in the Kyle Canyon Gateway development project, a 1,600-acre parcel of BLM land, seventeen miles northeast of downtown and the Strip, which will be auctioned to developers later this year. The city plans to place restrictions on its sale that will require the developers to address issues of sustainability. Multiple stakeholders, from developers to the Sierra Club, applauded this innovative approach. If the effort is successful, the city hopes to apply similar restrictions to all future developments.

Last November, RMI was asked to hold a *charrette* 1 to inform the city about what sustainable development in Las Vegas would look like, and how to make it achievable within the economics of the real estate market. In this project, RMI saw a potentially unique opportunity to address the thorny challenges faced in the Southwest.

"Addressing imminent growth in resource-overburdened regions is a real challenge for GDS." says Green Development Services team leader Alexis Karolides AIA, who led the charrette. "Is it possible to develop in a whole-system way that has an overwhelmingly positive, even a restorative, effect on the region? Could we create a community plan that not only avoided exacerbating the standard sprawl-and-waste pattern of development, but could instigate restorative retrofits (addressing such issues as water and energy efficiency, xeriscaped landscaping, waste reduction, etc.) *throughout the greater community* and start to heal the city's overall development pattern?"

Overburdened Natural Resources

Whether one arrives in Las Vegas by plane or by car, one is struck by a stark contrast between the lushness of the city and the dryness of the desert that stretches in all directions. While this contrast creates part of Las Vegas's allure, it also reveals the artificiality of its seeming abundance of life-sustaining resources.

Las Vegas has one of the highest per-capita rates of water consumption in the nation, at over 240 gallons per day. Last year the city's water supply, Lake Mead (itself artificial, created by Hoover Dam), dropped to its lowest level in more than three decades. Though appearances might suggest otherwise, the resort casinos are not the worst water wasters. Rather, the main culprits are private residences, which frequently have water-intensive amenities such as turf lawns and swimming pools.

Nevada's energy demand has greatly exceeded its production for many years, forcing it to purchase electricity from outside the state. Nevada's electricity users now often pay premium prices, especially during afternoon hours when the state is consuming electricity at the highest rates and every air-conditioner is on, creating an infamously sharp "needle peak." The inherent cost of that loadshape, plus exposure to the volatile power market during the California power crisis, recently forced the local utility, Nevada Power, to the edge of bankruptcy.

Developable parcels of land are in short supply in the Las Vegas area, as the suburbs have begun to run into the mountains, protected land, and other undevelopable areas. The Kyle Canyon Gateway development, for instance, is nestled between the Red Rock Canyon National Conservation Area, Floyd Lamb State Park, and the Paiute Indian Reservation. The limits to growth are readily apparent.

RMI's Whole-System Approach

RMI brought a multi-disciplinary team to Las Vegas, including experts in energy, water, transportation, green buildings, and urban and landscape design, explicitly to look across boundaries. Nearly seventy participants from the Las Vegas area joined them, including utility representatives, real estate agents, developers, and city officials. During the charrette, discussion cycled between specific topics and general ideas, as well as the connections between them.

Development with Minimal Resource Consumption

The immediate goal of a green development approach was to identify design methodologies that would allow growth (buildings and people) without increasing resource consumption. Because new development necessarily consumes resources, the development must either create enough of its own resources to cover the increase, or offset it with savings nearby. The participants applied this concept differently for different resources.

Energy: By installing renewable energy and distributed generation systems within Kyle Canyon Gateway, as much electricity can be generated as the development consumes over the course of a year. This would result in net-zero electricity consumption. In particular, charrette participants discussed the installation of a large solar photovoltaic (PV) array on a berm along a depressed arterial roadway. Such a PV system would have the advantage of generating the most power during the mid- to late-afternoon hours (the shoulder peak) when the area must import the most power.

Charrette participants also discussed energy efficiency opportunities, which are generally the least expensive way to reduce power imports and approach net-zero electricity consumption. Careful building design and the installation of energy efficient appliances such as washers, dryers, air conditioners, and light fixtures can cut peak electric loads and annual usage by upwards of 80 percent, as compared to a typical utility-certified "energy-efficient" house design. These savings can result in a win-win situation for both the utility and the customer. As RMI's Amory Lovins testified to the Public Service Commission of Nevada in 1985, such improvements could cut customer energy bills in half, at no extra construction cost, while saving the utility over $10,000 in capacity investments.

Water: Rather than focus on ways to offset new water consumption by reducing it elsewhere, charrette participants looked at ways to minimize water use in the development in the first place. The discussion spelled out practical ways to reduce the amount of water drawn from Lake Mead to a remarkable fifty gallons per person, per day—a nearly 80 percent reduction from the Las Vegas area average. Proven opportunities included capturing and using stormwater, allowing only native and drought-resistant plants in landscaping, and installing a dual-distribution water system. This system, akin to the fresh/brackish system already used in Salt Lake City which has two separate sets of piping, one for fresh water and one for recycled. All water for indoor use comes from the fresh water pipe. After it has been used in sinks, showers, washing machines and the like, it is cleaned in a nearby recycling plant and put into the second set of pipes. This recycled water is for the development's outdoor requirements, such as landscaping. This makes nearly 100 gallons per person per day available while drawing only fifty from Lake Mead. Another significant component of the reduction stems from the wide availability of water-efficient but high-performance plumbing fixtures, whose spread was in part catalyzed by RMI's 1980s publication of two influential industry-wide catalogues showcasing then little-known water-saving technologies that were becoming available.

Land: Building on any open land is ultimately an unsustainable practice, but good design can mitigate its negative effects. Views and access to nearby mountains and protected areas can be preserved by limiting building height and placement, maintaining open space within the development, and including an extensive network of trails to maintain links between surrounding areas. Additionally, by maintaining natural contours instead of leveling and filling them, natural water channels and animal pathways can be preserved, along with the distinctive character of the original landscape.

Creating Connections

During the charrette, RMI's multidisciplinary approach revealed several ways that a single element of green design could multiply value in ways often overlooked by traditional slice-and-dice design and budgeting processes. For example, every gallon of water saved is a gallon that does not need to be pumped 2,000 vertical feet and several miles from Lake Mead. This, in turn, will save significant pumping energy, whose value could offset the cost of efficient equipment or dual distribution systems.

Another example of compounding benefits arises by integrating transportation infrastructure from the start. By mixing residences with commercial buildings, developing a public transportation system, and building trails designated for alternative transportation (like bicycles and small electric vehicles), Kyle Canyon Gateway can realize diverse benefits. Fewer trips by car will mean less air pollution and less money spent on gas, as well as safer streets for pedestrians. Giving residents an opportunity to run errands and hold jobs locally will reduce traffic congestion there and in downtown Las Vegas, retain more money within Kyle Canyon Gateway's neighborhoods, and encourage interaction between residents, strengthening the development's sense of community.

What's Next

While RMI's work with Las Vegas and the Kyle Canyon Gateway development might seem a minor highlight in a long saga that mixes public- and private-sector interests, the underlying implications are much greater. Settlements in the desert Southwest are growing at an astounding rate. During 1990–2000, Nevada, at 66 percent, was the fastest-growing state in the nation, adding nearly a million people to the already heavily burdened desert. More citizens demand more housing, more roads, more energy, and more food—more than the overburdened environment and the aging infrastructure can provide.

Moreover, the western part of North America, from British Columbia to Chihuahua, has been experiencing a major seven-year drought that shows no sign of abating. The conflict between growth and preserving the natural environment has reached a critical juncture. How our society—the government, public and private firms, NGOs, and academic institutions—designs and governs growth in arid regions is of vital importance.

RMI's role is to define whole-system solutions that can cost-effectively reduce the impact of new growth to the level where it is sustainable—and then go beyond this to understand how we can restore our damaged environment. The public-private-NGO collaboration around Kyle Canyon Gateway may, we hope, become part of that emerging blueprint.

1Charrette: an intensive, interdisciplinary workshop that brings together stakeholders and experts at the very outset of a design or problem-solving process.

About the Author

Will Clift (wclift@rmi.org) is an associate with RMI's Research & Consulting group.

Jim and Mary Dale Deacon
<deaconj@unlv.nevada.edu>
07/08/2007 04:01 PM

To nvgwprojects@blm.gov
cc
bcc
Subject groundwater EIS

These comments are pertinent to both the SNWA Pipeline EIS and the Kane Springs EIS.

Comment No. 11-1

In my scoping comments regarding the SNWA Pipeline EIS, I emphasized the importance of evaluating cumulative effects of the project. Water to be conveyed by the SNWA pipeline project will be pumped from a number of valleys throughout eastern, central, and southern Nevada. Groundwater throughout the entire area is integrated to a considerable degree by a regional aquifer referred to as the Deep Carbonate Aquifer. The recent study completed by USGS referred to as the BARCAS study reports that the degree of integration throughout the area investigated is even greater than previously understood. By implication, that result suggests that integration of the Deep Carbonate Aquifer with the many valley fill aquifers throughout the region is also likely to be greater than previously understood. For that reason it is essential that both the SNWA Pipeline EIS and the Kane Springs Pipeline EIS evaluate cumulative effects that both of those projects are likely to have on the regional aquifer and the regional springs, wetlands, and phreatophyte communities supported by that aquifer. In order to assist you with that evaluation, I attach herewith a manuscript (Word document) recently accepted for publication in Bioscience, and illustrations to be published along with that manuscript (PowerPoint file) in their September issue. While the publication will be available to you before completion of your draft EIS, I submit it now for your consideration in order for you to have a couple of months head start on its use. Should you find it useful, I would also be happy to supply you with lists of species likely to be adversely affected as a consequence of the cumulative effects of the many proposed groundwater pumping projects in the region.

It is important to understand that this evaluation represents a very conservative evaluation of probable long-term effects of the several projects to which I refer. Specifically in making the evaluation, we circumscribed the potential area of impact by reference to a USGS water resources paper by Schaefer and Harrill (1995) which made the basic assumption that the SNWA water project would be the ONLY source of groundwater removal in the region! That assumption is obviously excessively conservative. Our analysis demonstrates that if water rights in the region that existed as of February 2006 were to be maintained and the SNWA project were added to those rights, and no other rights are granted subsequent to February 2006, the SNWA project would be responsible for approximately 25% of the total groundwater removed from the region. On the other hand, if all of the applications submitted as of February 2006 were granted, and the SNWA applications were limited to 180,800 acre-feet per year, SNWA would be responsible for removing approximately 10% of the total groundwater removed from the region.

I hope you find these comments, and this manuscript useful in your analysis of probable impacts.

James E. Deacon

Response to Comment No. 11-1

BLM appreciates your comment. The manuscript and illustrations that you provided will be included in the administrative record.

Jim and Mary Dale Deacon
<deaconj@unlv.nevada.edu>

08/20/2007 11:30 AM

To nvgwprojects@blm.gov
cc
bcc
Subject comments regarding Kane Springs draft EIS

The following comments are submitted as my response to the Kane Springs draft EIS.

Comment No. 11-2

1. Scoping comments requested that BLM examine all impacts of the proposed transfer of 1000-5000 acre feet of ground water from Kane Springs Valley to Coyote Springs Valley. The draft EIS examines only potential to environmental effects of pipeline construction. You have not examined the effects of groundwater withdrawal or of construction of the city made possible by importation of that groundwater. In view of the fact that both groundwater withdrawal and city construction have a high probability of adversely affecting the endangered Moapa Dace, the threatened desert tortoise, and potentially other species, this failure is probably a violation of the National Environmental Policy Act.

Response to Comment No. 11-2
The effects of groundwater withdrawal are discussed in the EIS in Section 4.3, 4.5, and 4.20.3.3.2.

Comment No. 11-3

2. This proposed project is only one of many proposals to develop groundwater from an integrated regional deep carbonate aquifer. Integration of that aquifer has been demonstrated by numerous scientific studies by USGS and other competent hydrologists. These numerous studies develop a consistent, generally accepted consensus that the regional aquifer is integrated, and that groundwater development in one segment of the aquifer is likely to have effects (some of which may be delayed for decades or even centuries) over long geographic distances. Failure to examine the relative contribution of this project to groundwater depletion in the regional aquifer causes this EIS to ignore some of its most probable adverse affects to endangered species.

Response to Comment No. 11-3
Cumulative effects of existing and reasonably foreseeable projects on groundwater depletion of the regional aquifer are discussed in the cumulative impact section 4.20.4.2. Several studies presented in this section untilized large-scale modeling to analyze cumulative impacts from groundwater pumping on regional aquifer. These studies include Schaefer and Harrill 1995, LVVWD 2001, GeoTrans 2001, and USFWS 2006 (see section 4.20.4.2). Cumulative impacts to endangered species are described in section 4.20.4.4.

Comment No. 11-4

3. To some degree this draft EIS relies upon data and studies completed by the project proponent (Vidler/Lincoln County Water District) to assess probable impacts. Conclusions from these studies were rejected by the Nevada State Engineer in his ruling on applications for groundwater from Kane Springs Valley by Vidler/Lincoln County Water District. The fact that those conclusions were rejected by the regulatory agency directly responsible for administering groundwater rights, means there is no justification for relying upon those data in the EIS.

Response to Comment No. 11-4
The preparation of an EIS follows an established process. Data is provided by the proponent, BLM carefully considers the data and accepts or rejects it. Technical information provided by the Proponent is reviewed by the BLM and its contractor. The BLM then deploys a team of specialists within sister agencies to review the data. Also see responses to comments 5-4 and 8-2-1.

Comment No. 11-5

In view of the deficiencies noted above, it is incumbent upon the BLM to rewrite the draft EIS, analyzing the full range of alternatives, the probable impacts of groundwater pumping, and the cumulative impacts of all proposals to pump and export groundwater from the regional carbonate aquifer. Furthermore BLM must rely on peer-reviewed independent scientific literature, not unacceptable, non-peer-reviewed conclusions presented by the project proponent.

Response to Comment No. 11-5
Chapter 4 (Environmental Consequences) describes potential indirect impacts to regional springs and other sensitive resources within the project region of influence. Chapter 4.20 (Cumulative Impacts) describes potential cumulative impacts to regional springs and other sensitive resources within the cumulative impact region of influence. Applicant proposed Environmental Protection Measures are listed in Appendix C. Monitoring and mitigation program is discussed above.

James E. Deacon
968 Camelia Drive
Henderson, NV 89011

"Jo Anne Garrett"
<joagarrett@surfbest.net>
08/20/2007 10:23 PM

To <nvgwprojects@blm.gov>
cc
bcc
Subject Comments on Kane Springs Draft EIS

To: BLM/Groundwater Projects Office
Reno, NV 89520

From: Jo Anne Garrett
Baker, NV 89311

Re: Kane Springs Draft EIS

The above-named Draft EIS is amazingly disappointing! I trust that another document will be crafted in order to address all of the deficiencies that will surely be pointed out by other more knowledgeable people than myself.

The proposal to transfer thousands of gallons of desert water to construct an unsustainable luxury development indicates ignorance or total disregard, or both, on the part of the developer. A project of this magnitude is a dire threat the the fragile Great Basin ecosystem, and requires the most thorough study of environmental impacts, rather than the cursory and partial approach of this Draft. The new Draft should address at least the following:

Comment No. 12.1 1) A complete range of alternatives needs to be studied.

Comment No. 12.2 2) A complete study of ***all impacts*** needs to be done, including first of all the impact of pumping these quantities of water.

Comment No. 12.3 3) The cumulative impacts of the growing number of proposals targeting the groundwater of interconnected basins in counties of both Nevada and Utah must be thoroughly studied and included in the new Draft.

Comment No. 12.4 4) The Public Scoping Comments must be honored by a careful review and response for every valid concern

Comment No. 12.5 5) Scientific and technical information and data must include valid, peer-reviewed sources! The proponent's info and data must be validated, or it is meaningless.

Thanks for your careful reconsideration and rectifying of this important DEIS !!

Jo Anne Garrett
775-234-7205
P.O.Box 130
Baker NV 89311

Response to Comment No. 12-1
As explained in Chapter 1.5 - Scoping, the BLM considered comments received through public scoping when developing the scope of issues and alternatives to be analyzed in the Draft EIS. All comments received during scoping were systematically reviewed by an interdisciplinary team of resource specialist from various BLM offices, representatives from cooperating agencies, and the BLM's EIS consultants.

Response to Comment No. 12-2
Section 4.20.4 specifically addresses potential impacts from this project including the effects of pumping 1,000 af/y and 5,000 af/y of groundwater in the Kane Springs Valley.

Response to Comment No. 12-3
Each of the areas mentioned involve separate projects with their own unique issues and timelines. Each represents a discreet hydrographic basin for which the allocation of water rights is under the authority of the Nevada State Engineer. The cumulative resource analysis area for water resources includes the following Hydrographic Areas: Kane Springs Valley (No. 206), Coyote Springs Valley (No. 210), and Muddy River Springs Area (No. 219). Projects occurring within these areas were evaluated for cumulative impacts (Chapter 4.20.4.2).

Response to Comment No. 12-4
See response to comment 12-1

Response to Comment No. 12-5
Environmental resource data was collected and analyzed to the level of detail necessary to understand potential impacts and to distinguish project effects (both beneficial and adverse) among the Proposed Action and alternatives. The data analyzed in this EIS are the best available representation of current and predicted conditions at this time. However, there is a level of uncertainty associated with any set of data in terms of predicting impacts, especially where natural systems are involved. See also responses to comments 5-4, 8-2-1, and 11-4.

RECEIVED
BUREAU OF LAND MANAGEMENT
NEVADA STATE OFFICE

07 JUN 28 AM 9:00

2340 W 1620 N Circle
Saint George, UT 84770

June 23, 2007

Penny Woods, Nevada Groundwater Project Manager
U.S. Bureau of Land Management, Nevada State Office
PO Box 12000
Reno, NV 89520-0006

Re: N 1793 (Kane Springs Valley)

I am a mineral exploration geologist employed by a public corporation which is developing resources in Lincoln County. I was formerly a Nevada resident engaged in geological work in Nevada for over 40 years.

I oppose the proposed Kane Springs Valley Groundwater Development Project for the following reasons:

Comment No. 13-1

A. The project will overdraw groundwater basins in Lincoln County and western Utah for the purpose of building an unnecessary "new city" in the desert, including golf courses, swimming pools, lawns and other water-wasteful uses for which the desert environment is unsuited. I believe that these water uses will deprive current agricultural and stockraising businesses of water necessary for their livelihood, and adversely affect natural wildlife.

Comment No. 13-2

B. In particular, I oppose exportation of water from Lincoln County and surrounding rural areas for the ultimate benefit of overdevelopment and wasteful water consumers in the Las Vegas area, which is clearly the ultimate intention of the several planned water schemes currently being reviewed.

Thank you for the opportunity to comment.

Peter H. Hahn, C.P.G.

Response to comment 13-1

As described in Chapter 1.2 – Purpose and Need, the purpose of LCWD's application to the BLM is to construct and operate infrastructure to convey groundwater resources permitted by the Nevada State Engineer across federal lands managed by the BLM. The CSI development in Lincoln and Clark County are separate actions from the Proposed Action. CSI development in both counties would occur in the absence of the Proposed Action. The NSE is the governing entity that has the authority to approve and control the amount of groundwater pumped from basins in Nevada. No impacts are expected to agriculture or stock raising (Chapter 4.6.1.2).

Response to comment 13-2

Comment noted.

Kane Springs Valley Groundwater Development Project
Draft Environmental Impact Statement
Comment Form

Public participation is critical to helping ensure BLM has considered the views of the public in the decision on this groundwater development project. BLM encourages you to get involved. Please take a few minutes to complete this form and provide any comments or questions you would like addressed. **The comment period ends on Monday, August 20, 2007.** Written comments can be sent via mail, fax, or e-mail to the BLM Nevada Groundwater Projects Office or submitted in person at the public meetings (see details below). Please contact the Groundwater Projects Office if you wish to receive a paper copy or CD of the Draft EIS.

Groundwater Projects Office Contact Info:

Phone: 775-861-6681 Fax: 775-861-6689 E-mail: nvgwprojects@blm.gov

Mailing Address:
P.O. Box 12000
Reno, NV 89520

Fed-Ex/Physical Address:
1340 Financial Blvd
Reno, NV 89502

Public Meeting Info:

Carson City, NV: Monday, July 30, 2007, 4-6pm, Plaza Hotel (Sierra Room)

Pioche, NV: Tuesday, July 31, 2007, 6-8pm, Pioche Town Hall

Alamo, NV: Wednesday, August 1, 2007, 6-8pm, Ambulance Barn

Las Vegas, NV: Thursday, August 2, 2007, 6-8pm, Atrium Suites Hotel (conference room F)

Name: Bruce Holloway E-mail: bholloway9@cox.net
Organization: Title:
Mailing Address: 1505 FRANDOSA LN
City: LAS VEGAS State: NV Zip: 89117

☒ Add my name to the mailing list ☐ Withhold my name and address from public review**

***Before including your address or other personal identifying information, you should be aware that this information may be made publicly available at any time. While you can ask us to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so.*

COMMENT (continue on separate sheet if necessary)

There are several petroglyph sites in the area. You need to be aware of where they are.

B Holloway 7/2/07

Comment No. 14.1

Response to Comment No. 14-1

A cultural resources study, including field surveys to identify sites, was completed for the KSV DEIS. No sites were identified that would be impacted by this project.

Abigail C. Johnson
P.O. Box 183
Baker, NV 89311

August 19, 2007

RE: Kane Springs Draft EIS

The Kane Springs Draft EIS does not conform to the letter or spirit of the National Environmental Policy Act and its implementing regulations. Please make this letter and my comments part of the record.

Comment No. 15.1

1. The BLM did not adequately respond to the public scoping comments, specifically the outcry from many commenters for a thorough study of all the impacts of the proposed transfer of 1000-5000 acre feet to Coyote Springs. However, in the DEIS only pipeline construction impacts were studied. This is inadequate and unacceptable.

Comment No. 15.2

2. The draft EIS does not study a full range of alternatives.

Comment No15.3

3. The draft EIS does not fully analyze the impacts of the proposed project.

4. The draft EIS does not analyze the cumulative impacts of the many proposals to pump and export groundwater from the carbonate aquifer area in Lincoln, White Pine and Clark Counties in Nevada, and Utah counties bordering Nevada.

Comment No. 15.4

The BLM should re-write the draft EIS and analyze a full range of alternatives, the full range of impacts from pumping 1000-5000 acre feet to support the Coyote Springs development, the cumulative impacts of all of the current proposals to pump and export carbonate aquifer water in eastern Nevada, and to use only peer-reviewed independent science in the new (rewritten) draft EIS.

Thank you for considering my comments and making them part of the official administrative record for this project.

Sincerely,

Abigail C. Johnson

Response to Comment No. 15-1

As explained in Chapter 1.5 - Scoping, the BLM considered comments received through public scoping when developing the scope of issues and alternatives to be analyzed in the Draft EIS. All comments received during scoping were systematically reviewed by an interdisciplinary team of resource specialist from various BLM offices, representatives from cooperating agencies, and the BLM's EIS consultants. See also response to comment 15-1.

Response to Comment No. 15-2

As described in Chapter 1.2 – Purpose and Need, the purpose of LCWD's application to the BLM is to construct and operate infrastructure to convey groundwater resources permitted by the Nevada State Engineer across federal lands managed by the BLM. The NSE is the governing entity that has the authority to approve and control the amount of groundwater pumped from basins in Nevada.

Response to Comment No. 15-3

The EIS, as written, complies with the Council for Environmental Quality regulations for implementing NEPA (40 CFR § 1500-1508). Potential impacts of the proposed project are fully disclosed in Chapter 4.0

Response to Comment No. 15-4

Early in the NEPA compliance process, BLM considered whether to include all of the groundwater projects in a single NEPA analysis. For the following reasons, BLM concluded that all of the groundwater projects should not be included in a single NEPA analysis, but rather treated as separate Right-of-Way applications: 1) the projects are located in different geographic areas; 2) they each are drawing water from different hydrographic basins; 3) they are not dependent one upon the other; 4) they are being developed in differing timeframes and the related water is demanded at different times; and 5) the water being developed by each is being used in distinctly different locations.

Cumulative impacts are discussed for all resources in Chapter 4.20.4. The geographic scope for the analysis is referred to as the cumulative resource analysis area and varies by resource. The timeframe for the cumulative impact analysis encompasses past and present activities in the areas described above, and future activities that may extend up to 20 years in the future and is described in Chapter 4.20.2. Other actions affecting resources, ecosystems, and/or human communities of concern are described in Section 4.20.3 Cumulative Projects Considered.

"Abigail Johnson"
<saged183@gmail.com>
08/20/2007 10:23 PM

To nvgwprojects@blm.gov
cc
bcc
Subject Kane Springs EIS comments

Please find attached comments in Word document and make them part of the record of comments on the Kane Springs DEIS. Thank you.

Abigail Johnson
PO Box 183

Baker NV 89311 Kane Springs DEIS.doc

Information
Washington/WO/BLM/DOI
Sent by: Peggy S Britell

07/05/2007 08:09 AM

To bk1492@aol.com
cc nvgwprojects@blm.gov
bcc
Subject Re: Fwd: public comment on kane spring valley groundwater development project deis

Your email has been forwarded to our Nevada State Office.

bk1492@aol.com

bk1492@aol.com
07/05/2007 11:01 AM

To woinfo@blm.gov
cc
Subject Fwd: public comment on kane spring valley groundwater development project deis

what is wrong with the e mail address that was listed in this kane valley project? it is not working. please forward

b sachau

-----Original Message-----
From: Bk1492@aol.com
To: nygwproject@blm.gov; americanvoices@mail.house.gov; comments@whitehouse.gov; vicepresident@whitehouse.gov
Sent: Thu, 5 Jul 2007 7:16 am
Subject: public comment on kane spring valley groundwater development project deis

Comment No. 16.1	i am concerned about the effect of this development on animal and bird life, who previously had water access. what specific steps are you taking to keep the wildlife and birds that live in this area alive. i know that developers care very little about wildlife and birds, but it is important to the national owners of this land to save their lives and we want action to do so. please do not go in and kill them BEFORE developmetn which also happens far too often and is never punished by our laws.	***Response to Comment No. 16-1*** Access to surface water for wildlife would not be impaired by the Proposed Action or Alternative 1.
Comment No. 16.2	what has management done to stop the sale of invasive species by nursery profiteers in this area? national taxpayers should NOT be taxed to clean our invasive species purposefully sold by profiteers in the area. this needs to be stopped completely. stop every single nursery profiteer from selling these plants and get the word out that nobody should trade in these plants at any time. they are a problem. they need to be wiped out. they are not native.	***Response to Comment No. 16-2*** The sale of invasive species by nurseries is beyond the scope of this EIS. The comment has been noted and will be included in the administrative record for this EIS.
Comment No. 16.3	comments on specific pages - es14 - it is not "temporary" disturbance when its a couple of years or even a year, which wipes out food source, water source for wildlife and birds. they die. can you go without water or food for a year - let's get real here about the deaths that will be caused in the animal community and stop lying with these deceptive words "temporary disturbance". these plans are death to wildlife. we cannot take the continued assault of mankind and developers--they are wiping out the natural world. this is wrong..	***Response to Comment No. 16-3*** The comment has been noted and will be included in the administrative record for this EIS.

Comment No. 16.4

es15 - the meager funds for the tortoise show the horror of wildlife killing --trying to be made up by paying a few cheap bucks - why arent the grazing areas used for this project instead? get rid of the cattle ranchers with their assaults on the environment makes much more sense.

Comment No. 16.5

pg 4-21 - please make sure no bird or wildlife is EVER impacted by any negligently designed power line structures. make these power lines build environmentally instead of accomplishing bird and wildlife death as they presently do. why are we allowing hese profiteers to get away with this kind of horror anyway?

Comment No. 16.6

pg 4-40 why isnt the "utility use" on private land bought and paid for by the utility profiteers?

Comment No. 16.7

4-41 i do not agree or believe the statement that it is "unlikely" individual tortoises would be destroyed. that seems like a deceptive statement in my opinion.

Comment No. 16.8

5-2 - consults with other agencies is certainly not always what the american public wants done with their land that they own. politicians are being bought every day by fat cat lobbyists and working for their own interests and not public interest. or the poliicians pander to special interests or developers and exercise power over these agencies. the stiuation emanating from the corruption in washington dc these days is bringing about agencies who FORGET the general public interest and indeed work against the general public good. we need the general public more involved. we dont need agencies making choices on alternatives for us - that is outrageous.

appendix c losses are too great. the whole plan needs replanning.

b. sachau
15 elm st
florham park nj 07932

****

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.

Response to Comment No. 16-4

A remuneration fee will be determined by and paid to the USFWS for potential impacts to the desert tortoise. This fee will be determined in the Biological Opinion that is expected to be issued by February 10, 2008. The fee will be used for habitat enhancement and future studies for the purpose of ensuring the continued existence of the species. As explained in Chapter 3.6.1, the project area crosses two range allotments - Delamar and Grapevine, both of which are cow/calf operations.

Response to Comment No. 16-5

As described in Chapter 4.5.1.2.3, Migratory Birds, the transmission lines associated with the Proposed Action follows recommendations by the Avian Power Line Interation Committee to minimize electrocution and collision mortality.

Response to Comment No. 16-6

The text of this FEIS has been changed in Chapter 4.5.1.1.1 to reflect the possibility that individual desert tortoise may be harmed as a result of the Proposed Action and Alternative 1.

Response to Comment No. 16-7

An ESA Section 7 incidental take permit for desert tortoise will be required for the Proposed Action and Alternative 1.

Response to Comment No. 16-8

The NEPA and ESA require the BLM to consult with the USFWS, tribes, state, and local agencies. A list of these agencies is provided in Chapter 5.2.

jean public
<jeanpublic@yahoo.com>
06/22/2007 08:21 AM

To nvgwprojects@blm.gov, comments@whitehouse.gov, americanvoices@mail.house.gov
cc vicepresident@whitehouse.gov, nytnews@nytimes.com, foe@foe.org, info@defenders.org
bcc
Subject public comment on federal register of 6/22/07 vol 72 #120

Comment No. 16.9

fed reg doc e7 11807 ground water development facilities in kane springs valley nevada

please send me a paper copy of the ea on this project as well as extend time to comment by 60 days.

nevada is growing at a rapid pace but i want to know what arrangements have been made in the taking of all of this water so that birds, animals can have water to drink and that they are not sucked dry by this taking. i need the details on this please becaause if i dont see that arrangements are made for birds and wildlife to have water, i say can and ban the project.

it is time that we co exist with god's creatures on this earth and not suck them dry and kill them with projects like these.

.b sachau
15 elm st
florham park nj 07932

Response to Comment No. 16-9
Comment noted.

Take the Internet to Go: Yahoo!Go puts the Internet in your pocket: mail, news, photos & more.
http://mobile.yahoo.com/go?refer=1GNXIC

"Carl Savely"
<Carl.Savely@WingfieldNevadaGroup.com>
08/14/2007 07:29 AM

To <nvgwprojects@blm.gov>
cc "Don Pattalock" <dpattalock@nlrc.com>
bcc
Subject Comments to Kane Springs Valley Groundwater Development Project Draft EIS

Penny Woods,
Nevada Groundwater Project Manager

Comment No. 17.1

I am providing this comment on behalf of Coyote Springs Investment LLC ("CSI"), the master planner of the Coyote Springs Development – Lincoln County. The first sentence of the last paragraph of Section 4.20.3.3.2 on page 4-54 states "CSI anticipates 55,000 AFY would be needed to serve the development's water needs at build out." Please replace the number "55,000" with the number "70,000" in this sentence. This change needs to be made to ensure consistency with the EIS being prepared in support of CSI's 404 permit and ESA Sec. 10 permit applications associated with the Coyote Springs Development – Lincoln County.

Response to Comment No. 17-1
The DEIS separates CSI water requirements by county - Clark County approximately 15,000 AFY (Chapter 4.20.3.2.1) and Lincoln County approximately 55,000 AFY (Chapter 4.20.3.3.2).

Please let me know if you have any questions.

Carl Savely

Carl D. Savely
General Counsel
Wingfield Nevada Group Management Company
6600 N. Wingfield Parkway
Sparks, Nevada 89436
Direct Line: 775-321-5940
Main Line: 775-626-6000
Fax: 775-626-8925

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If you have received this message by mistake, please immediately notify us by replying to the message and delete the original message immediately thereafter.

Email to nvgwprojects@blm.gov

Penny Woods,
Project Manager
BLM Nevada Groundwater Projects Office

Comment on Kane Springs Valley Groundwater Development Project Draft Environmental Impact Statement

Comment:
Map 4-1, Interrelated Projects, indicates the location of Mineral Survey 1905 incorrectly.

Comment No. 18.1

Explanation:
Mineral Survey 1905 is located generally between Jacks Mountain and Mud Springs in one or more of the unsurveyed sections 29, 32, and/or 33, T6S R70E. Correspondence from the BLM Nevada State Office (9600 (NV-952)MS Position dated Aug 11, 2004) indicates the location as depicted on the Master Title Plat is in error. Following this correspondence the following note was added to the Master Title Plats:

> 9/2/04 "MS 1905 location uncertain: Natural calls in the mineral survey record when referenced to U.S.G.S. quadrangle maps "Jacks Mountain and Bunker Peak" indicates the mining claim is approximately one mile northeasterly of the location shown on this plat (unsurveyed T. 6S. R. 70 E. secs 23 and 33)."

Although not within the immediate area of the Kane Springs Valley Groundwater Development Project there has been almost three years for the correct location information to be included in new map products. Other BLM activities are planned in the area of MS 1905 in the near future and it would be appropriate to see MS 1905 correctly located on those maps as well as in the current document.

I believe funds made available through the Lincoln County Lands Act (LCLA) and/or Lincoln County Conservation, Recreation and Development Act (LCCRDA) could be appropriately and legitimately applied to the survey of this Mineral Survey.

Thanks

Tim Vogt
timv@earthlink.net

Response to Comment No. 18-1
Comment noted.

"Tim Vogt"
<timv@earthlink.net>
08/19/2007 05:56 PM

To <nvgwprojects@blm.gov>
cc <timv@earthlink.net>
bcc
Subject Comment: Kane Springs Valley Groundwater Development Project DEIS

Email to nvgwprojects@blm.gov

Penny Woods,

Project Manager

BLM Nevada Groundwater Projects Office

Comment on Kane Springs Valley Groundwater Development Project Draft Environmental Impact Statement

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I believe funds made available through the Lincoln County Lands Act (LCLA) and/or Lincoln County Conservation, Recreation and Development Act (LCCRDA) could be appropriately and legitimately applied to the survey of this Mineral Survey.

Thanks

"Peter G Williamson"
<petergw@pacbell.net>
07/14/2007 11:51 AM

To <nvgwprojects@blm.gov>
cc
bcc
Subject Comments on Kane Springs Valley Groundwater Development Project Draft EIS

To Whom It May Concern:

Comment No. 19.1

I have two questions regarding this EIS. First, how has the determination of number of monitoring wells been made? And second, as I understand it, the reference level for the monitoring wells is proposed to be at the time the project is complete prior to extraction. This is a single point in time – is there any evidence that this reference level and timing are representative of groundwater levels throughout the year? Or, do these levels fluctuate relative to the timing of spring runoff? If this were the case, it should be taken into consideration in establishing reference levels.

Peter

Peter Williamson

Response to Comment No. 19-1

The LCWD and USFWS Stipulated Agreement and the associated Mitigation, Monitoring, and Management Plan are described in Chapter 1.4.2.1. Key components of the agreement have been summarized and added to this section as a bulleted list. The Kane Springs Valley Groundwater Development project would be constructed and operated in accordance with the stipulated agreement, and monitoring plan directed by the Nevada State Engineer. Currently eight wells, in the project region of influence, are being monitored. The final number of wells to be monitored and the frequency of data collection will be determined by the Nevada State Engineer, in consultation with the US Fish and Wildlife Service.