

**U.S. Department of the Interior
Bureau of Land Management**

**Finding of No Significant Impact and Decision Record
DOI-BLM-NV-L0200-2008-002-EA
October, 2009**

**STIPULATED PIEZOMETERS AND ASSOCIATED
APPURTENANCES**

Spring Valley, White Pine County, Nevada

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Groundwater Resources Department
P.O. Box 99956
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**UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
SCHELL FIELD OFFICE**

INTRODUCTION

I have reviewed Environmental Assessment (EA) DOI-BLM-NV-L0200-2008-002- EA, for the *Stipulated Piezometers and Associated Appurtenances*, dated October, 2009 taking into consideration the project design specifications, including monitoring measures identified in the EA:

Monitoring: Periodic monitoring will consist of the following:

- BLM and SNWA will monitor the Proposed Action sites for the continued operation of piezometers and other monitoring equipment until the sites have been abandoned and reclaimed. Noxious and invasive weed populations will be monitored at the sites. Seedling establishment, which would stabilize soils and minimize the introduction and spread of weeds, would also be monitored at the sites prior to termination of the ROW grant.

I have also considered the Council on Environmental Quality's (CEQ) criteria for significance (40 CFR 1508.27), both with regard to the context and the intensity of impacts described in the EA:

Context:

The proposed action is located in an uninhabited area of no local, regional or national importance.

Intensity:

- 1) Impacts that may be both beneficial and adverse: The Environmental Assessment has analyzed and disclosed both beneficial and adverse impacts of the Proposed Action. These impacts combined do not amount to any significant impacts.
- 2) The degree to which the Proposed Action affects public health or safety: The Proposed Action does not affect public health or safety either adversely or in a significantly beneficial manner. The subsequent land use would be regulated by local, state, and federal regulations as applicable; therefore, no adverse affects to public health or safety are anticipated.
- 3) Unique characteristics of the geographic area such as proximity to historical or cultural resources, parks lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas: There are no parks lands, prime farmlands, wild and

scenic rivers, known wetland/riparian areas, or ecologically critical areas on the Proposed Action sites. Cultural inventories have been performed and no sites eligible for nomination to the National Register of Historic Places are located at the Proposed Action sites.

- 4) *The degree to which the effects on the quality of the human environment are likely to be highly controversial:* The effects of conducting long-term hydraulic monitoring and associated data collection are well established and there is little to no controversy as to what they are.
- 5) *The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks:* The effects of conducting long-term hydraulic monitoring and data collection are well established.. No known risks exist on the proposed piezometer sites. It is highly unlikely that any unknown, unique, or uncertain risks exist.
- 6) *The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration:*
Conducting long-term hydraulic monitoring and data collection is a common occurrence on public and private lands throughout the United States. No precedent for future actions with significant effects would be established.
- 7) *Whether the action is related to other actions with individually insignificant, but cumulatively significant impacts:* Based on the conditions set forth in this Finding of No Significant Impact and Decision Record, no significant impacts will occur due to the Proposed Action. The subsequent land use would be regulated by local, state, and federal regulations as applicable; therefore, no significantly cumulative impacts are anticipated.
- 8) *The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing on the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historic resources:* No sites eligible for nomination to the National Register of Historic Places are located at the proposed sites. Because the needs assessment identified no sites would be damaged, no significant impacts are suspected.
- 9) *The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973:* The Proposed Action would not adversely affect endangered or threatened species or their habitat. No endangered or threatened species were identified, so no significant impacts are expected.
- 10) *Whether the action threatens a violation of Federal, State, local or tribal law or requirements imposed for the protection of the environment:* This action is consistent with federal, state, local, and tribal laws and other requirements for the protection of

the environment. All agencies were properly notified of the Proposed Action and given appropriate comment time to respond.

FINDING OF NO SIGNIFICANT IMPACT

I have determined that, with incorporation of the monitoring measures listed above, the proposed action will not significantly affect the quality of the human environment and that preparation of an Environmental Impact Statement (EIS) is not required.

/s/ Mary D'Aversa
Mary D'Aversa
Field Manager
Schell Field Office

10/5/09
Date



United States Department of the Interior



BUREAU OF LAND MANAGEMENT
Schell Field Office
HC33 Box 33500 (702 N. Industrial Way)
Ely, Nevada 89301-9408

http://www.blm.gov/nv/st/en/fo/ely_field_office.html

In Reply Refer To: NVL0200
NVN-84216

DECISION

Southern Nevada Water Authority	:	Decision Record
Groundwater Resources Dept.	:	ROW Grant
P.O. Box 99956	:	DOI-BLM-NV-L0200-2008-002-EA
Las Vegas, NV 89193-9956	:	

I have reviewed the application, the Environmental Assessment (EA), and have made a Finding of No Significant Impact (FONSI) for Southern Nevada Water Authority proposal for the Stipulated Piezometers and Associated Appurtenances. Based on that review and the record as a whole, I approve granting the proposed Right-of-Way NVN-84216.

RATIONALE:

- 1) The Proposed Action is in conformance with the Ely District Record of Decision and Approved Resource Management Plan signed in August of 2008. In the EA, Section C of the Introduction documents the conformance review.
- 2) The proposal for public land rights-of-way are made under the authority of Section 501 of the FLPMA (43 Code of Federal Regulations [CFR] 2801).
- 3) The Proposed Action is consistent with all other federal, state, local, and tribal policies and plans to the maximum extent possible.

PUBLIC INVOLVEMENT:

State, county, and local agencies, tribal agencies, adjacent landowners, and various organizations were informed about the proposed SNWA Stipulated Piezometers and Associated Appurtenances project in Spring Valley, White Pine County, Nevada. The EA was posted on the Ely BLM website for a 30 day period for public information and comments.

One comment letter was received on the EA from the following Party:

- Water Keepers

The Water Keepers had several comments. Chapter 1 of the EA was revised to clarify the need for the proposed action.

Most of the comments were in regards to proposed action; why there were only eight sites monitored when there are dozens of springs and water sources in Spring Valley that could potentially be impacted by the Clark, Lincoln and White Pine County Groundwater Development Project. In reality, there are 13 sites to be monitored, but five are on private land and not subject to BLM ROW requirements. The 13 sites in question were selected by the Technical Review Panel and the State Engineer to develop the best monitoring network for water withdrawals with the selected basins.

The EA, with the previously identified minor revisions, will be posted on the Ely website at <http://www.blm.gov/nv/>. Persons interested may access the document at the website by first clicking on the “Ely” District and then selecting the document to download.

This document is available upon request to the Schell Field Office, U.S. Highway 93, 702 North Industrial Way (HC 33 Box 33500), Ely, NV 89301-9408.

APPEALS:

This decision may be appealed to the Interior Board of Land Appeals, Office of the Secretary, in accordance with the regulations contained in 43 CFR, Part 4. The appellant has the burden of showing that the decision appealed from is in error. If an appeal is taken, a notice of appeal must be filed at the Bureau of Land Management, Schell Field Office, 702 North Industrial Way, Ely, NV within 30 days of either of receipt of the decision if served a copy of the document, or otherwise within 30 days of the date of the decision. If sent by United States Postal Service, the notice of appeal must be sent to the following address:

Bureau of Land Management
Schell Field Office
HC 33 Box 33500
Ely, NV 89301-9408.

The appeal may include a statement of reasons at the time the notice of appeal is filed, or the statement of reasons may be filed within 30 days of filing this appeal. At the same time the original documents are filed with this office, copies of the notice of appeal, statement of reasons, and all supporting documentation also must be submitted to each party named in this decision and to the Department of Interior Solicitor at the following address:

Regional Solicitor, Pacific Southwest Region
U.S. Department of the Interior
2800 Cottage Way, Room E-2753
Sacramento, CA 95825-1890

If a statement of reasons is filed separately from the notice of appeal, it also must be sent to the following location within 30 days after the notice of appeal was filed:

Board of Land Appeals
Office of Hearings and Appeals
4015 Wilson Boulevard
Arlington, VA 22203

In accordance with 43 CFR 2801.10, this Decision will remain in full force and effect during the appeal unless a written request for a Stay is granted. If the appellant wishes to file a petition pursuant to regulations at 43 CFR 4.21 for a stay of the effectiveness of this decision during the time that the appeal is being reviewed by the Board, the petition for a stay must accompany the notice of appeal. A petition for a stay is required to show sufficient justification based on the standards listed below. If the appellant requests a stay, the appellant has the burden of proof to demonstrate that a stay should be granted.

Standards for Obtaining a Stay

Except as otherwise provided by law or by other pertinent regulation, a Petition for a Stay of a Decision pending appeal shall show sufficient justification based on the following standards:

- (1) The relative harm to the parties if the stay is granted or denied,
- (2) The likelihood of the appellant's success on the merits,
- (3) The likelihood of immediate and irreparable harm if the stay is not granted, and
- (4) Whether the public interest favors granting the stay.

Approved by:

/s/ Mary D' Aversa
Mary D' Aversa
Field Manager
Schell Field Office

10/5/09
Date

**U.S. Department of the Interior
Bureau of Land Management**

**Environmental Assessment
DOI-BLM-NV-L020-2008-002-EA
October , 2009**

**STIPULATED PIEZOMETERS AND ASSOCIATED
APPURTENANCES**

***Location:
Spring Valley, White Pine County, Nevada***

***Applicant/Address:
Southern Nevada Water Authority
Groundwater Resources Department
P.O. Box 99956
Las Vegas, NV 89193-9956***

U.S. Department of the Interior
Bureau of Land Management
Ely District Office
Phone: (775) 289-1800
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PROJECT NAME:

Stipulated Piezometers and Associated Appurtenances

CASE FILE #:

N-84216

LEGAL DESCRIPTION:

Mt. Diablo Meridian, Nevada

Permanent Right-of-Way

Blind Spring piezometer, staff gage, and access road: SE¹/₄ of the SE¹/₄ of the NE¹/₄ and NE¹/₄ of the NE¹/₄ of the SE¹/₄ of Section 23, Township 11 North, Range 67 East. The piezometer and staff gage site would be approximately 103 feet wide by 106 feet long, or approximately 0.25 acre and the access road would be approximately 10 feet wide by 70 feet long, or approximately 0.02 acre.

The Seep piezometer, staff gage, and access road: NE¹/₄ of the SW¹/₄ of the NE¹/₄, and the N¹/₂ of the SE¹/₄ of the NE¹/₄ of Section 26, Township 12 North, Range 67 East. The piezometer and staff gage site would be approximately 103 feet wide by 106 feet long, or approximately 0.25 acre and the access road would be approximately 10 feet wide by 2,260 feet long, or approximately 0.52 acre.

Layton Spring piezometer, staff gage, discharge gage, and access road: E¹/₂ of the NW¹/₄ of the SE¹/₄, and SW¹/₄ of the SE¹/₄ of Section 4 and NE¹/₄ of the NW¹/₄ of the NE¹/₄ of Section 9, Township 14 North, Range 67 East. The piezometer, staff gage, and discharge gage site would be approximately 103 feet wide by 106 feet long, or approximately 0.25 acre and the access road would be approximately 10 feet wide by 3,050 feet long, or approximately 0.70 acre.

4WD Spring piezometer and staff gage: NW¹/₄ of the SE¹/₄ of the NW¹/₄ of Section 30 of Township 15 North, Range 67 East. The piezometer and staff gage site would be approximately 103 feet wide by 106 feet long, or approximately 0.25 acre.

Rock Spring V-notch weir and staff gage: SE¹/₄ of the SE¹/₄ of the NE¹/₄, of Section 7, Township 15 North, Range 68 East. The V-notch weir and staff gage site would be approximately 69 feet wide by 315 feet long, or approximately 0.50 acre.

W Spring Valley Complex 1 piezometer, staff gage, and access road: SE¹/₄ of the NE¹/₄ of the SW¹/₄ of Section 30 Township 17 North, Range 67 East. The piezometer and staff gage site would be approximately 103 feet wide by 106 feet long, or approximately 0.25 acre and the access road would be approximately 10 feet wide by 190 feet long, or approximately 0.05 acre.

South Millick Spring piezometer, staff gage, and access road: SW¹/₄ of the SE¹/₄ of the SW¹/₄ and SE¹/₄ of the SE¹/₄ of the SW¹/₄ of Section 25, Township 17 North, Range 67 East. The piezometer and staff gage site would be approximately 103 feet wide by 106 feet long, or approximately 0.25 acre and the access road would be approximately 10 feet wide by 320 feet long, or approximately 0.08 acre.

Willow Spring piezometer, staff gage, permanent flume, and access road: SE $\frac{1}{4}$ of the SW $\frac{1}{4}$ of the NW $\frac{1}{4}$ and NE $\frac{1}{4}$ of the NW $\frac{1}{4}$ of the SW $\frac{1}{4}$ of Section 15, Township 21 North, Range 66 East. The piezometer, staff gage, and permanent flume site would be approximately 69 feet wide by 315 feet long, or approximately 0.50 acre and the access road would be approximately 10 feet wide by 440 feet long, or approximately 0.10 acre.

Total acreage for piezometers and associated appurtenances is approximately = 2.5 acres

Total acreage for the access roads is approximately = 1.47 acres

Total right-of-way for piezometers and access roads is approximately = 3.97 acres

CASE TYPE:

Federal Land Policy and Management Act Title V Section 501, Right-of-way (ROW)

APPLICANT:

Southern Nevada Water Authority (SNWA)

I. INTRODUCTION

This Environmental Assessment (EA) has been prepared to analyze the Southern Nevada Water Authority's Rights-of-Way (ROW) application relative to the Stipulated Piezometers and associated appurtenances. The EA is a site-specific analysis of potential impacts that could result with the implementation of a proposed action or alternatives to the proposed action. The EA assists the Bureau of Land Management (BLM) in project planning and ensuring compliance with the National Environmental Policy Act (NEPA), and in making a determination as to whether any "significant" impacts could result from the analyzed actions. "Significance" is determined by the consideration of context and intensity of the impacts. If there is a Finding of No Significant Impact (FONSI), the context and intensity criteria are listed with rationale for the determination in the FONSI document.

This document is tiered to the *Ely Proposed Resource Management Plan/Final Environmental Impact Statement* (RMP/EIS) released in November 2007. Should a determination be made that implementation of the proposed action would not result in "significant environmental impacts" or "significant environmental impacts beyond those already disclosed in the RMP EIS", a FONSI will be prepared to document that determination, and a Decision Record issued providing the rationale for approving the chosen alternative.

A. Background Information

On October 9, 2007, the Southern Nevada Water Authority (SNWA) applied for rights-of-way (ROWs) to install eight piezometers, associated appurtenances, and access roads in Spring Valley. On May 21, 2008, SNWA requested a ROW amendment to install a total of seven piezometers, eight staff gages, one permanent flume, one V-notch weir with hydrologic measuring equipment, one discharge gage, and six access roads in Spring Valley, White Pine County, Nevada (Proposed Action). The stipulated piezometers and associated appurtenances would be installed to collect data in Spring Valley. A permanent ROW grant, with a term of 30 years, is requested. Each of six of the proposed sites (Blind Spring, The Seep, Layton Spring, 4WD Spring, W Spring Valley Complex 1, and South Millick Spring) would be approximately 0.25 acre in size. Two sites, Rock Spring and Willow Spring, would each be approximately 0.50 acre in size. The additional acreage for these two sites would include the optimal area for the staff gages, V-notch weir with hydrologic measuring equipment, and/or permanent flume. All eight sites would be located entirely on federal land managed by the BLM. Access to the sites would be primarily from existing paved and unimproved roads; however, ROWs are needed at six sites for new access roads or improvements to existing dirt roads, totaling approximately 1.47 acres. The total permanent ROW for the Proposed Action is approximately 3.97 acres including the sites and access roads. Maps and site photographs are provided in Attachment 1.

B. Purpose and Need

1. Purpose of the Proposed Action

The BLM's purpose in considering approval of the application for the ROW is to provide legitimate use of the public lands to the proponent. Legitimate uses are those that are authorized under the Federal Land Policy and Management Act (FLPMA) of 1976 (or other

Public Land Acts) and meet the proponent's objective while preventing undue and unnecessary degradation.

SNWA's objective is to construct piezometers and associated appurtenances in accordance with the 2006 Spring Valley Stipulated Agreement (Stipulated Agreement) between SNWA and the U.S. Department of Interior agencies to collect data needed to determine the variability of groundwater levels near ground surfaces and surface flow that correlate to spring discharges in Spring Valley.

The piezometers and associated appurtenances are needed to conduct long-term hydraulic monitoring in accordance with the Stipulated Agreement. As part of the Stipulated Agreement, SNWA agreed to collect data that would be used to determine the variability of groundwater levels near ground surfaces and surface flow that correlate to spring discharges in Spring Valley. The Technical Review Panel (TRP), a technical group of scientific representatives of the parties of the stipulation, which includes the Bureau of Land Management (BLM), selected the locations for the piezometers and associated appurtenances. The piezometers and associated appurtenances which would allow collection of data necessary to better understand groundwater levels near ground surface and surface flow of spring discharges. The data obtained would also be available to assist Federal, state, and local agencies in their current and future decision making in groundwater modeling analyses and impact assessments. The Nevada State Engineer has accepted the monitoring plan proposed by DOI and SNWA

The BLM needs to consider approval of the application for the ROW to respond to its mandate under the FLPMA to manage the public lands for multiple use in a manner which recognizes the Nation's need for utility infrastructure. Title V of the FLPMA states:

The Secretary, with respect to public lands and, the Secretary of Agriculture, with respect to lands within the National Forest System, are authorized to grant, issue, or renew right-of-way over, upon, under, or through such lands for – (7) such other necessary transportation of other systems or facilities which are in the public interest and which require rights-of-way over, upon, under, or through such lands.

In addition, the BLM agreed in Section "D" (page 3) of the Stipulated Agreement "to expedite NEPA...to help meet the monitoring requirement of this Plan."

C. Relationship to Planning

The issuance of a ROW for the Proposed Action is in conformance with the following plan:

- Ely District Record of Decision and Approved Resource Management Plan (RMP) (August, 2008), states the following:

Land use authorizations (rights-of-way, permits, leases, easements, and unauthorized use) would be issued on a case-by-case basis.

The issuance of a ROW for the Proposed Action is consistent with the terms, conditions, and decisions of the following documents:

- White Pine County Public Land Use Plan (May, 1998), identifies the following water policy:

White Pine recognized that the protection and development of its water resources are essential to its short and long term economic and cultural viability.

White Pine County shall develop its water use policy to ensure both water quantity and water quality.

- White Pine County Water Resources Plan (August, 2006), states:

All water resource development and use in White Pine County should be conducted in a manner that is technically, environmentally, and economically sound, and consistent with state and federal laws.

D. Issues

The BLM Ely District Office National Environmental Policy Act Review Interdisciplinary Team reviewed the Proposed Action. Other than the potentially affected resources analyzed below, no additional specific issues were identified.

II. DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVE(S)

A. Proposed Action

The BLM proposes to issue SNWA a ROW grant for the purpose of installing seven piezometers, eight staff gages, one permanent flume, one V-notch weir with hydrologic measuring equipment inside a stilling well, and one discharge gage within six 0.25-acre and two 0.50-acre site locations in Spring Valley. In accordance with the Stipulated Agreement, SNWA is installing piezometers and spring discharge measurement equipment at agreed-upon locations in Spring Valley. The Biological Working Group and TRP selected 13 spring sites for installation of piezometers and/or spring discharge measurement equipment. The sites were selected based upon spring health, location, habitat and species associated with the sites, and the ability to use existing access roads. Of the 13 sites, eight are located on federal land managed by the BLM and are described in this document. For six of the BLM sites, the permanent ROW would be approximately 103 feet wide by 106 feet long. For the remaining two BLM sites, the permanent ROW would be approximately 69 feet wide by 315 feet long.

Piezometers would be installed at seven spring sites to collect groundwater level data and monitor the shallow groundwater levels: Blind Spring, The Seep, Layton Spring, 4WD Spring, W Spring Valley Complex 1, South Millick Spring, and Willow Spring. Each piezometer would be installed with a pressure transducer connected to an above ground data logger. The transducers would be powered by a battery that would be recharged by a solar panel. The batteries and data logger would be housed in the protective casing that would surround the entire well head. The solar panel would be installed flush to the steel casing. Each piezometer would be drilled to a depth of approximately 20 feet below the first groundwater encountered if the groundwater is encountered within 50 feet of the ground surface. If groundwater is not encountered within 50 feet of the ground surface, the borehole would be properly plugged, according to Nevada Administrative Code (NAC) 534.183 and NAC 534.4371 requirements, and a piezometer would not be installed. The drilling methods used would allow for optimal monitoring of the variability of groundwater levels that correlate to spring discharges. These piezometers are specifically for monitoring purposes. Any use of these piezometers other than for monitoring would require separate authorization from the BLM.

Staff gages would be installed at all eight of the spring sites in the open pool area of each spring. The staff gage would allow SNWA to correlate the discharge to the pool elevation and the piezometer and weir readings.

SNWA would install a permanent flume at Willow Spring. The flume at Willow Spring would be installed in the swale downstream of the spring. The flume would allow SNWA to gather both static water level and actual discharge. This monitoring data would aid in determining if there is a correlation between the water table level and the stream discharge.

A V-notch weir is proposed at Rock Spring. The weir would be installed between the spring orifice and the pond. It would be accompanied by hydrologic measuring equipment to record continuous data. The hydrologic measuring equipment would include either a gas purge system or a float tape, a steel gage house, a protective casing, a data logger, a battery powered by a solar panel, and a conduit running from the gage house to the water body. The gas purge system or a float tape would be housed inside the steel gage house. The steel gage house would be a steel pipe up to 18 inches in diameter and approximately four feet tall. It would be located most likely within five feet of the spring, but up to ten feet away depending on conditions encountered during construction. On top of the gage house would be a protective housing to store the data logger and battery for the solar panel. The protective house would be a box up to two feet by two feet by two feet in size. The solar panel would be installed on top of the protective house and would stand approximately one foot tall. Therefore, the entire unit would be up to seven feet tall. The outside of the equipment would be painted a tan or gray color to blend in with the surrounding environment. Attached to the steel gage house, at ground level, would be a two inch diameter conduit. The conduit would be buried below ground, unless unsuitable subsurface conditions are encountered, and would be run to the spring. The conduit would house an orifice line needed to measure hydrologic conditions. There currently is an existing pipeline present at Rock Spring. SNWA may obtain volumetric measurements from this pipeline if technically feasible and if there is enough flow during regular site visits. Otherwise, the Proposed Action would not disturb the existing pipeline.

Layton Spring currently discharges through a 1.5-inch diameter pipe into a water trough for cattle. In order to monitor discharges from the spring, a discharge gage would be installed at Layton Spring at the discharge pipe and watering trough. The existing trough would be

removed and replaced by a new metal watering trough fabricated by SNWA. Wildlife and livestock would be able to access the new water trough. A bird ladder would be obtained from the BLM and installed by SNWA along with the new water trough. The trough at Layton Spring is part of the Bastian Creek grazing allotment. A letter of concurrence from the grazing allotment owner authorizing the work would be obtained and placed in the BLM case file prior to the initiation of activities at the site.

The ROW dimensions for the sites at Blind Spring, The Seep, Layton Spring, 4WD Spring, W Spring Valley Complex 1, and South Millick Spring would be approximately 103 feet wide by 106 feet long, or approximately 0.25 acre each. The ROW dimensions for sites at Rock Spring and Willow Spring would be approximately 69 feet wide by 315 feet long, or approximately 0.5 acre each.

Access to the sites would be from existing paved and unimproved roads, as well as new access roads and improvements to existing dirt roads (See maps in Figures 2 through 17). A front-end loader/backhoe would be used to construct new access roads and improve existing dirt roads. If an existing road requires repairs or stabilization, any activities would be confined to the existing road boundaries. Stabilization, if needed, could include use of gravel, dirt, or straw fill of ruts or unstable surfaces. Any organic materials used would be certified weed-free. Grading of existing roads is not anticipated to be necessary, but if needed in localized areas would be confined to the existing road area.

Blind Spring: Blind Spring is located near an unimproved dirt road; however a new access road, approximately 70-foot long and 10-foot wide or 0.02 acre, is needed to access the proposed piezometer site from the dirt road.

The Seep: The Seep requires a new access road, approximately 2,260-foot long and 10-foot wide or 0.52 acre, to access the proposed piezometer site from an existing unimproved road.

Layton Spring: Layton Spring is located near an existing unimproved dirt road that leads toward the site from an existing transmission line maintenance road. The dirt road requires improvements to allow the drill rig to safely access the site. For this reason, a ROW is requested over the existing dirt road for improvements. The ROW would be approximately 3,050-foot long and 10-foot wide or 0.70 acre.

4WD Spring: 4WD Spring is located immediately adjacent to an existing unimproved road. Additional access roads are not needed for this site.

Rock Spring: Rock Spring is located immediately adjacent to an existing unimproved road. Additional access roads are not needed for this site.

W Spring Valley Complex 1: W Spring Valley Complex 1 is located near State Highway 893 and an unimproved road. A new access road from the unimproved road just off of the highway is required and would be approximately 190-foot long and 10-foot wide or 0.05 acre.

South Millick Spring: South Millick Spring is located near an existing unimproved road. This dirt road would require improvements to allow the drill rig to safely access the site. For this reason, a ROW is requested over the existing dirt road for improvements. The ROW would be approximately 320-foot long and 10-foot wide or 0.08 acre.

Willow Spring: Willow Spring is located near an existing unimproved road. This site requires a new access road from the existing unimproved road that would be approximately 440-foot long and 10-foot wide or 0.10 acre.

The total ROW area requested for road improvements or new roads is approximately 1.47 acres. Proposed Action components and approximate disturbance area per site are summarized in Table 1.

Table 1. Proposed Action Components and Approximate Disturbance Area per Site (Sites and Access Roads)

Spring	Disturbance Area (Approximate Acreage)	Piezometer	Staff Gage	Permanent Flume	V-notch Weir with Hydrologic Measuring Equipment	Discharge Gage	Access Road
Blind Spring	0.27	X	X	--	--	--	X
The Seep	0.77	X	X	--	--	--	X
Layton Spring	0.95	X	X	--	--	X	X
4WD Spring	0.25	X	X	--	--	--	--
Rock Spring	0.50	--	X	--	X	--	--
W Spring Valley Complex 1	0.30	X	X	--	--	--	X
South Millick Spring	0.33	X	X	--	--	--	X
Willow Spring	0.60	X	X	X	--	--	X
TOTAL ACREAGE	3.97						

1. Piezometers and Associated Appurtenances Installation

Prior to the installation of the piezometers and associated appurtenances, the boundaries of each site would be staked. No ground disturbance would occur outside of the designated ROW. Existing vegetation within the Proposed Action sites would be crushed in order to preserve the native seed bank and reduce potential erosion.

The installation date of the Proposed Action is dependant on completion of the ROW grant, but it is anticipated that it would begin in the third or fourth quarter of 2009. Each site would require approximately three days for installation and calibration of the equipment depending on weather conditions, equipment malfunction or other unforeseen events. Equipment used to construct the piezometers, associated appurtenances, and access roads would include a self-contained truck-mounted drilling rig, flat bed trailer for bringing pipe, water tank and well casing material to the site, pick-up trucks, a mechanical trencher, and a front-end loader/backhoe. A small construction trailer and portable restroom would also temporarily be located on-site during drilling and removed after construction.

A SNWA hydrologist, or contractor, would be present daily during installation of equipment to ensure compliance with ROW grant conditions.

a. Piezometers

The springs with proposed piezometers discharge from the alluvium and drilling would be accomplished with a hollow stem auger to a depth of approximately 20 feet below the first groundwater encountered as long as groundwater is encountered within 50 feet of the ground surface. The boreholes would be advanced using the hollow stem auger method to accommodate a 4-inch nominal inside diameter and schedule 40 mild steel casing with flush

threaded joints. The piezometers would be installed per Nevada Division of Water Resources regulations outlined in NAC 534. After installation of the casing, the upper portion of the borehole annulus would be grouted to prevent surface infiltration and to eliminate potential unwanted discharge of the spring from the formation around the well casing. Approximately the lower 15 feet of the completion string would be perforated to allow groundwater into the casing and prevent soils from entering. This lower portion of the completion string would be perforated polyvinyl chloride casing containing small machine cut slots approximately 0.02 inch in size. At the surface, a surface well enclosure up to 12-inches in diameter would be installed around the piezometer and placed on a 3-foot by 3-foot concrete pad. The completed piezometers and equipment would be painted a tan or gray color to blend in with the surrounding vegetation and overall environment color and form.

During the installation of the piezometers, soil samples may be collected using a split spoon sample method at 5-foot intervals. Depth to first groundwater encountered and static water level would be noted. The contractor would be responsible for all records and samples that are collected at the site. A SNWA representative would be onsite to collect lithologic data during drilling. Additionally, piezometers may be developed using a submersible pump to remove influences of drilling and obtain a groundwater chemistry sample. The piezometers would be pumped for less than six hours at a discharge rate below 30 gallons per minute. The discharge from the development process would be pumped directly into a water tank and transported to private property and released.

If groundwater is not encountered within 50 feet of the ground surface, the borehole would be properly plugged, according to NAC 534.183 and NAC 534.4371 requirements, and the piezometer would not be installed.

b. Staff Gages

Staff gages would be installed by driving a steel angle iron approximately 30 inches deep into the bottom of the spring pool. Material would be excavated to approximately 12 inches deep and 18 inches across. A 5-gallon bucket with the bottom removed would be placed over the angle iron and pushed down to create a sealed area around the post. Fast setting concrete would be poured around the angle iron. After the concrete dries the bucket would be removed. The material excavated would be placed over the concrete around the base of the post. A graduated metal staff plate would be mounted to a piece of wood approximately 2-inch by 6-inch and then attached to the angle iron post. At the surface, the completed staff plate and post would stand about 3 feet above the ground, be a tan or gray color to blend in with the surrounding environment. There would be no other appurtenances attached to the staff gages and no equipment would be left on-site.

c. Permanent Flume

Installation of the permanent flume would require digging a trench 12 inches deep and 10 inches wide perpendicular to the channel for a total length of approximately 20 feet. Soil from the trench would be used to build a temporary dike upstream of the site. A sump pump would pump the water around the site. Two rows of plywood 18-inches tall would be set 6 inches apart in the trench to create the concrete forms. Concrete and rebar would be placed between the plywood forms. A flume would be concreted into the center of the structure. After the concrete dries, the plywood would be removed along with the temporary dike upstream of the site. Excess soil from the trench would be spread in the surrounding upland area. At the surface, the completed permanent flumes would be approximately 2 feet long by 1 foot high by 1 foot wide. The flumes would be concreted into place with cutoff walls extending from the flume on both sides across the flow path. The cutoff walls would stick out of the ground approximately 6 to 8 inches. The cutoff walls could be either concrete or steel plates. Flow would be measured using a transducer connected to a data logger that would be housed in a 2 foot by 2 foot by 2 foot protective steel casing. The transducer would be powered by a battery that would be recharged by a solar panel. The battery would be housed in the protective casing. The completed permanent flume would be a tan or gray color to blend in with the surrounding environment. There would be no other appurtenances attached to the permanent flume and no equipment would be left on-site.

d. V-notch Weir and Hydrologic Measuring Equipment

Installation of the V-notch weir would require water from Rock Spring to be rerouted from above the weir installation site to just below the site, where it would rejoin the natural channel. A temporary dike made from native material, sandbags, tarps or a combination of these would be used to redirect and retain the water. The water would be conveyed by gravity through a pipe, diversion ditch or a combination of the two. The dike would remain in place for approximately three days during construction, but the exact time frame would be dependent on weather conditions, equipment malfunction or other unforeseen events. Based on previous measurements by SNWA of the existing discharge flowing from the springbrook to the spring, no issues with rerouting the flow are anticipated.

While the water is being rerouted around the natural channel, a trench (approximately 2 feet deep, 1 foot wide, and 12 feet long) would be dug for the V-notch weir. The final dimensions of the trench would be dependent upon the presence of bed rock. The trench would be excavated using a mechanical trencher/backhoe, hand construction or a combination of the two. Concrete forms would be placed in the trench to form the weir wing walls. Materials such as steel rebar or another suitable material would be used to reinforce the concrete wall. After the concrete has properly cured the forms would be removed and the remaining space in the trench would be back filled with native material. A V-notch weir would be attached to the center of the wing walls.

The stilling well and conduit necessary for the hydrologic measuring equipment would be installed using hand tools. To install the stilling well, a hole would be dug up off the spring bank and the steel pipe would be placed in the hole. It would then be backfilled with concrete and covered with native soil after the concrete has set. The gas purge system or a float tape, protective casing, datalogger, and solar panel would be attached by hand to the steel pipe after

the concrete has set. A small trench would be dug from the stilling well to the spring and the conduit placed in the trench. The trench would then be back filled with native material.

e. Discharge Gage

The existing watering trough at Layton Spring would be removed and the new fabricated watering trough would be set into place. The new trough would be fabricated off site and made to the same outside measurements as the existing trough to minimize the amount of disturbance during installation at the site. A bird ladder would be installed in the new water trough.

At the surface, the completed discharge gage would include a 1 foot by 1 foot by 1 foot metal box that would be placed directly under the discharge pipe. This box would have an orifice and a notch at one end and would be fitted with a stilling well and water level recorder and a hinged lid that can be locked. Water would flow out of the orifice and the water level recorder would log the depth of the water in the box. In the event that the orifice gets plugged up, water would flow into the watering trough through the notch at the top of the box. There would be no other appurtenances attached to the discharge gage, and no equipment would be left on-site.

The completion date of the Proposed Action construction activities is dependant on completion of the ROW grant and the start date of the Proposed Action, but it is anticipated to be complete by the first quarter of 2010.

2. Monitoring

Each piezometer would be equipped with a pressure transducer which would monitor continuous (every hour on the hour) changes in water head levels. The transducers would log changes in hydrostatic pressure in response to water level changes as well as record the water temperature. The data would be downloaded from the transducers approximately every 6 to 8 weeks. Staff gages would be checked visually at the time of collecting data from the piezometers to compare water levels between the spring and the piezometer.

The permanent flume would be equipped with a pressure transducer which would monitor continuous (every hour on the hour) changes in water head levels. The transducer would log changes in hydrostatic pressure in response to water level changes through the flumes. The data would be downloaded from the transducer approximately every 6 to 8 weeks.

The permanent V-notch weir would be equipped with monitoring equipment connected to a data logger to continuously monitor changes in water height upstream of the weir. The equipment would log water level changes in the channel pool upstream of the weir structure. The data would then be stored onto a data logger and downloaded approximately every 6 to 8 weeks.

The discharge gage at Layton Spring would be equipped with a water level recorder and data logger. The data would be downloaded from the data logger approximately every 6 to 8 weeks.

3. Data Collection

Data collected would be compiled and reported as required in accordance with the Stipulated Agreement and the Nevada State Engineer's approved monitoring plan.

4. Rights-of-Way Termination

A ROW grant is requested at these eight sites for a 30-year permanent term. Upon termination of the ROW grant, if the sites are desired for continued data collection, SNWA would request a

ROW extension. If not desired for continued data collection, the piezometers, staff gages, permanent flume, V-notch weir and hydrologic measuring equipment, and discharge gage would be removed, rehabilitation of the new access roads would be determined, and the ROW would be terminated in accordance with BLM requirements.

5. Environmental Protection Measures

Environmental protection measures would be implemented during installation activities, as summarized below.

Fire- Fire suppression equipment, including extinguishers and shovels, would be available on-site during drilling activities.

Garbage- The Proposed Action sites would be kept free from any accumulation of litter including but not limited to trash, garbage, refuse, ashes and equipment during construction and left in a clean and safe condition. Litter would be placed in storage containers on-site and properly disposed of at an authorized off-site disposal location.

Migratory Birds- No construction activity would occur at the Proposed Action site during critical nesting periods unless a biological survey is conducted to determine if migratory bird breeding or nesting is occurring. These surveys would be conducted by the Ely BLM Field Office wildlife team, or an assigned authorized biologist, no more than one week prior to site disturbance. The BLM wildlife team would be notified a minimum of 30 days prior to construction in order for the required survey to be conducted. Authorization for construction during this breeding period would be contingent on the findings of the survey and guidance from the BLM.

Non-native Invasive Species and Noxious Weeds- To eliminate the transport of vehicle-born weed seeds, roots, or rhizomes, all vehicles and heavy equipment used for the completion, maintenance, inspection or monitoring of ground disturbing activities would be free of soil and debris capable of transporting weed propagules. All such equipment and vehicles would be cleaned with power or high pressure equipment prior to entering or leaving the work site or project area. Cleaning efforts would concentrate on tracks, feet and tires, and the undercarriage. Special emphasis would be applied to axles, frames, cross members, motor mounts, on and underneath steps, running boards, and front bumper/bush guard assemblies. Vehicle cabs would be swept out and refuse would be deposited in waste receptacles. Cleaning sites would be recorded using global positioning systems or other mutually acceptable equipment and provided to the Ely District Noxious and Invasive Weeds Coordinator or designated contact person. The Proposed Action sites would be monitored for the duration of the ROW for noxious and invasive weeds. If any populations of noxious weeds are observed, the Ely District Noxious and Invasive Weeds Coordinator would be notified and SNWA would treat infestations accordingly.

Soils- During construction activities, efforts would be used to minimize the potential for creating excessive soil ruts including selection of a construction timing to avoid the seasonal wettest period(s) and use of weight-dispersing materials to limit excessive tracking.

Special Status Species- If the Proposed Action construction activities would occur in springs known to have northern leopard frog, including W Spring Valley Complex 1 and South Millick springs, during the breeding period, a biologist would be present to ensure avoidance of frogs and frog egg masses. If Proposed Action construction activities at The Seep would occur

between March 1 and May 15, the Ely BLM District Office wildlife team or an authorized biologist would conduct surveys no more than one week prior to the disturbance to identify any sage grouse in the area. Authorization for construction during this period would be contingent on the findings of the surveys and guidance from the BLM.

Vegetation- Each Proposed Action site would be staked and flagged and no ground disturbance would occur outside of the designated site. Existing vegetation within the Proposed Action site would be crushed to preserve the native seed bank and reduce potential erosion. Ground disturbance at each site would be kept to a minimum.

Wastes (Hazardous/Solids)- Hazardous and toxic materials such as fuels, solvents, and lubricants used during drilling would be controlled to prevent accidental spills. Spill cleanup kits would be available on-site, so that any accidental spills could be quickly cleaned up. Any soils or sediments affected by accidental spills would be dug up and properly disposed of at a permitted disposal facility. SNWA would be responsible for clean-up and assumes liability for any and all releases made by SNWA, its contractors, agents or employees of hazardous substances associated with the Proposed Action. SNWA would immediately notify the BLM Authorized Officer and the National Response Center at 775-687-9485 or 888-331-6337 (Nevada Division of Environmental Protection) on all spills/releases in which the reportable quantity for the particular compound is exceeded [40 Code of Federal Regulations (CFR) Part 302]. A Spill Prevention, Control, and Countermeasure Plan and a Spill Control Plan would be developed by the construction contractor and kept on site in their vehicles prior to commencing work. The plans would identify where hazardous materials and wastes are stored on site, spill prevention measures to be implemented, training requirements, appropriate spill response actions, the locations of spill response kits on site, and procedures for making timely notifications to authorities. The construction contractor would also develop and keep on site a Hazardous Materials Management Plan addressing storage, use, transportation, and disposal of hazardous materials anticipated to be used at the site. It would establish inspection procedures, storage requirements, storage quantity limits, inventory control, nonhazardous product substitutes, and disposition of excess materials. The plan would also identify requirements for notices to federal and local emergency response authorities and include emergency response plans. The contractor would maintain Material Safety Data Sheets for all hazardous materials that would be used, stored, or transported at the Proposed Action sites. All hazardous materials would be handled in accordance with manufacturer's written recommendations and by methods and means that would prevent damage, deterioration, and loss. The contractor would maintain a sanitary site with no dumping of sewage or litter. SNWA contracted services would periodically pump port-a-potties and haul offsite for disposal.

Wildlife: The new water trough constructed by SNWA at Layton Spring would include the installation of a bird ladder.

B. No Action Alternative

Under the No Action Alternative, the ROW would not be issued, the Proposed Action would not occur, and the requirements of the Stipulated Agreement would not be met. Without this long-term hydrologic monitoring data, there would be limited information to assess the springs' response to groundwater withdrawals and assist Federal, state, and local agencies in their current and future decision making in groundwater modeling analyses and impact assessments.

C. Other Alternatives Considered but Eliminated from Further Analysis

The Stipulated Agreement identified a list of 36 springs from which the TRP was to select at least 12. The TRP selected 13 springs which show the best potential for gathering useful scientific data. Of these, eight of the springs are on federal land managed by the BLM and have been selected and approved by the TRP as identified in the Proposed Action. The remaining five are located on private land. The other 23 springs from the Stipulated Agreement list were not selected because their data potential was not as great as the selected sites.

III. AFFECTED ENVIRONMENT

The area affected by the Proposed Action is located in Spring Valley in White Pine County, Nevada. It is bound by the Schell Creek Range on the west and by the Snake Range on the east. The topography in the area is typical of that found in the Basin and Range physiographic province of the western United States.

A. Mandatory Items for Consideration

The following items have been evaluated for the potential for significant impacts to occur, either directly, indirectly or cumulatively, due to implementation of the Proposed Action. Consideration of some of these items is required to ensure compliance with laws, statues or Executive Orders that impose certain requirements upon all Federal actions. Other items are relevant to the management of public lands in general, and to the Ely BLM in particular.

The mandatory items for consideration are listed in Table 2. A brief rationale for either considering or not considering the issue or resource is also provided. The resources, uses, and issues considered in this Environmental Assessment (EA) are described in the Potentially Affected Resources section and are analyzed in the Environmental Consequences section of this EA. Rationales for those issues that would be dismissed from analysis are also listed in Table 2. These issues would not be considered further in this document.

Table 2. Mandatory Items for Consideration and Rationale for Detailed Analysis for the Proposed Action

Resource / Concern	Issue(s) Analyzed (Yes/No)	Rationale for Dismissal from Analysis or Issue(s) Requiring Detailed Analysis
Access	No	There are no access routes that would be blocked by the Proposed Action activities.
Air Quality	No	The Proposed Action would have no impacts on air quality for the area. The area is currently in attainment for all local, state, and Federal air quality standards.
Area of Critical Environmental Concern (ACEC)	Yes	Analyzed in Potentially Affected Resources and Environmental Consequences sections.
Cultural Resources	Yes	Analyzed in Potentially Affected Resources and Environmental Consequences sections.
Environmental Justice	No	No minority or low-income groups would be affected by disproportionately high and adverse health or environmental effects.
Farmlands (Prime or Unique)	No	There are no prime or unique farmlands near the Proposed Action area.

Table 2. Mandatory Items for Consideration and Rational for Detailed Analysis for the Proposed Action (continued)

Resource / Concern	Issue(s) Analyzed (Yes/No)	Rationale for Dismissal from Analysis or Issue(s) Requiring Detailed Analysis
Floodplains	No	The Federal Emergency Management Agency’s Flood Insurance Rate Maps for White Pine County, Nevada (Unincorporated Areas) Panels 320022 2175A, 2025A, 1850A, 1650A, 1425A, and 0750A were reviewed. The Proposed Action sites are within Zone D, or “Areas of undetermined, but possible, flood hazards”. While flood hazards are possible, due to the small size and placement of the piezometers and associated appurtenances, the Proposed Action would have no effect on a large flood event if it should happen in the area.
Forest and Rangeland Health	No	The Proposed Action would have no impact on rangeland health based on an evaluation of the five Standards for Rangeland health namely (1) Watershed Function – Uplands, (2) Watershed Function – Riparian/Wetlands Areas, (3) Ecological Process, (4) Water Quality, and (5) Native, Threatened and Endangered, and Locally Important Species.
Geology and Minerals	Yes	Analyzed in Potentially Affected Resources and Environmental Consequences sections.
Land Use	Yes	Analyzed in Potentially Affected Resources and Environmental Consequences sections.
Migratory Birds	Yes	Analyzed in Potentially Affected Resources and Environmental Consequences sections.
Native American Concerns	Yes	Analyzed in Potentially Affected Resources and Environmental Consequences sections.
Non-native, Invasive Species and Noxious Weeds	Yes	Analyzed in Potentially Affected Resources and Environmental Consequences sections.
Paleontological Resources	No	A review of geologic data identified all Proposed Action sites to be located within Quaternary alluvial deposits (Hose et al., 1976). Typically, fossils are not discovered in Quaternary alluvial deposits, unless there are caves or fissures which have a potential to contain wood/pack rat (<i>Neotoma</i> sp.) middens [i.e., concentrations of bone and fecal waste from wood rats (Betancourt et al., 1990)]. No cave sites have been documented within any of the Proposed Action sites. Therefore, there would be no effects to paleontological resources as a result of the Proposed Action.
Public Services and Utilities	No	N-05253, N-05626, N-05638, N-41042, N-05685, and N-05685 are authorized overhead power lines and N-04748 is an authorized highway. None of these projects would be disturbed or blocked.

Table 2. Mandatory Items for Consideration and Rationale for Detailed Analysis for the Proposed Action (continued)

Resource / Concern	Issue(s) Analyzed (Yes/No)	Rationale for Dismissal from Analysis or Issue(s) Requiring Detailed Analysis
Range/ Livestock	Yes	Analyzed in Potentially Affected Resources and Environmental Consequences sections.
Recreation	Yes	Analyzed in Potentially Affected Resources and Environmental Consequences sections.
Soils	Yes	Analyzed in Potentially Affected Resources and Environmental Consequences sections.
Special Status Species (Federally Listed, Proposed and Candidate Species; State Protected Species; and BLM Sensitive Species)	Yes	Analyzed in Potentially Affected Resources and Environmental Consequences sections.
Vegetation (Including Wetlands/ Riparian)	Yes	Analyzed in Potentially Affected Resources and Environmental Consequences sections.
Vegetative Resources (Forest or Seed Products)	No	There are no forest or seed products in the Proposed Action area.
Visual Resource Management	Yes	Analyzed in Potentially Affected Resources and Environmental Consequences sections
Wastes (Hazardous or Solid)	No	Visual inspections of the Proposed Action sites were conducted by SNWA personnel in fall of 2007 and no hazardous or solid wastes were observed and no known hazardous or solid wastes are known to occur within the vicinity of the sites.
Water Resources (Water Rights)	Yes	Analyzed in Potentially Affected Resources and Environmental Consequences sections.
Water Quality (Drinking and Ground)	No	Public water supply intakes do not occur at the Proposed Action sites. The piezometers and associated appurtenances would be constructed with materials free of potential pollutants and any hazardous materials would be controlled and accidental spills contained. Although soil would temporarily be disturbed during construction, the springs would quickly return to their original condition and the Proposed Action would not cause permanent erosion. A Clean Water Act 401 permit would be obtained for all work in the springs. The piezometers would be drilled using standard practices to protect groundwater resources. Discharged groundwater would be pumped directly into a water tank and transported to private property and released so no impacts to surface waters or drainages would occur.

Table 2. Mandatory Items for Consideration and Rational for Detailed Analysis for the Proposed Action (continued)

Resource / Concern	Issue(s) Analyzed (Yes/No)	Rationale for Dismissal from Analysis or Issue(s) Requiring Detailed Analysis
Wild Horses and Burros	No	No wild horses or burros were noted during biological surveys of the Proposed Action sites. Domestic horse (<i>Equus caballus</i>) sign was observed at Willow Spring. However, the closest wild horse herd management area is Antelope, located approximately 2.5 miles north of the Willow Spring site.
Wild and Scenic Rivers	No	There are no federally designated Wild and Scenic Rivers in the Proposed Action area.
Wilderness	No	The Proposed Action does not encompass any designated or proposed wilderness area. The nearest designated wilderness areas are South Schell Creek (U.S. Forest Service) approximately 2.0 miles west of Proposed Action site W Spring Valley Complex 1 and Highland Ridge (Bureau of Land Management) approximately 2.7 miles east of Proposed Action site Blind Spring.
Wildlife	Yes	Analyzed in Potentially Affected Resources and Environmental Consequences sections.

B. Potentially Affected Resources

From initial scoping with the BLM Interdisciplinary Team and based on BLM’s review of existing baseline data or surveys conducted in preparation of this EA, the following resources may potentially be affected:

1. Area of Critical Environmental Concern (ACEC)

BLM regulations (Title 43 CFR Subpart 1610) define an ACEC as an area “within the public lands where special management attention is required (when such areas are developed or used or where no development is required) to protect and prevent irreparable damage to important historic, cultural, or scenic values, fish and wildlife resources, or other natural systems or processes, or to protect life and safety from natural hazards.” Blind Spring is located within the Baking Powder Flat ACEC. The Baking Powder Flat blue butterfly (*Euphilotes bernardino minuta*) (Nevada endemic and BLM Sensitive Species) is found within the Baking Powder Flat ACEC. The butterfly’s host plant, Shockley buckwheat (*Eriogonum shockleyi* vars. *shockleyi*), is a common, mound-forming plant often found on fine-textured substrates and is the predominant plant in the valley bottomland. Baking Powder Flat is the largest contiguous habitat for the Baking Powder Flat blue butterfly.

The Baking Powder Flat ACEC was formed to protect the Baking Powder Flat blue butterfly. According to the Ely RMP, the Baking Powder Flat ACEC is managed as an:

“Avoidance area; granting rights-of-way (surface, subsurface, aerial) within the area will be avoided, but rights-of-way may be granted if there is minimal conflict with identified resource values and impacts can be mitigated.”

The Proposed Action site within the ACEC consists of approximately 0.27 acre, which includes an access road, piezometer, and staff gage. The dominant vegetation in the spring is cat tail (*Typha sp.*) and the dominant vegetation outside the spring is black greasewood (*Sarcobatus vermiculatus*), basin big sagebrush (*Artemisia tridentata ssp. tridentata*), rubber rabbitbrush (*Ericameria nauseosa*), and shadscale saltbush (*Atriplex confertifolia*). The site is heavily impacted by livestock. The butterfly's host plant, Shockley buckwheat, and potential habitat for the host plant are not found within the Proposed Action site. The nearest potential habitat for the host plant is approximately 0.5 mile from the Proposed Action site.

No other Proposed Action sites are located within any designated ACECs.

2. Cultural Resources

Cultural resource survey of the eight proposed sites and new access roads was conducted between April 7 and 9, 2008. The work was performed by Parsons Water Infrastructure Inc. (Parsons) under BLM Cultural Resource Use Permit Number N-83690. The purpose of the investigations was to identify and document archaeological resources within the Area of Potential Effect and to evaluate those resources with regard to their eligibility for the National Register of Historic Places (NRHP) in accordance with Section 106 of the National Historic Preservation Act.

To ensure that no important archaeological resources were located within or adjacent to the piezometers and associated appurtenances locations, an approximate additional 65-foot buffer was surveyed around each proposed site and an approximate additional 65-foot buffer was surveyed along each side of the proposed access roads. A total of approximately 23.5 acres were surveyed for cultural resources for the Proposed Action. All known National Register of Historic Places eligible sites will be avoided.

3. Geology and Minerals

The geology of Blind Spring is composed of playa and lacustrine sediments derived from nearby Paleozoic sediments including limestones, dolomites, and quartzites. The Seep is composed of alluvial and lacustrine sediments derived from nearby Paleozoic sediments including limestones, dolomites, and quartzites. Layton Spring geology is described as containing alluvial and lacustrine sediments derived from nearby Paleozoic sediments including limestones, dolomites, and quartzites. The geology of 4WD Spring is composed of alluvium derived from nearby Paleozoic sediments including limestones, dolomites, and quartzites. Rock Spring is composed of Cambrian limestone. W Spring Valley Complex 1 geology is described as alluvial and lacustrine sediments derived from nearby Paleozoic sediments including limestones, dolomites, and quartzites. The geology of South Millick is composed of alluvial and lacustrine sediments derived from nearby Paleozoic sediments including limestones, dolomites, and quartzites. The geology of Willow Spring is composed of alluvial and lacustrine sediments derived from nearby Tertiary volcanics, including rhyodacite, quartz latite, andesite, air-fall tuff, and welded tuff and Paleozoic sediments including limestones, dolomites, and quartzites.

To determine if mining claims exist within the Proposed Action area a Mining Claim Geographic Report was conducted on March 25, 2008 through BLM's database LR 2000 (<http://www.blm.gov/lr2000/>). This type of report displays all claims by a specific geographic area. The report showed that there is one active and two closed mining claims at the Layton

Spring site. The mining claim serial number is NMC822816 and it covers the entire portion of Township 14 North, Range 67 East, Section 9. The two closed mining claims are NMC119600 and NMC119601.

4. Land Use

To determine if any granted or pending ROWs utilize the federal land surrounding the Proposed Action area, a Case Recordation Geo report with Customer search was conducted on March 24 and 25, 2008 through BLM's database LR 2000. Additionally, BLM's Master Title Plats were reviewed to determine if any encumbrances were depicted on the maps.

Five ROW grants have been issued at or within the vicinity of the Proposed Action sites.

- N-55079: ROW issued to Nevada Department of Transportation on August 2, 1993 for a gravel pit. The Layton Spring access road would overlap with the gravel pit in Township 14 North, Range 67 East, Section 4 SWSE.
- N-81069: ROW issued to Spring Valley Wind LLC on January 17, 2006 for a wind energy facility.
- N-46822: ROW issued to SBC/NV Bell on October 13, 1987 for a 10 feet total width buried telephone/telegraph line ROW.
- N-83341: ROW issued to SNWA on September 12, 2007 for a hydrological/meteorological station in northern Spring Valley.
- N-83342: ROW issued to SNWA on September 12, 2007 for a hydrological/meteorological station in southern Spring Valley and Snake Valley.

Three pending ROW grants occur at or within the vicinity of the Proposed Action.

- N-36582: ROW pending application submitted by Teel, Dorothy F. on May 14, 1982 for a Desert Land Act and Commodity project.
- N-36582-01: Short-term ROW pending application submitted by Teel, Dorothy F. on May 14, 1982 for a Desert Land Act and Commodity project.
- N-78803: ROW pending application submitted by SNWA on July 15, 2004 for the proposed Clark, Lincoln, and White Pine Counties Groundwater Development (GWD) Project.

A single closed ROW grant, N-13629, for an oil and gas lease occurred within the vicinity of the Proposed Action. This ROW grant closed on June 2, 1986.

5. Migratory Birds of Conservation Concern

Under the Migratory Bird Treaty Act of 1918 and subsequent amendments (16 U.S.C. 703-711), it is unlawful to take, kill, or possess migratory birds. Executive Order 13186 issued January 11, 2001 further defines the responsibilities of federal agencies to protect migratory birds. The issuance of a ROW grant for the Proposed Action requires compliance with the Migratory Bird Treaty Act and avoidance of potential impacts to listed birds.

To prioritize migratory bird conservation actions, the BLM maintains the Bird Species of Conservation Concern List (U.S. Fish and Wildlife Service Migratory Bird Program Strategic Plan 2004-2014), (per BLM guidance). The list is used by the BLM to prioritize migratory bird

conservation actions. The species below are taken from the BLM's Bird Species of Conservation Concern List, and are expected to occur within Spring Valley. These species are generally associated with Great Basin sagebrush habitats, with some overlap into other habitats such as pinyon juniper, or riparian habitat.

Migratory Birds of Conservation Concern

American Avocet (AMAV) <i>Recurvirostra Americana</i>	Flammulated Owl (FLOW) <i>Otus flammeolus</i>
American Bittern (AMBI) <i>Botaurus lentiginosus</i>	Gilded Flicker (GIFL) <i>Colaptes chrysoides</i>
Bell's Vireo (BEVI) <i>Vireo bellii</i>	Golden Eagle (GOEA) <i>Aquila chrysaetos</i>
Black-chinned Sparrow (BCSP) <i>Spizella atrogularis</i>	Grace's Warbler (GRWA) <i>Dendroica graciae</i>
Brewer's Sparrow BRSP <i>Spizella breweri</i>	Grasshopper Sparrow (GRSP) <i>Ammodramus savannarum</i>
Burrowing Owl (BUOW) <i>Athene cunicularia</i>	Gray Vireo (GRVI) <i>Vireo vicinior</i>
Cactus Wren (CACW) <i>Campylorhynchus brunneicapillus</i>	Greater Sage-Grouse (GRSG) <i>Centrocercus urophasianus</i>
Caspian Tern (CATE) <i>Sterna caspia</i>	Hooded Oriole (HOOR) <i>Icterus cucullatus</i>
Common Yellowthroat (COYE) <i>Geothlypis trichas</i>	Horned Lark (HOLA) <i>Eremophila alpestris</i>
Crissal Thrasher (CRTH) <i>Toxostoma crissale</i>	Le Conte's Thrasher (LCTH) <i>Toxostoma lecontei</i>
Ferruginous Hawk (FEHA) <i>Buteo regalis</i>	Lewis's Woodpecker (LEWO) <i>Melanerpes lewis</i>

Migratory Birds of Conservation Concern (continued)

Loggerhead Shrike (LOSH) <i>Lanius ludovicianus</i>	Short-eared Owl (SEOW) <i>Asio flammeus</i>
Long-billed Curlew (LBCU) <i>Numenius americanus</i>	Snowy Plover (SNPL) <i>Charadrius alexandrinus</i>
Northern Goshawk (NOGO) <i>Accipiter</i>	Song Sparrow (SOSP) <i>Melospiza</i>

gentilis

Northern Harrier (NOHA) *Circus cyaneus*

Olive-sided Flycatcher (OSFL) *Contopus cooperi*

Peregrine Falcon (PEFA) *Falco peregrinus*

Pinyon Jay (PIJA) *Gymnorhinus cyanocephalus*

Prairie Falcon (PRFA) *Falco mexicanus*

Pygmy Nuthatch (PYNU) *Sitta pygmaea*

Red-naped Sapsucker (RNSA) *Sphyrapicus nuchalis*

Sage Sparrow (SAGS) *Amphispiza belli*

melodia

Spotted Towhee (SPTO) *Pipilo maculatus*

Vesper Sparrow (VESP) *Pooecetes gramineus*

Virginia's Warbler (VIWA) *Vermivora virginiae*

Willet (WILL) *Catoptrophorus semipalmatus*

Wilson's Phalarope (WIPH) *Phalaropus tricolor*

Yellow-billed Cuckoo (YBCU) *Coccyzus americanus*

Yellow Warbler (YWAR) *Dendroica petechia*

Species that are on the BLM list were carried forward for analysis of probability of occurrence, and to ensure that construction timing and mitigation measures sufficiently protect and preserve breeding of these species. A predictive model created by the Great Basin Bird Observatory (GBBO) was used to analyze probability of occurrence. The model predicts probability of occurrence based on latitude, vegetation type, and elevation. It should be noted that use of predictive models comes with a degree of uncertainty; because the model generalizes probability across the landscape, species that are generalists may be over-predicted, whereas species that have highly specific habitat requirements may be under-predicted.

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Application of the predictive model was accomplished in ArcMap (version 9.3), by overlaying Proposed Action site shapefiles with GBBO probability maps for each of the 43 species of conservation concern expected to occur. Effects analysis was carried out where the probability of sensitive bird occurrence was 50 percent or greater. Six species met the 50 percent criterion: horned lark, loggerhead shrike, northern harrier, pinyon jay, sage sparrow, and vesper sparrow.

The probability occurrence of the horned lark was greater than 50 percent at seven of the eight Proposed Action sites: Blind Spring, 4WD Spring, Layton Spring, Rock Spring, The Seep, South Millick Spring, and Willow Spring. The horned lark is considered widespread and common in Nevada. They favor low or widely scattered vegetation with interstices of bare ground. The earliest breeding date for horned lark was documented as April 26th, with signs of breeding continuing until August 2nd.

The probability occurrence of the loggerhead shrike was greater than 50 percent at three of the eight Proposed Action sites: Layton Spring, The Seep, and Willow Spring. Loggerhead shrike prefers arid open country with just a few perches or lookouts in desert shrublands, juniper and pinyon-juniper woodlands. The breeding period ranges from mid-April through early August.

The probability occurrence of the northern harrier was greater than 50 percent at one site, W Spring Valley Complex 1. The northern harrier is found in treeless expanses, but they are especially fond of marshes and agricultural areas. Highest densities are reached in lowland marshes. The earliest breeding date for the northern harrier was documented as April 26th with signs of active nests. Breeding extended into August with the last sign of fledged young documented August 2nd.

The probability occurrence of the pinyon jay was greater than 50 percent at three of the eight Proposed Action sites: Rock Spring, The Seep, and Willow Spring. Pinyon jay is most frequently reported in pinyon-juniper habitats at the foothills of mountain ranges. The species also forages in sagebrush shrublands. Pinyon jays have been documented breeding as early as April 19th and as late as August 30th.

The probability occurrence of the sage sparrow was greater than 50 percent at seven of the eight sites: 4WD Spring, Blind Spring, Layton Spring, Rock Spring, The Seep, South Millick Spring, and Willow Spring. The sage sparrow is usually associated with sage brush and frequently occurs in salt desert scrub. The breeding period ranges from early May, although nest building has been noted as early as April, to early August.

The probability occurrence of the vesper sparrow was more than 50 percent at four of the eight Proposed Action sites: Blind Spring, Layton Spring, The Seep, and Willow Spring. Vesper sparrow nests in various open shrub habitats [Wyoming sagebrush (*Artemisia tridentata wyomingensis*), mountain big sagebrush (*A. t. vaseyana*), and big sagebrush (*A. t. spiciformis*)] from 5,500 to 9,000 feet. Nests are generally placed on the ground in areas with a minimum of 20 percent native, perennial grass/forb cover. The breeding period ranges from mid-May through mid-August.

6. Native American Concerns

The Confederated Tribes of the Goshute Indian Tribe, Moapa Band of Paiutes, Ely Shoshone Tribe, and Duckwater Shoshone Tribe are located within the Ely BLM District. Native American resources located off the reservations and on land administered by the BLM are managed and protected by the BLM; however, no Indian trust assets have been identified on BLM-administered lands within the Ely District. The following Native American tribal groups were contacted by Elvis Wall, the BLM Ely District Office Native American Coordinator. The issues and concerns the tribes identified are listed below.

Confederated Tribes of the Goshute Indian Tribe (December 7, 2007): Concern about potential human remains discovered during the construction of the roads and piezometers and associated appurtenances.

Moapa Band of Paiutes, Tribal Chair Swain (January 10, 2008): No concerns expressed.

Ely Shoshone Tribe (January 14, 2008): No concerns expressed.

Duckwater Shoshone Tribe (February 20, 2008): No concerns expressed at this time.

7. Non-native, Invasive Species and Noxious Weeds

The BLM defines a weed as a non-native plant that disrupts or has the potential to disrupt or alter the natural ecosystem function, composition and diversity of the site it occupies. The presence of a weed deteriorates the health of the site, makes efficient use of natural resources difficult, and may interfere with management objectives for that site. A weed is an invasive species that requires a concerted effort (manpower and resources) to remove from its current location, if it can be removed at all. "Noxious" weeds refer to those plant species which have been legally designated as unwanted or undesirable. This includes national, state, county or local designations.

Botanical surveys of the Proposed Action sites, including access roads, were conducted on November 13 and 14, 2007 by Wildland International, Inc. No noxious or invasive weeds were observed at Blind Spring, 4WD Spring, Layton Spring, Rock Spring, South Millick Spring, The Seep, and Willow Spring. At W Spring Valley Complex 1, no noxious weeds were observed at the site, but the invasive non-native cheatgrass (*Bromus tectorum*) was common at the site.

The Ely District weed inventory documented the noxious weed salt cedar (*Tamarix* spp.) with the closest population approximately 0.6 mile from the site at Blind Spring. At Rock Spring, the noxious weed spotted knapweed (*Centaurea stoebe*) and tall whitetop (*Lepidium latifolium*) were documented within the surrounding area while the invasive weed bull thistle (*Cirsium vulgare*) was also documented with the nearest population approximately 0.7 mile from the site. At W Spring Valley Complex 1, the inventory documented the noxious weed Canada thistle (*Cirsium arvense*) with the nearest population approximately 0.7 mile from the site. At Willow Spring, the noxious weed Canada thistle and the invasive weed, bull thistle, were documented within the surrounding area.

Only one invasive non-native species (cheatgrass) was found at the Proposed Action area during the November 2007 surveys. This species is not included on the official Nevada Department of Agriculture list of noxious weeds. No noxious weeds were found at the sites during the surveys.

8. Range/ Livestock

The BLM manages grazing under the authority of grazing and rangeland specific laws (Taylor Grazing Act of 1934, and Public Rangelands Improvement Act of 1978) and the mandates of the Federal Land Policy and Management Act of 1976 that stipulates management of public lands under the principles of sustainability and multiple uses. Under this management, ranchers may obtain permits for an allotment of public land on which a specified number of livestock may graze. Term permits authorize grazing use based on perennial vegetation. The number of permitted livestock on a particular allotment is determined by how many animal unit months (AUMs) that land would support. An AUM is the amount of forage needed to sustain

one 1,000-pound cow and her calf, five sheep, or five goats for a month. The BLM operates a program to stabilize or improve the ecological condition of the allotments. The program includes proper management of livestock grazing and such improvements as fences and water developments. The Proposed Action sites would occur in the following seven grazing allotments: South Spring Valley, Scotty Meadows, Bastian Creek, Majors, Stephens Creek, Negro Creek, and Red Hills (Table 3). Biological surveys were conducted of the Proposed Action sites on November 13 and 14, 2007 by Wildland International, Inc. The results of those surveys are identified for each site below.

Blind Springs: Blind Springs is located in the South Spring Valley Allotment. The South Spring Valley Allotment is approximately 84,619 acres in size. There are approximately 79,549 public land acres and 5,070 private land acres within the allotment. Cattle are the primary kind of livestock using the Blind Springs area. The surveys identified that Blind Spring is heavily impacted by domestic cows (*Bos taurus*) and possibly domestic sheep (*Ovis aries*) using the area for water.

The Seep: The Seep is located in the Scotty Meadows Allotment. The Scotty Meadows Allotment is approximately 20,230 acres. There are approximately 17,361 public land acres and 2,868 private land acres within the allotment. Cattle are the primary livestock using The Seep area. The surveys identified The Seep as a severely degraded area, heavily impacted by domestic cows using the spring site for water.

Layton Spring: Layton Spring is located within the Bastian Creek Allotment. The Bastian Creek Allotment consists of approximately 13,801 acres. There are approximately 13,595 public land acres and 206 private land acres within the allotment. Cattle are the primary livestock using the Layton Spring area. The biological surveys observed mammals and mammal sign at the spring including the domestic cow.

Rock Spring and 4WD Spring: Rock Spring and 4WD Spring are both located within the Majors Allotment within the Osceola Use Area. The Majors Allotment consists of approximately 103,385 acres. There are approximately 97,944 public land acres and 5,349 private land acres within the allotment. Cattle are the primary livestock using these two springs. The biological surveys observed mammals and mammal sign at the springs including the domestic cow. 4WD Spring is subject to heavy grazing and used as a watering site for cattle.

W Spring Valley Complex 1: W Spring Valley Complex 1 is located in the Stephens Creek Allotment. The Stephens Creek Allotment is approximately 4,380 acres. There are approximately 3,768 public land acres and 611 private land acres within the allotment. Both cattle and sheep are the primary livestock using the West Spring Valley Complex 1 area. Domestic cow was observed during the biological surveys.

South Millick Spring: South Millick Spring is located in the Negro Creek Allotment. The Negro Creek Allotment is approximately 34,976 acres. There are approximately 32,569 public land acres and 2,407 private land acres within the allotment. Millick Springs fence #550688 is within the vicinity of South Millick Spring. Cattle are the primary livestock using the South Millick Spring area. The biological surveys observed mammals and mammal sign, including domestic cow.

Willow Spring: Willow Spring is located in the Red Hills Allotment. The Red Hills Allotment is approximately 36,552 acres. There are approximately 36,432 public land acres and 120 private land acres within the allotment. Sheep are the primary livestock using the Willow Spring area. The biological surveys observed mammals and mammal sign at Willow Spring, including domestic cow.

Table 3 summarizes the allotment information that the Proposed Action sites occur within.

Table 3. Allotment Information

Allotment	Number of Livestock	Kind of Livestock	Type of Use	Period of Use	Percent Public Lands	Permitted Use (AUMs)
South Spring Valley	800	Sheep	A	05/01 - 06/15	100%	242
	800	Sheep	A	09/01 - 09/30		158
	13,971	Sheep	N	05/01 - 06/15		4,226
	383	Cattle	A	02/01 - 06/15		1,703
Scotty Meadows	378	Cattle	A	06/01 - 09/30	81%	1,228
Bastian Creek	148	Cattle	A	03/01 - 02/28	100%	1,778
Majors	835	Sheep	A	05/01 - 06/30	100%	335
	835	Sheep	A	09/01 - 09/30		165
	7,708	Sheep	N	05/01 - 10/31		9,326
	633	Cattle	A	02/01 - 06/10		2,709
Stephens Creek	141	Sheep	A	06/01 - 10/31	100%	142
	35	Cattle	A	06/01 - 10/31		176
Negro Creek	310	Cattle	A	03/01 - 02/28	100%	3,720
	7	Cattle	A	03/01 - 02/28		7
Red Hills	2,184	Sheep	A	03/01 - 04/30	100%	876
	2,185	Sheep	A	11/01 - 02/28		1,724

AUMs – Animal Unit Months

N – AUMs are held in voluntary nonuse (N) for the conservation and protection of natural resources.

A – Active

9. Recreation

Recreation through the BLM Ely District Office is managed through the designation of special recreation management areas (SRMAs) and extensive recreation management areas (ERMAs) as described in the Ely RMP. A SRMA is an area where more intensive recreation management is needed and an ERMA includes all BLM managed land outside the SRMA and may include developed and primitive recreation sites with minimal facilities. Five of the Proposed Action sites (Willow Spring, W Spring Valley Complex 1, South Millick Spring, Blind Spring, and The Seep) are located within ERMAs and three of the Proposed Action sites (Rock Spring, 4WD Spring, and Layton Spring) occur within the Loneliest Highway SRMA, which is described in the Ely RMP. Great Basin touring is the primary recreational activity that occurs within this SRMA.

The mountains and desert valleys surrounding the Proposed Action area offer a variety of dispersed recreational opportunities on BLM-administered public lands including hiking, sightseeing, photography, picnicking, and camping. The following is a list of recreational areas in the vicinity of the Proposed Action sites.

Blind Spring: The Humboldt-Toiyabe National Forest is located approximately 18.0 miles northwest, the Great Basin National Park is located approximately 7.0 miles northeast, and the Highland Ridge Wilderness Area is located approximately 3.0 miles east of Blind Spring.

The Seep: The Humboldt-Toiyabe National Forest is located approximately 14.0 miles northwest, the Great Basin National Park is located approximately 5.0 miles east, and the Highland Ridge Wilderness Area is located approximately 4.0 miles east of The Seep.

Layton Spring: The Humboldt-Toiyabe National Forest is located approximately 6.0 miles west and approximately 8.0 miles northeast, the Great Basin National Park is located approximately 7.0 miles southeast, the Mt. Moriah Wilderness Area is located approximately 10.0 miles northeast, the High Schells Wilderness Area is located approximately 6.0 miles west, the Swamp Cedar Natural Area is located approximately 1.0 mile north, the Cleve Creek Recreation Area is located approximately 10.0 miles northwest, and the Sacramento Pass Recreation Area is located approximately 9.0 miles east of Layton Spring.

4WD Spring: The Humboldt-Toiyabe National Forest is located approximately 3.0 miles west and approximately 9.0 miles northeast, the Great Basin National Park is located approximately 10.0 miles southeast, the Mt. Moriah Wilderness Area is located approximately 11.0 miles northeast, the High Schells Wilderness Area is located approximately 3.0 miles west, the Swamp Cedar Natural Area is located approximately 1.0 mile east, the Cleve Creek Recreation Area is located approximately 6.0 miles northwest, and the Sacramento Pass Recreation Area is located approximately 11.0 miles east of 4WD Spring.

Rock Spring: The Humboldt-Toiyabe National Forest is located approximately 10.0 miles west and approximately 2.0 miles east, the Great Basin National Park is located approximately 8.0 miles southeast, the Mt. Moriah Wilderness Area is located approximately 4.0 miles east, the High Schells Wilderness Area is located approximately 10.0 miles west, the Swamp Cedar Natural Area is located approximately 4.0 miles southwest, the Cleve Creek Recreation Area is located approximately 10.0 miles northwest, and the Sacramento Pass Recreation Area is located approximately 6.0 miles southeast of Rock Spring.

W Spring Valley Complex 1: The Humboldt-Toiyabe National Forest is located approximately 2.0 miles west and approximately 9.0 miles east, the Great Basin National Park is located approximately 19.0 miles southeast, the Mt. Moriah Wilderness Area is located approximately 9.0 miles east, the High Schells Wilderness Area is located approximately 2.0 miles west, the Swamp Cedar Natural Area is located approximately 11.0 miles south, and the Cleve Creek Recreation Area is located approximately 7.0 miles southwest of W Spring Valley Complex 1.

South Millick Spring: The Humboldt-Toiyabe National Forest is located approximately 6.0 miles west and approximately 4.0 miles east, the Great Basin National Park is located approximately 17.0 miles southeast, the Mt. Moriah Wilderness Area is located approximately 5.0 miles east, the High Schells Wilderness Area is located approximately 7.0 miles west, the Swamp Cedar Natural Area is located approximately 11.0 miles southwest, and the Cleve Creek Recreation Area is located approximately 11.0 miles southwest of South Millick Spring.

Willow Spring: The Humboldt-Toiyabe National Forest is located approximately 4.0 miles west and approximately 25.0 miles southeast, the High Schells Wilderness Area is located approximately 10.0 miles southwest, and the Government Peak Wilderness Area is located approximately 21.0 miles southeast of Willow Spring.

The mountains and valleys surrounding the Proposed Action area also offer a variety of seasonal hunting opportunities on BLM-administered public lands. According to the 2008 Nevada Hunt Book (for the 2008-2009 season), all of the Proposed Action sites are within Hunt Area 11, but within different Unit Groups. Willow Spring is located at 5,988 feet in elevation within Unit Group 113. For this reason, the site is within hunting range for pronghorn antelope (*Antilocapra americana*), and mule deer (*Odocoileus hemionus*) between August 1 and November 5. The five springs, 4WD Spring, Layton Spring, W Spring Valley Complex 1, South Millick Spring, and Rock Spring, are located between 5,583 – 6,337 feet in elevation within Unit Group 114. For this reason, the sites are within the hunting range for elk (*Cervus canadensis*), pronghorn antelope, and mule deer between August 1 and December 5. The two springs, Blind Spring and The Seep, are located between 5,773 – 5,777 feet in elevation within Unit Group 115. For this reason, they are within the hunting range for pronghorn antelope and mule deer between August 1 and November 25.

According to Nevada Division of Wildlife (<http://www.ndow.org/hunt/seasons/mig/index.shtm>) for the 2008-2009 hunting season, all of the Proposed Action sites and access roads are located within the hunting range for upland game species, furbearer animals, and mountain lion. The hunting season for furbearer animals, and upland game species extends from September 1 to April 15 and the hunting season for mountain lion is year long.

10. Soils

The Natural Resources Conservation Service (NRCS) maintains a database on soils in the project region. Based on soil types, the NRCS database provides an ecological site description (ESD). Each ESD describes physical, geography, and soil characteristics and potential native vegetation (grasses, forbs, shrubs, and trees). The ESDs for the Proposed Action sites are listed below (<http://soildatamart.nrcs.usda.gov/Report.aspx?Survey=NV779&UseState=NV>, accessed on January 14, 2008).

Blind Spring: Soils are classified as Katelana-Toopits-Biji association (map unit symbol 4121). The ESD for Katelana soil is SODIC TERRACE 5-8" P.Z. (R028BY074NV) and is described as:

- Occurs on fan skirts, alluvial flats, and lakeplain terraces and slope gradients are typically 2 to 8 percent;
- Soils are calcareous throughout and moderately to strongly saline;
- Runoff is slow, permeability is moderately slow, and available water holding capacity is high;
- Potential native plant community (as described in the NRCS database) is dominated by shadscale and black greasewood; and
- Potential native vegetative composition is approximately 10 percent grasses, 5 percent forbs, and 85 percent shrubs.

The ESD for Toopits soil is DRY FLOODPLAIN (R028AY025NV) and is described as:

- Occurs on inset fans, axial stream terraces, and axial stream floodplains and slope gradients are typically 0 to 4 percent;
- Soils are derived from alluvium of mixed rock sources, have low to moderate salt accumulations, and surface soil textures vary from silt loam to sandy loam;
- Runoff is medium to very slow, water intake rates are moderate to rapid, the available water holding capacity is low to moderate, and the soils are moderately well to somewhat poorly drained;
- Potential native plant community (as described in the NRCS database) is dominated by basin wildrye (*Leymus cinereus*), creeping wildrye (*Leymus triticoides*), and basin big sagebrush; and
- Potential native vegetative composition is approximately 80 percent grasses, 5 percent forbs, and 15 percent shrubs.

The ESD for Biji soil is SALINE BOTTOM (R028AY106NV) and is described as:

- Occurs on axial-stream floodplains and lakeplain terraces and slope gradients are typically 0 to 2 percent;
- Soils have formed in alluvium from mixed rock sources;
- Soils are somewhat poorly drained, the available water holding capacity is moderate, runoff is slow to very slow, and water may pond in some areas for short periods in the early spring;
- Potential native plant community (as described in the NRCS database) is dominated by basin wildrye and alkali sacaton (*Sporobolus airoides*); and
- Potential native vegetative composition is approximately 80 percent grasses, 5 percent forbs, and 15 percent shrubs and trees.

The Seep: Soils are classified as Ewelac (occasionally flooded)-Ewelac, sodic-Biji association (map unit symbol 3507). The ESD for Ewelac soil, occasionally flooded, is DRY SALINE MEADOW (R028AY104NV) and is described as:

- Occurs on lakeplain terraces and slope gradients are typically 0 to 2 percent;
- Soils of this site are very deep and are strongly salt and sodium-affected in the upper profile;
- These soils are somewhat poorly drained, runoff is very slow, and water may pond in some areas for short periods;
- Potential native plant community (as described in the NRCS database) is dominated by alkali cordgrass (*Spartina gracilis*), alkaligrass (*Puccinellia distans*), and King's ivesia (*Ivesia kingii*); and
- Potential native vegetative composition is approximately 75 percent grasses, 15 percent forbs, 5 percent shrubs, and 5 percent trees.

The ESD for Ewelac soil is SODIC FLAT 5-8" P.Z. (R028BY020NV) and is described as:

- Occurs on alluvial flats or lake plains usually adjacent to playas and slope gradients are typically less than 2 percent;
- Soils of this site are deep and the upper portion of most of these soils is strongly salt and sodium-affected due to capillary movement of dissolved salts upward from the ground water;
- These soils are somewhat poorly to well drained, high salt concentrations reduce the available water holding capacity, runoff is slow to medium depending on degree of soil surface crusting from the high salt concentrations, and the potential for sheet and rill erosion is slight to moderate;
- Potential native plant community (as described in the NRCS database) is dominated by black greasewood, alkali sacaton and inland saltgrass (*Distichlis spicata*); and
- Potential native vegetative composition is approximately 15 percent grasses, 5 percent forbs, and 80 percent shrubs.

The ESD for sodic-Biji soil is SALINE BOTTOM (R028AY106NV) and is described above.

Layton Spring: The Layton Spring site crosses two different map units, the Kunzler association (map unit symbol 3293) and the Huilepass-Izamatch association (map unit symbol 3342). Two ESDs exist for the Kunzler association and include SODIC TERRACE 8-10" P.Z. (R028BY028NV) and LOAMY 8-10" P.Z. (R028BY010NV). The SODIC TERRACE 8-10" P.Z. (R028BY028NV) ESD is described as:

- Occurs on fan skirts, alluvial plains, alluvial flats, lakeplain terraces, beach terraces, and fan piedmonts and slope gradients typically range from 0 to 4 percent;
- Soils are deep to very deep from mixed sources, textures tend to be medium to moderately coarse, and soils are moderately to strongly affected by salts such as sodium;

- Soils are somewhat poorly drained, water intake rates are moderately slow to slow, available water holding capacity is moderate to high, and runoff is slow to very slow;
- Potential native plant community (as described in the NRCS database) is dominated by black greasewood, basin big sagebrush and basin wildrye; and
- Potential native vegetative composition is approximately 20 percent grasses, 5 percent forbs, and 75 percent shrubs.

The LOAMY 8-10" P.Z. (R028BY010NV) ESD is described as:

- Occurs on fan piedmonts, rock pediments, and low rolling hills and slope gradients typically range from 4 to 15 percent;
- Soils of this site are moderately deep to deep, surface soils are 3 to 10 inches thick and are moderately coarse to medium textured, and many soils are modified with a high volume of gravels, cobbles or stones throughout the profile;
- Soils are well drained, the available water holding capacity varies with soil texture and soil depth, ranging from low to moderate, runoff is medium, and the potential for sheet and rill erosion is moderate to high depending on slope;
- Potential native plant community (as described in the NRCS database) is dominated by Wyoming big sagebrush, Indian ricegrass (*Achnatherum hymenoides*) and needle-and-thread (*Hesperostipa comata*); and
- Potential native vegetative composition is approximately 50 percent grasses, 5 percent forbs, and 45 percent shrubs and trees.

For the Huilepass-Izamatch association, two ESDs exist for Huilepass soil and include SHALLOW LOAM 8-10" P.Z. (R028AY017NV) and LOAMY 8-10" P.Z. (R028AY015NV). The ESD for Izamatch soil is LOAMY SLOPE 5-8" P.Z. (R028AY003NV). The SHALLOW LOAM 8-10" P.Z. (R028AY017NV) ESD is described as:

- Occurs on sideslopes and summits of fan piedmonts, rock pediments, and hills and slope gradients are typically 4 to 30 percent;
- Soils of this site may be gravelly, stony, or cobbly (often with inclusions of bedrock);
- Available water holding capacity is low, runoff is moderate to rapid, and the soils are well drained;
- Potential native plant community (as described in the NRCS database) is dominated by Wyoming big sagebrush and Indian ricegrass; and
- Potential native vegetative composition is approximately 45 percent grasses, 5 percent forbs, and 50 percent shrubs.

The LOAMY 8-10" P.Z. (R028AY015NV) ESD is described as:

- Occurs on piedmont slopes and basin floors on all exposures and slope gradients are typically 2 to 15 percent;
- Soils of this site are moderately deep to very deep from calcareous parent materials and gravels may be present throughout the profile;

- Water intake rates are moderately slow to moderate, available water holding capacity is low to moderate, runoff is slow to medium, and the soils are well drained;
- Potential native plant community (as described in the NRCS database) is dominated by Wyoming big sagebrush, Indian ricegrass and needle-and-thread; and
- Potential native vegetative composition is approximately 55 percent grasses, 5 percent forbs, and 40 percent shrubs.

The LOAMY SLOPE 5-8" P.Z. (R028AY003NV) ESD is described as:

- Occurs on fan piedmonts, rock pediments, and low hills on all exposures and slope gradients are typically 15 to 30 percent;
- Soils of this site are shallow or very shallow to bedrock and surface textures are loams to sandy loams and are typically very gravelly, cobbly, or stony;
- Soils are well drained, water intake rates are moderate, available water holding capacity is very low, and runoff is rapid;
- Potential native plant community (as described in the NRCS database) is dominated by shadscale and Indian ricegrass; and
- Potential native vegetative composition is approximately 30 percent grasses, 10 percent forbs, and 60 percent shrubs.

4WD Spring: Soils are classified as Biji-Ewelac association (map unit symbol 3510). The ESD for Biji soil is SALINE BOTTOM (R028AY106NV) and is described above. The ESD for Ewelac soil is DRY SALINE MEADOW (R028AY104NV) and is described above.

Rock Spring: Soils are classified as Armespan-Jericho association (map unit symbol 1350). The ESD for Armespan soil is SHALLOW CALCAREOUS LOAM 8-10" P.Z. (R028AY013NV) and is described as:

- Occurs on summits and sideslopes of piedmont slopes and hills and lower mountains on all aspects and slope gradients typically range from 2 to 15 percent;
- Soils of this site are shallow to moderately deep to a restrictive layer that impedes plant rooting depth;
- The available water holding capacity is low to moderate, the soils are well drained, runoff is slow to medium, and the potential for sheet and rill erosion is slight to moderate;
- Potential native plant community (as described in the NRCS database) is dominated by black sagebrush (*Artemisia nova*), Indian ricegrass, and needle-and-thread; and
- Potential native vegetative composition is approximately 45 percent grasses, 10 percent forbs, and 45 percent shrubs.

The ESD for Jericho soil is SHALLOW CALCAREOUS LOAM 8-10" P.Z. (R028AY013NV) and is described above.

W Spring Valley Complex 1: Soils are classified as Ewelac-Kolda-Bigspring association (map unit symbol 3715). The ESD for Ewelac is SALINE BOTTOM (R028BY004NV) as is described as:

- Occurs on lakeplain terraces, stream terraces, and on the margins of axial-stream floodplains and slopes range from 0 to 4 percent;
- Soils of this site are usually deep to very deep and calcareous, are normally strongly salt and sodium-affected in their upper profile with soil reaction and salinity decreasing with depth, and the surface layer of these soils tend to crust and bake upon drying;
- Soils are mostly somewhat-poorly to poorly drained, available water holding capacity is reduced due to the saline condition of these soils, runoff is slow to very slow, water may pond in some areas, and potential for sheet and rill erosion is slight;
- Potential native plant community (as described in the NRCS database) is dominated by basin wildrye and alkali sacaton; and
- Potential native vegetative composition is approximately 80 percent grasses and grass-like plants, 5 percent forbs, and 15 percent shrubs.

The ESD for Kolda soil is WET MEADOW 10-14" P.Z. (R028BY001NV) and is described as:

- Occurs on axial-stream floodplains, stream terraces, inset fans, and around localized seeps and springs and slope gradients typically range from 0 to 2 percent;
- Soils of this site are fertile and deep to very deep;
- Soils have a high available water holding capacity, are poorly to somewhat poorly drained, are occasionally flooded for brief periods in the spring by stream overflow or unconfined runoff from surrounding areas, runoff is slow to very slow, and water may pond in some areas;
- Potential native plant community (as described in the NRCS database) is dominated by Nevada bluegrass (*Poa secunda* ssp. *nevadensis*) and/or alkali bluegrass (*Poa juncifolia*), sedges, and rushes; and
- Potential native vegetative composition is approximately 85 percent grasses and grass-like plants and 15 percent forbs.

The ESD for Big Spring soil is SODIC TERRACE 8-10" P.Z. (R028AY008NV) and is described as:

- Occurs on fan skirts, alluvial plains, alluvial flats, lakeplain terraces, beach terraces, and fan piedmonts and slope gradients typically range from 0 to 4 percent;
- Soils of this site are deep to very deep from mixed sources, textures are variable, but tend to be medium to moderately coarse, and soils are moderately to strongly affected by salts such as sodium;
- The soils in this site are somewhat poorly drained, water intake rates are moderately slow to slow, available water holding capacity is moderate to high, and runoff is slow to very slow;

- Potential native plant community (as described in the NRCS database) is dominated by black greasewood, basin big sagebrush and basin wildrye; and
- Potential native vegetative composition is approximately 25 percent grasses, 5 percent forbs, and 70 percent shrubs.

South Millick Spring: Soils are classified as Kunzler-Katelana association (map unit symbol 3291). The ESD for Kunzler soil is SODIC TERRACE 8-10" P.Z. (R028BY028NV) and is described above. The ESD for Katelana soil is SODIC TERRACE 5-8" P.Z. (R028BY074NV) and is described above.

Willow Spring: Soils are classified as Ocala-Duffer-Kolda association (map unit symbol 4060). The ESD for Ocala soil is SALINE BOTTOM (R028BY004NV) and is described above. The ESD for Duffer soil is SALINE MEADOW (R028BY002NV) and is described as:

- Occurs along axial-stream floodplains and around seeps and springs of basin floors and slope gradients are typically 0 to 2 percent;
- Soils of this site are deep to very deep and are strongly salt and sodium-affected in the upper profile with soil reaction and salinity decreasing with depth;
- The soils in this site are poorly to somewhat poorly drained, additional moisture is received on this site as run-in from higher landscapes or as overflow from adjacent streams, runoff is slow to very slow, water may pond briefly in areas with depressions, and these soils are prone to forming gullies which intercept normal stream overflow patterns and may result in site degradation;
- Potential native plant community (as described in the NRCS database) is dominated by alkali sacaton; and
- Potential native vegetative composition is approximately 85 percent grasses and grass-like plants, 10 percent forbs, and 5 percent shrubs.

The ESD for Kolda soil is WET MEADOW 10-14" P.Z. (R028BY001NV) and is described above.

11. Special Status Species (Federally Listed, Proposed and Candidate Species; State Protected Species; and BLM Sensitive Species)

Data, surveys, and reports from the Nevada Natural Heritage Program (NNHP), SNWA, and NDOW document the potential for the following special status species to occur within the vicinity of the Proposed Action areas: ferruginous hawk (Nevada State-Protected and BLM Sensitive Species), golden eagle (Nevada State-Protected and BLM Special Status), prairie falcon (Nevada State-Protected and BLM Sensitive Species), bald eagle (*Haliaeetus leucocephalus*) (Nevada endemic and BLM Sensitive Species), greater sage-grouse (Nevada State-Protected and Nevada Special Status Species), burrowing owl (Nevada State-Protected and BLM Sensitive Species), Western snowy plover (*Chadadrius alexandrinus nivosus*) (Nevada State-Protected and BLM Sensitive Species), silver-haired bat (*Lasionycteris noctivagans*) (BLM Sensitive Species), Brazilian free-tailed bat (*Tadarida brasiliensis*) (Nevada State-Protected and BLM Sensitive Species), Townsend's big-eared bat (*Corynorhinus townsendii*) (Nevada State-Protected and BLM Sensitive Species), spotted bat (*Euderma maculatum*) (Nevada State-Protected, BLM Sensitive Species, BLM Nevada Special

Status Species, and U.S. Forest Service Humbolt-Toiyabe National Forest Sensitive Species), pygmy rabbit (*Brachylagus idahoensis*) (BLM Sensitive Species and NNHP Watch List Species), Baking Powder Flat blue butterfly, and northern leopard frog (*Rana pipiens*) (BLM Sensitive Species).

Sensitive species biological surveys of the Proposed Action sites and access roads were conducted by BIO-WEST Inc. (2007) and Wildland International, Inc. (November 13 and 14, 2007). Potential habitat may have occurred for Ute Lady's tresses (*Spiranthes diluvialis*) (Threatened and BLM Nevada Special Status Species) at Blind Spring, The Seep, and Willow Spring; however, persistent impacts to the spring areas from grazing would make the presence of this species highly unlikely. Potential habitat for White River catseye (*Cryptantha welshii*) [BLM Sensitive Species, NNHP At-Risk Species, Nevada Native Plant Society (NNPS) Watch List Species, and Nevada Endemic] occurs along the deep sand portions of the existing access road to Blind Spring and The Seep, but individual plants were not observed during the field surveys. To a lesser extent, potential habitat for the Snake Range bladderpod (*Lesquerella pendula*) (NNHP At-Risk Species, NNPS Watch List Species, and Nevada Endemic) occurs along the deep sand portions of the existing access road to Blind Spring and The Seep, but no individual plants were observed during the field surveys. Pygmy rabbit habitat occurs along portions of the access road to Layton Spring and at Layton Spring itself. Potential yearlong habitat for greater sage-grouse occurs at Layton Spring, 4WD Spring, W Spring Valley Complex 1, South Millick Spring, and Willow Spring. There is an active sage grouse lek approximately 1.3 miles west of The Seep. Loggerhead shrike (BLM and State of Nevada Sensitive Species and NNHP Watch List Species) were identified during the surveys at Rock Spring and W Spring Valley Complex 1. The northern leopard frog has been observed at W Spring Valley Complex 1 and South Millick Spring.

12. Vegetation (including Wetlands/Riparian)

To assess the vegetation of the Proposed Action areas, botanical surveys were conducted November 13 and 14, 2007 by Wildland International, Inc. Ecological evaluations of the aquatic ecosystems of six of the eight sites were also conducted by BIO-WEST, Inc. in September of 2004 and 2006. The descriptions below summarize information from both of those survey efforts.

Blind Spring: Blind Spring a small seep consisting of a shallow, open pool with fringing wetland/meadow vegetation. The site is highly disturbed due to cattle use and shallow ponding for livestock use. The spring is a bermed area and the banks are nearly barren of vegetation. Habitat along the access road is a mixture of Inter-Mountain Basins Big Sagebrush Shrubland, Inter-Mountain Basins Mixed Salt Desert Scrub, and Great Basin Xeric Mixed Sagebrush Shrubland. Botanical surveys identified dominant vegetation in the pool area of Blind Spring as cattail (*Typha* sp.) and overall the vegetation is best categorized as North American Arid West Emergent Marsh. Other submerged and emergent aquatic vegetation at the site include: horsehair algae (*Chlorophyceae* sp.), water parsnip (*Berula bess*), wild celery (*Apium graveolens*), Baltic rush (*Juncus balticus*), bidens (*Bidens* sp.), broadleaf cattail (*Typha latifolia*), hardstem bulrush (*Scirpus acutus*), Olney's three square bulrush (*Schoenoplectus americanus*), rabbit-foot grass (*Polypogon monspeliensis*), spikerush (*Eleocharis* sp.), Torrey's rush (*Juncus torreyi*), wapato (*Sagittaria cuneata*), and willow-herb (*Epilobium* sp.).

The Seep: The Seep is a spring surrounded by a limited wetland/meadow area. The site is a severely degraded area, heavily impacted by livestock use. Persistent impacts have occurred from grazing. The vegetation along the access road is a mixture of Inter-Mountain Basins Big Sagebrush Shrubland, Inter-Mountain Basins Mixed Salt Desert Scrub, and Inter-Mountain Basins Greasewood Flats. Botanical surveys identified the dominant vegetation at the pool as Baltic rush, white waterbuttercup (*Ranunculus aquatilis*), scratchgrass (*Muhlenbergia asperifolia*), pacific silverweed (*Potentilla anserina*), and saltgrass (*Distichlis spicata*), and the vegetation is best characterized as North American Arid West Emergent Marsh.

Layton Spring: The water from Layton Spring is diverted to a trough, which overflows creating a very limited wetland/meadow area. The spring is highly disturbed due to heavy use by cattle and high diversion disturbance. During botanical surveys, it was noted that the dominant vegetation observed immediately surrounding the Layton Spring marsh is Inter-Mountain Basins Big Sagebrush Shrubland, which includes big basin sagebrush, black sagebrush, Wyoming sagebrush and rubber rabbitbrush with scattered black greasewood. The existing access road is a mixture of Inter-mountain Basins Big Sagebrush Shrubland, Inter-Mountain Basins Mixed Salt Desert Scrub, and Great Basin Xeric Mixed Sagebrush Shrubland. Vegetation in and around the spring site includes Baltic rush, white water-buttercup, rabbit-foot grass, pacific silverweed, tumbling saltweed (*Atriplex rosea*), saltgrass, fineleaf pondweed (*Suckenia filiformis*), horsehair algae, muskgrass (*Chara vulgaris*), sandberg bluegrass (*Poa secunda*), sedge (*Carex* sp.), spikerush, and wapato.

4WD Spring: 4WD Spring is one of the few valley floor springs in Spring Valley that has woody riparian vegetation. The spring forms a small collection pool used as a watering site for livestock. The area is subject to heavy grazing. It has a limited wetland/meadow area. Botanical surveys identified the vegetation surrounding the Proposed Action site as a mixture of Inter-Mountain Basins Big Sagebrush Shrubland and Great Basins Xeric Mixed Sagebrush Shrubland, which is dominated by black greasewood, big basin sagebrush and rubber rabbitbrush. A few Utah junipers (*Juniperus osteosperma*) are scattered throughout the area also. 4WD Spring forms a small collection pool with emergent vegetation dominated by Baltic rush, swordleaf rush (*Juncus ensifolius*), and Nebraska sedge (*Carex nebrascensis*) with a scattering of Woods' rose (*Rosa woodsii*) at the margins of the spring. There is narrow stream corridor extending approximately 400 feet northeast from the pool. This thin corridor is dominated by Baltic rush, Nebraska sedge, and rubber rabbitbrush. Vegetation in the spring pool is best characterized as North American Arid West Emergent Marsh.

Rock Spring: Rock Spring is a brook that extends downstream with a narrow band of herbaceous riparian vegetation, including pockets of woody riparian vegetation. Botanical surveys found that the dominant vegetation along the narrow stream, pool, and outflow is Nebraska sedge, saltgrass, Torrey's rush, and Baltic rush with some fineleaf pondweed. The pool and the marshy corridor can best be described as North American Arid West Emergent Marsh.

W Spring Valley Complex 1: W Spring Valley Complex 1 is part of an extensive spring complex. The water flows outward to create a myriad of wetlands and meadows. The site is highly disturbed due to livestock use, diversions, and the presence of roads and nonnative vegetation. According to the botanical surveys, the access road to the site is dominated by basin big sage and is considered Inter-Mountain Basins Big Sagebrush Shrubland. The habitat along the spring site is also considered Inter-Mountain Basins Big Sagebrush Shrubland and is

dominated by rubber rabbitbrush. The only tree in the area is Russian olive (*Elaeagnus angustifolia*). Other submerged and emergent aquatic vegetation identified throughout the extensive spring complex include: cinquefoil (*Potentilla* sp.), greater duckweed (*Spirodela polyrhiza*), horsehair algae, aster (*Symphyotrichum* sp.), Baltic rush, bog/bird's foot trefoil (*Lotus pinnatus*), broadleaf cattail, bulrush (*Scirpus* sp.), bur reed (*Sparganium* sp.), clover (*Trifolium* sp.), common reed (*Phragmites australis*), foxtail barley (*Hordeum jubatum*), hardstem bulrush, horsetail (*Equisetum* sp.), Indian paintbrush (*Castilleja mutis*), Nebraska sedge, Olney's three square bulrush, spikerush, and willow-herb.

South Millick Spring: The South Millick springbrook extends hundreds of meters downstream with a narrow band of herbaceous riparian vegetation. South Millick Spring is moderately disturbed due to livestock use. According to the botanical surveys, the vegetative dominants observed along the access road are black greasewood, rubber rabbitbrush, and Wyoming sagebrush. Vegetation along the pool and perennial stream is characterized as Great Basin Xeric Mixed Sagebrush Shrubland and North American Arid West Emergent Marsh. Species at the spring site include Baltic rush, Nebraska sedge, southern cattails (*Typha domingensis*), fineleaf pondweed, and watercress (*Nasturtium officinale*), greater duckweed, horsehair algae, muskgrass, watercress (*Rorippa nasturtium-aquaticum*), water parsnip, wild celery, bur reed, hardstem bulrush, rabbit-foot grass, redtop (*Agrostis gigantea*), silverweed (*Potentilla anserina*), and softstem bulrush (*Scirpus validus*).

Willow Spring: Willow Spring has a limited wetland/meadow area with sparse woody riparian vegetation. The spring forms a small collection pool with a narrow corridor extending northward from the pool. Willow Spring is moderately disturbed due to livestock use, recreation, and diversion. The small stream corridor acts as a dividing line between the two habitat types that dominate that area, basin big sage and black greasewood to the east (downslope) and black sagebrush and rubber rabbitbrush with large patches of Woods' rose to the west (upslope). The habitat in the area is dominated by Great Basin Xeric Mixed Sagebrush Shrubland and Inter-Mountain Basins Big Sagebrush Shrubland. According to botanical surveys, the small collection pool has emergent vegetation that is characterized as North American Arid West Emergent Marsh. Species at the pool include southern cattails, horsehair algae, watercress, Baltic rush, broadleaf cattail, buttercup (*Ranunculus anemopsis*), Canada goldenrod (*Solidago canadensis*), Nebraska sedge, redtop, Woods' rose, and willow-herb.

13. Visual Resource Management

For the lands managed by the BLM, Visual Resource Management (VRM) objectives have been developed to protect the most scenic public lands, especially those lands that receive the greatest amount of public viewing. The VRM system is the basic tool used by the BLM to inventory and manage visual resources on public lands. VRM classes are objectives that outline the amount of disturbance an area can tolerate before it no longer meets the visual quality of that class. The VRM classifications range from Class 1, the most restrictive to Class 4, the least restrictive. The VRM takes visual values for an area into account in order to establish management objectives and actions. Visual resources contribute to people's enjoyment when using an area and may be unique or unusual landscapes or natural scenic value.

The Proposed Action area is located in the Great Basin, Spring Valley. The Great Basin is dominated by valleys and mountain ranges and most vegetative cover in Spring Valley is low. The valley vegetation has little variety and the color variation is subtle and generally muted shades. The landscapes do not contain any unique scenic vistas, features, or landforms and are common to the site areas; however, the natural setting is an important aspect of the Spring Valley terrain.

Existing manmade structures in the Proposed Action area include existing dirt roads, which receive occasional visitation by motorized vehicles. The Proposed Action sites would not be easily seen from any major highways or state routes. During the day, construction activities at the sites would be visible; however, since construction operations would be limited to the daytime, there would be no visual impacts to the night sky from the sites. Once construction was complete, the tan or gray color of the short (two-three feet) piezometers and associated appurtenances would blend and conform with the surrounding landscape at each site.

All of the Proposed Action sites are considered to be in a VRM Class 3 except for a portion of the proposed access road to Layton Spring (approximately 2,100 feet), which is in a VRM Class 4. The objective within a Class 3 management class is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. The objective within a Class 4 management class is to provide for management activities which require major modification of the existing character of the landscape. The level of change to the characteristic landscape can be high.

14. Water Resources (Water Rights)

Groundwater in Spring Valley occurs in both a shallower basin-fill (alluvial) aquifer and a deeper carbonate rock aquifer. There are several permitted groundwater monitoring wells in the vicinity of the Proposed Action sites. SNWA has installed eight test/monitoring wells in Spring Valley. Six of the wells are on federal land managed by the BLM and two wells are on private property. There are also irrigation wells on federal and private property within the valley. SNWA has also submitted a ROW application for five monitoring wells, in Spring and Hamlin valleys.

BIO-WEST, Inc. has collected various scientific measurements at five of the eight Proposed Action sites, which are described below. Similar information is not yet available for the other three sites.

Blind Spring: The maximum depth is approximately 16 inches (40 centimeters), the maximum wetted width is approximately 135 feet (41 meters) and the approximate length is 135 feet (41 meters). The temperature at the source of the spring is 63°F (17°C), dissolved oxygen is 2.04 milligrams/liter, and pH is 6.85.

Layton Spring: Layton spring has a piped spring head with flows less than 0.01 gallon/second (0.05 liter/second). The maximum depth is approximately 19 inches (48 centimeters), maximum wetted width is approximately 72 feet (22 meters), and the approximate length is 72 feet (22 meters). At the source, the temperature is 62°F (16.5°C), dissolved oxygen is 5.55 milligrams/liter, and pH is 7.37. At the terminus, the temperature is 51°F (10.8°C), dissolved oxygen is 6.62 milligrams/liter, and pH is 8.65.

W Spring Valley Complex 1: The maximum depth is approximately 22 inches (55 centimeters), the maximum wetted width is approximately 32 feet (9.8 meters), and the approximate length is

194 feet (59 meters). At the source, the temperature is 51°F (10.5°C), dissolved oxygen is 1.92 milligrams/liter, and pH is 6.74. At the terminus the temperature is 56°F (13.2°C), dissolved oxygen is 4.49 milligrams/liter, and pH is 6.99.

South Millick Spring: The maximum depth is approximately 24 inches (61 centimeters), the maximum wetted width is approximately 105 feet (32 meters), and the approximate length is 512 feet (156 meters). At the source, the temperature is 58°F (14.7°C), dissolved oxygen is 5.24 milligrams/liter, and pH is 7.03. At the terminus, the temperature is 61°F (16.1°C), dissolved oxygen is 6.66 milligrams/liter, and pH is 7.36.

Willow Spring: The maximum depth is approximately 6 inches (15 centimeters), the maximum wetted width is approximately 33 feet (10 meters), and the approximate length is 282 feet (86 meters). The source temperature is 56°F (13.5°C), dissolved oxygen is 3.56 milligrams/liter, and pH is 6.96. The terminus temperature is 66°F (18.9°C), dissolved oxygen is 8.90 milligrams/liter, and pH is 8.30.

15. Wildlife

The diversity of wildlife resources around the Proposed Action sites is typical of Great Basin ecological systems. The vegetation types or communities that comprise the primary wildlife habitats in the Proposed Action areas consist of Inter-Mountain Basins Big Sagebrush Shrubland, Inter-Mountain Basins Mixed Salt Desert Scrub, and Great Basin Xeric Mixed Sagebrush Shrubland, Inter-Mountain Basins Greasewood Flats, and Great Basin Pinyon-Juniper Woodland.

Big game species in these habitat zones primarily consist of pronghorn antelope, mule deer, and elk. All of the sites are located within pronghorn antelope habitat, except Rock Spring which is located near pronghorn habitat. Rock Spring is located within mule deer and elk habitat, while all of the other sites are located near both mule deer and elk habitat.

Small game and nongame species are also found in the Proposed Action areas. Small game species include morning dove. Nongame species include a diversity of small mammals, raptors, passerines, amphibians, and reptiles. Examples include a variety of bats, ground squirrels, rabbits, mice, coyote, fox, badger, and skunk.

During sensitive species biological surveys conducted by Wildland International on November 13 and 14, 2007, wildlife species and wildlife species sign were also noted. While these surveys only represent a snapshot in time, species identified include black-tailed jackrabbit (*Lepus californicus*), coyote (*Canis latrans*), mule deer, and pronghorn antelope.

IV. ENVIRONMENTAL CONSEQUENCES

A. Proposed Action

The following resources have been analyzed and may be potentially affected by the Proposed Action.

1. Area of Critical Environmental Concern

Blind Spring is located within the Baking Powder Flat ACEC. Approximately 0.27 acre of the ACEC would be used for the ROW, however the disturbance from the ROW on the ACEC is not expected to have an effect on the Baking Powder Flat blue butterfly since the butterfly's host plant and potential habitat for the host plant does not occur within the ROW. The nearest

potential habitat is approximately 0.5 mile away. In order to protect and prevent damage to the Baking Powder Flat blue butterfly, and its host plant, all Proposed Action activities would occur within the boundaries of the ROW. Environmental protection measure for vegetation, as described in Section II.A.5 would be implemented to minimize impacts to vegetation. Also, the Proposed Action installation activities would be temporary in nature, lasting approximately three days at each site. For these reasons, the Proposed Action would have only minimal impact on the butterfly and it's habitat in the Baking Powder Flat ACEC.

2. Cultural Resources

No NRHP eligible historic properties were recorded at or near any of the proposed piezometers and associated appurtenances locations during the Class III pedestrian survey. Therefore, no cultural resources impacts as a result of the Proposed Action would occur.

3. Geology and Minerals

There is one active mining claim (NMC822816) at the Layton Spring site. Only a short portion of the proposed access road to the site would cross over the mining claim; therefore, the Proposed Action would not interfere with or compromise the claimant's rights and claim activities. A letter would be sent to the claimants to notify them of activity near their claim if the Proposed Action is granted. Thus, the Proposed Action would have no impact on geology and minerals.

4. Land Use

There are five authorized ROWs within the same area as the Proposed Action. The proposed access road for Layton Spring crosses through an existing gravel pit area. Although the access road would require improvements to safely access Layton Spring, since the road follows an existing dirt road, effects to the gravel pit are not anticipated. A letter of notification would be sent to the Nevada Department of Transportation by the BLM concerning the Proposed Action and placed in the BLM case file prior to the initiation of activities at the site. 4WD Spring is located within the area permitted to Spring Valley Wind LLC, for a wind energy facility. The ROW for the wind facility has permitted anemometers, however these anemometers are not located in the same area as the Proposed Action. For this reason, the facilities at 4WD Spring should not have an impact on the existing wind facilities. SBC/NV Bell has a buried telephone/telegraph line in the same area as the proposed West Spring Valley Complex 1. The telephone/telegraph line is not located at the spring and access to the site would not disturb existing facilities. The other two authorized ROWs in the area are issued to SNWA for hydrologic and meteorological stations. The Proposed Action would not affect the stations. Additionally, drilling operations to install the piezometers are not anticipated to affect any existing fences or cattle guards. Thus, the Proposed Action would have no impact on land use.

5. Migratory Birds of Conservation Concern

Based on BLM's list of migratory bird species of conservation concern and use of the GBBO predictive model, six species were determined to have 50 percent probability of occurrence or greater. These species were horned lark, loggerhead shrike, northern harrier, pinyon jay, sage sparrow, and vesper sparrow. The breeding period for these birds extends from April 1 to August 30 in the Great Basin Desert. Environmental protection measures for migratory birds have been included in the Proposed Action (Section II.A.5). Since no construction activity

would occur within the nesting season without prior surveys and guidance from the BLM, no impacts are expected to individual migratory birds.

The total amount of bird habitat potentially affected at the Proposed Action would be approximately 3.97 acres. The amount of habitat that would be disturbed by the Proposed Action is negligible compared with total available habitat in Spring Valley. Thus, there would be a negligible impact to migratory bird habitat resulting from the Proposed Action.

Since there would be no effect on individual migratory bird species and negligible impact to migratory bird habitat from the Proposed Action, there would be no impact to migratory bird populations.

6. Native American Concerns

Three of the four Native American tribal groups expressed no concerns or no concerns at this time with regard to the Proposed Action when contacted by the BLM Ely District Office Native American Coordinator, one tribal group had a concern regarding potential human remains discovered during the construction of the piezometers and associated appurtenances and access roads.

For the Proposed Action, in the event of an unanticipated discovery of Native American or historic interest during construction, Section VIII, Discovery Situations, of the State Protocol Agreement between the BLM and State Historic Preservation Office shall be implemented. In addition, if the unanticipated discoveries are human remains, regulations in the Native American Graves Protection and Repatriation Act of 2005 shall be followed. Therefore, no impacts to Native American concerns are anticipated.

7. Non-native, Invasive Species and Noxious Weeds

A Risk Assessment for Noxious & Invasive Weeds was completed for the Proposed Action and submitted to the BLM on February 6, 2008 (see Attachment 2). The likelihood of noxious/invasive weed species spreading to the Proposed Action sites (Factor 1) rates as Moderate (4) and the consequences of noxious/invasive weed establishment at the Proposed Action sites (Factor 2) rates as High (8). The Risk Rating for the Proposed Action is Moderate (32).

To minimize potential introduction or spread of invasive species and noxious weeds, environmental protection measures have been included in the Proposed Action (Section II.A.5). With implementation of these measures, the Proposed Action would have minimal impact on non-native invasive species and noxious weeds.

8. Range/ Livestock

The Proposed Action construction would disturb relatively little area (approximately 3.97 acres permanent ROW) and would have limited impacts to livestock grazing and rangeland resources. Construction would result in a minor loss of vegetation and ground cover. However, no reduction of AUM would be necessary due to the small amount of forage which may be lost compared to the size of the allotments overall.

Livestock management would not be impacted by disturbances related to construction of the Proposed Action. Construction would occur over a short period of time, and livestock may be frightened away from the spring sites; however construction activities would be very temporary and livestock would be able to access the springs in the evenings and early morning when the

workers aren't present. Further, the Proposed Action would not affect access to the water bodies once the proposed equipment is installed. Due to the temporary nature of the proposed construction activities, no long-term impact to range and livestock grazing is anticipated.

9. Recreation

Public use of the landscapes in the Proposed Action area is low, and because the area receives low levels of dispersed recreation use, current visitation to the Proposed Action sites is unknown. During construction, the extent of traffic is anticipated to be approximately two construction and support vehicles traveling to the site each day. Increased traffic in the area would result in increased attraction to the area, potentially resulting in approximately 1-2 social encounters per day for each site during construction. The social setting at the sites would return to pre-construction levels following completion of drilling. During construction, the abundance of public land similar in nature to the Proposed Action area would provide other opportunities for solitude and minimal encounters for recreationists. The temporary noise increase would contribute to the decrease in opportunities for solitude in the immediate area; however, noise levels would return to pre-construction levels following completion of drilling.

Installation of the proposed piezometers and associated appurtenances and access roads would change the physical setting and decrease the naturalness of the immediate area. Due to the abundance of roads already located in the area, the overall physical setting of the area would change very little. These changes in the physical setting would not have any impact on recreation in the immediate area.

The Proposed Action sites Willow Spring, W Spring Valley Complex 1, South Millick Spring, Blind Spring and The Seep are located within an ERMA. BLM's management responsibilities for ERMA's are primarily to provide basic recreation information to the public and to allow public access. Since the Proposed Action would not hinder either of these management practices, the Proposed Action would have no impact on recreation management as currently permitted.

Three Proposed Action sites, Rock, 4WD, and Layton springs, would be located within the Loneliest Highway SRMA. The Loneliest Highway SRMA is 675,123 acres and managed for a broad recreation opportunity spectrum. Under the Proposed Action, two piezometers, three staff gages, one V-notch weir, and one discharge gage and improvement to one existing access road (consisting of a total of 1.7 acres of permanent ROW) would be installed within this SRMA, which would change the physical setting of the area. The change in physical setting combined with the potential change in social setting resulting in an increase of one to two encounters per day during the construction period would have only minimal impacts to recreation. After completion of construction, infrequent visitation for monitoring of the sites would not impact recreationists utilizing the SRMA.

All of the Proposed Action sites are located within the hunting range for big game (pronghorn antelope, mule deer, and elk), other furbearer animals, upland game, and mountain lions. The hunting seasons for these animals are primarily in the fall, winter, and early spring.

Construction of the Proposed Action would likely occur within this time period and would potentially have a temporary impact on recreational sport due to human activities in the area. Noise from the drilling operation and other construction activities would likely deter the animals from the Proposed Action area and hunters in the area may also encounter additional vehicles on backcountry dirt roads. The eight Proposed Action sites and immediate vicinity

from which hunters may be temporarily discouraged are minor compared to the total available hunting range in Spring Valley. After completion of construction, there would be only infrequent visitation for monitoring of the sites, which would not impact animals or hunters.

10. Soils

Although the Proposed Action sites have a relatively low slope, the majority of the sites are somewhat poorly drained and water may pond in some areas for short periods. Runoff at the sites ranges from very slow to rapid. The Proposed Action sites would be restored at the completion of construction, including replacement of any removed topsoil which would stabilize the site and minimize the potential for any future erosion. The environmental protection measure for soils described in the Proposed Action (Section II.A.5) would be followed. Since no construction activities would be performed when soils are too wet to support construction equipment, creation of excessive surface rutting is not anticipated. Soil compaction would occur only under the truck tires and use of weight-dispersing materials would minimize ruts. Soil erosion and sediment controls would be used during construction of the Proposed Action, including installation of the piezometers and associated appurtenances during periods of low flow with the minimum amount of soil disturbance necessary to complete the Proposed Action installations. Installation would be conducted with hand tools as much as possible where feasible. The water discharge from the piezometer development process would be pumped directly into a water tank and transported to private property and released. Thus, no impacts to soils from the Proposed Action are anticipated.

11. Special Status Species (Federally Listed, Proposed and Candidate Species; State Protected Species; and BLM Sensitive Species)

No impacts to Ute Lady's tresses are anticipated, since suitable habitat for these species no longer exists at the Proposed Action spring sites. To minimize potential impacts to potential White River catseye habitat near the access road to The Seep and Blind Spring and to pygmy rabbit habitat near Layton Spring, all disturbance would be restricted to the authorized ROW, and vegetation would be crushed to preserve the natural seed bank.

Loggerhead shrike was observed at both Rock Spring and W Spring Valley Complex 1. The breeding period for this species ranges from mid-April through early August. The environmental protection measures for migratory birds included in the Proposed Action (Section II.A.5) would also apply to loggerhead shrike. Since no construction activity would occur within the nesting season without prior surveys and guidance from the BLM, no impacts are expected to loggerhead shrike.

The northern leopard frog has been documented at W Spring Valley Complex 1 and South Millick Spring. Environmental protection measures have been included in the Proposed Action for northern leopard frog (Section II.A.5). Due to the small size of the Proposed Action facilities, the temporary nature of the installation activities, and the biological monitoring included in the Proposed Action, impacts to the northern leopard frog are not anticipated.

The Baking Powder Flat blue butterfly exists in the general area of Blind Spring. However, the butterfly's host plant (Shockley buckwheat) is not found within the Proposed Action area. As described for ACEC in Section IV.A.1 above, the environmental protection measure for vegetation, as described in Section II.A.5 would be implemented to minimize impacts to the host plant habitat.

An active sage grouse lek was observed approximately 1.3 miles east of The Seep. The best management practice guidelines to manage sage grouse populations and their habitats restrict activities within a 2-mile radius of active sage grouse leks from March 1 through May 15. Proposed Action activities may occur within this date range, therefore measures were included in Section II.A.5 for preconstruction surveys and authorization from the BLM. Impacts to sage grouse are therefore not anticipated. The environmental protection measures included in the Proposed Action for vegetation (Section II.A.5) would also minimize potential impacts to sage grouse habitat at Layton Spring, 4WD Spring, W Spring Valley Complex 1, South Millick Spring, and Willow Spring.

12. Vegetation (including Wetlands/Riparian)

Vegetation would be disturbed by construction of the Proposed Action, including at the spring sites and for access roads. The environmental protection measures included in the Proposed Action for vegetation (Section II.A.5) would also minimize potential impacts to terrestrial vegetation habitat.

The wetlands and riparian areas at each of the spring sites would be minimally disturbed by construction of the Proposed Action. However, this disturbance would be of a very small area, and the health of the wetland/riparian areas would not be impacted. The existing composition, structure, and cover of riparian vegetation would be maintained at each site during installation and monitoring activities to the extent possible. There may be very limited groundwater pumping during installation of the piezometers, but this would be only for a limited duration (less than 6 hours) as needed to remove influences of drilling and obtain a groundwater chemistry sample. Any localized groundwater drawdowns would occur within the immediate vicinity of the piezometers and these drawdowns would quickly recover at the end of pumping. This would not impact the wetlands/riparian vegetation at the springs.

13. Visual Resource Management

The Proposed Action is consistent with uses within VRM Class 3 and VRM Class 4. There would be a temporary visual impact during construction and drilling activities, due to the presence of the truck-mounted drill rig and associated vehicles and equipment. At the completion of construction activities, the vehicles and equipment would be removed from the sites and only the scientific equipment would remain.

The completed piezometers and associated appurtenances would be a tan or gray color and would blend into the surrounding landscape due to size and color, and therefore would not be readily visible from the road. Overall, contrasts to the basic landscape would be evident, but would remain secondary to the existing landscape. The Proposed Action therefore, would partially retain the existing character of the landscape with only moderate changes and would meet VRM Class 3 management objectives and therefore also VRM Class 4 management objectives. As a result, the Proposed Action would have no impact on visual resource management.

14. Water Resources (Water Rights)

There would be no impacts to groundwater quality from the Proposed Action. Groundwater may be pumped for a short duration (less than 6 hours) for development of the piezometers and to collect water chemistry sample. This may result in a short-term and localized groundwater drawdowns in the immediate vicinity of the piezometers, however, any drawdowns would

quickly recover at the completion of piezometer development. The proposed piezometers are not groundwater production wells, and are too small to be utilized for groundwater production.

The currently level of disturbance at the springs is high due to livestock uses, diversions, drought and the occurrence of non-native species. Environmental protection measures included in the Proposed Action would ensure hazardous materials are controlled and accidental spills contained. The Proposed Action would not change the normal or high water flows, cause permanent water flow relocation or redirection, or cause flooding or erosion downstream or upstream of the Proposed Action sites. During construction, water at some of the sites would be temporarily rerouted and soil would temporarily be disturbed, however once construction is complete the springs would return to their original condition. As a result, no measurable impacts on water resources from the Proposed Action are anticipated.

15. Wildlife

Larger wildlife common to the Proposed Action area and various bird species could be disturbed or temporarily frightened away as a result of the increased activity and equipment during construction. Smaller-sized species of wildlife, such lizards or small mammals, would also likely be frightened away from the sites during construction, but some may inadvertently be crushed during construction activities. Because of the spring water, wildlife may be drawn to the sites during construction especially during the evening when there would be no increased human activity in the area. These disturbance impacts would be temporary, and wildlife would return to the areas after completion of the construction activities. Thus, no long term impacts to wildlife are anticipated.

The total amount of wildlife habitat potentially affected at the Proposed Action sites would be 3.97 acres of permanent ROW, which includes both the piezometers and associated appurtenances sites and access roads. The amount of habitat that would be disturbed by the Proposed Action is negligible compared with the total available habitat in Spring Valley. Due to the limited duration of construction and the amount of available habitat, there would be negligible impacts to wildlife habitat resulting from the Proposed Action.

Due to the small size and installation location of the proposed piezometers and associated appurtenances, life cycle movements of indigenous aquatic life are not expected to be disrupted. Additionally, there are no indigenous fish species located in Spring Valley, so the Proposed Action would have no effect on their movement. Ecological evaluations of the aquatic ecosystems of six of the eight piezometer sites by BIO-WEST, Inc. found no fish within any of the six sites surveyed. No National Oceanic and Atmospheric Administration-designated marine sanctuaries, National Estuarine Research Reserves, state natural heritage sites, outstanding national resource waters, or other waters officially designated by a state as having particular environmental or ecological significance occur at the Proposed Action sites. Survey work conducted in Spring Valley has not indicated any areas of freshwater shellfish bed populations. For these reasons, impacts to aquatic wildlife are not anticipated.

B. No Action Alternative

Under the No Action alternative selection, none of the above-described impacts would occur to the potentially affected resources.

C. Cumulative Impacts

Cumulative impacts are those that result from the incremental impact of the Proposed Action when added to other past, present, and reasonably foreseeable future actions. The purpose of the cumulative analysis in the EA is to evaluate the addition of the Proposed Action's contributions to cumulative impacts. A cumulative impact is defined under federal regulations as follows:

“...the impact on the environment which results 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. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.” (40 CFR 1508.7).

A cumulative impacts analysis is limited to those past, present, and reasonably foreseeable future actions that involve effects on a resource value that overlaps with the Proposed Action's effects on that same resource value. A cumulative impact analysis area is identified for each resource value potentially impacted by the Proposed Action.

1. Past, Present and Reasonably Foreseeable Future Actions

Past/Present: SNWA has installed and continues to monitor testing wells in northern Spring Valley (N-82765) and southern Spring Valley (N-82357). These wells and the hydrologic testing were completed prior to initiation of the Proposed Action, and do not overlap in the same site area as the Proposed Action. This project resulted in the disturbance of approximately 23 acres.

Past/Present: SNWA has installed and continues to monitor hydrological and meteorological stations on BLM lands in northern Spring Valley (N-83341) and southern Spring and Snake valleys (N-83342). One of these sites is located within the Baking Powder Flat ACEC. These stations record scientific information. The ROW for all these stations within Spring Valley totals approximately 5 acres; the site within the Baking Powder Flat ACEC is approximately 0.25-acre. The site locations do not overlap those of the Proposed Action.

Past/Present/Reasonably Foreseeable Future: White Pine County conducts periodic maintenance of county roads in Spring Valley. This maintenance is conducted as needed, and includes grading and leveling of the existing roads. This action does not result in additional land disturbance within Spring Valley. It is unknown whether any road maintenance may occur at the same time as construction of the Proposed Action.

Past/Present/Reasonably Foreseeable Future: UNLV has installed three evapotranspiration sites on BLM land in Spring Valley (N-78531). One of these sites is located within the Baking Powder Flat ACEC. SNWA continues to collect scientific information at two of the sites, which consist of an evapotranspiration tower, weather station, and well. The ROW for each of these sites is 30 acres, of which an area of only approximately 10 square feet is disturbed. The site locations do not overlap those of the Proposed Action.

Past/Present/Reasonably Foreseeable Future: Desert Research Institute has installed and continues to monitor three evapotranspiration sites on BLM land in Spring Valley. Each of these sites contains an evapotranspiration tower, weather station, and well. The amount of land that was disturbed at these sites would be approximately 10 square feet. The site locations do not overlap those of the Proposed Action.

Past/Present/Reasonably Foreseeable Future: SNWA has completed the installation of an irrigation well at the Harbecke Ranch (N-84215). An associated pipeline is currently under construction, but does not overlap in the same site area as the Proposed Action. This action resulted in a total disturbance of approximately 4.6 acres. The site location does not overlap the Proposed Action.

Reasonably Foreseeable Future: SNWA anticipates installing two monitoring wells in Spring Valley and three in Hamlin Valley (N-84333) in accordance with the Stipulated Agreement between SNWA and Department of Interior Agencies to resolve water right protests in Spring Valley. Construction of those wells is planned for the fall of 2009, and the construction time period may overlap that of the Proposed Action. The site locations do not overlap those of the Proposed Action. The portion of this action within Spring Valley would result in the disturbance of approximately 4 acres.

Reasonably Foreseeable Future: SNWA anticipates installing two monitoring wells near Shoshone Ponds. Construction of these wells is planned for late 2009, and the construction time period may overlap that of the Proposed Action. The site locations do not overlap those of the Proposed Action. This action would result in the disturbance of 2.5 acres.

Reasonably Foreseeable Future: SNWA anticipates that additional hydrologic monitoring and testing wells may be requested at other locations within Spring Valley in the future. However, the specific locations, amount of disturbance, and construction schedules for these other wells are not currently known.

Reasonably Foreseeable Future: Recreational use of public land managed by BLM in the project area has continued to increase in recent years. Off-highway vehicle (OHV) use is enjoying popularity across the west with an increase in OHVs in eastern Nevada. Population growth in Clark County, Nevada, along with reduced access for OHV use in the Mojave Desert area have led to greater use of BLM-administered land in eastern Nevada. Special recreation permits (motorized and non-motorized) would be required from BLM for such activities as OHV races, mountain bike races, and equestrian events. The amount of land disturbance associated with authorized and unauthorized OHV travel off existing roads and trails in Spring Valley is not currently known.

Reasonably Foreseeable Future: SNWA has applied to the BLM for ROWs to construct and operate a groundwater development project. The GWD Project is currently undergoing environmental analysis. Construction of the GWD Project would not overlap in time with construction of the Proposed Action. Per the Stipulated Agreement, SNWA is required to establish hydraulic and biologic monitoring programs. The Proposed action would meet some of the requirements of the Stipulated Agreement, and may be used for monitoring of the GWD Project. The GWD Project is anticipated to have approximately 2,605 acres of disturbance (both temporary and permanent ROW) within Spring Valley. Restoration measures are anticipated to be required as part if a ROW grant is issued for this action.

2. Issues and Resource Values

The following resources or concerns have the potential to be impacted by the Proposed Action and thus potentially may cumulatively be impacted in conjunction with other past, present, and reasonably foreseeable future actions: ACECs, non-native, invasive species and noxious weeds, range / livestock, recreation, special status species (federally listed, proposed and candidate

species, state protected species and BLM sensitive species), vegetation (including wetland and riparian), and wildlife.

ACEC: The cumulative resource analysis area for ACECs is the Spring Valley watershed. Blind Spring is located within the Baking Powder Flat ACEC in southern Spring Valley. One of the UNLV evapotranspiration station sites, and a hydrological and meteorological station installed by SNWA, are also located within this ACEC. Proposed Action construction and monitoring activities would occur within the boundary of the granted ROW (approximately 0.27 acre permanent ROW). As a result, a potential cumulative total of 10.57 acres would be disturbed within the ACEC. The 10.57 acres is negligible compared to the total 13,640 acres within the ACEC, therefore no cumulative impacts are anticipated.

Non-native, Invasive Species and Noxious Weeds: The cumulative resource analysis area for weeds is the Spring Valley watershed. The Proposed Action along with county road maintenance, OHV use, and vehicle traffic associated with ongoing monitoring of other present and reasonably foreseeable future projects, have the potential to increase the spread of noxious or invasive weeds. Measures to minimize the spread of noxious and invasive vegetation are and would continue to be implemented in accordance with approved ROW grants and roadwork authorizations, and substantive cumulative increase in noxious or invasive weeds is not anticipated.

Range / Livestock: The cumulative resource analysis area for range / livestock grazing is the Spring Valley watershed. The BLM currently manages grazing allotments in Spring Valley. Permittees utilize several grazing allotments in Spring Valley for sheep and cattle. BLM manages livestock grazing on public lands under the principle of multiple use and sustained yield, and in accordance with applicable land use plans. The identified past/present/reasonably foreseeable future projects would result in the disturbance of approximately 2,644 acres, the majority of which would be associated with the future GWD Project. The addition of the Proposed Action would incrementally increase the amount of vegetation disturbance. However, measures to restore habitat as part of approved ROW grants would minimize or eliminate impacts on grazing allotments and permittees.

Recreation: The cumulative resource analysis area for recreation is the Spring Valley watershed. Construction of the Proposed Action may occur at the same time as County road maintenance, OHV use, and construction of the monitoring wells for the Spring Valley Stipulated Agreement and at Shoshone Ponds. The site locations of these projects do not overlap, but there would be an incremental temporary increase in disturbance associated with simultaneous activities. Due to the short-term nature of the construction period for each well site (30 days or less) and amount of land available within the valley for recreationists and hunters, substantive cumulative recreation impacts are not expected. Following construction completion, the social settings would return to pre-construction levels and thus, no long-term cumulative impacts on recreation are anticipated.

Special Status Species (Federally Listed, Proposed, and Candidate Species, State Protected Species and BLM Sensitive Species): The cumulative resource analysis area for special status species is the Spring Valley watershed. The Proposed Action, along with the other past/present/reasonably foreseeable future projects, have the potential to disturb suitable habitat for the White River catseye, pygmy rabbit, Baking Powder Flat blue butterfly's host plant (Shockley buckwheat), and greater sage-grouse. However, with the exception of the future

GWD Project, the amount of disturbance is minimal compared with the available suitable habitat for these sensitive species in the area. Construction of the Proposed Action occurring at the same time as OHV use, County road maintenance, and construction of other monitoring wells, has the potential to disturb larger wildlife and frighten away bird and butterfly species in the area due to the increased noise levels. This Proposed Action as well as other past, present, or reasonably foreseeable future projects would include mitigation measures as part of approved ROW grants that eliminate or reduce impacts to sensitive species and their habitat. Substantive cumulative impacts are therefore not anticipated.

Vegetation (including Wetlands/Riparian): The cumulative resource analysis area for vegetation is the Spring Valley watershed. The identified past/present/reasonably foreseeable future projects would result in the disturbance of approximately 2,644 acres, the majority of which would be associated with the future GWD Project. The addition of the Proposed Action would incrementally increase the amount of vegetation disturbance. However, measures to restore habitat as part of approved ROW grants would eliminate or reduce impacts on vegetation.

Wildlife: The cumulative resource analysis area for wildlife is the Spring Valley watershed. Construction of the Proposed Action occurring at the same time as OHV use, county road maintenance, and construction of other monitoring wells, has the potential to disturb large wildlife and frighten away birds species in the area due to the increased noise levels. These impacts would be temporary and after completion of the activities the noise would return to pre-construction levels.

D. Proposed Mitigation Measures

Appropriate mitigation has been included as part of the Proposed Action and no additional mitigation is proposed based on this environmental analysis.

E. Suggested Monitoring

BLM and SNWA would monitor the Proposed Action sites for the continued operation of the piezometers and associated appurtenances until the piezometers and associated appurtenances have been removed. Noxious and invasive weed populations would also be monitored for at the sites.

V. REFERENCES

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VI. GLOSSARY

Alluvial – the term used for describing an object composed of alluvium.

Alluvium – a general term for clay, silt, sand, gravel or similar unconsolidated, eroded material deposited during comparatively recent geologic time by a stream or other body of moving water.

Anemometer – a device for measuring wind speed.

Annulus – the opening between an outer and inner cylindrical body, often used to describe the space between the drill pipe and the surface of the borehole.

Appurtenances – an adjunct or accessory to the main object/piece of equipment being identified.

Aquifer – an underground layer of water-bearing permeable rock or unconsolidated materials (gravel, sand, silt, or clay) from which groundwater can be usefully extracted using a water well.

Bermed – to create a level space, shelf, or raised barrier separating two areas.

Bird ladder – a ladder designed to provide birds with a way to climb out of the inside of a trough, in case they get stuck in the water.

Carbonate (CO₃) – a mineral compound or sediment formed from the precipitation of carbonates of calcium (Ca), magnesium (Mg), or iron (Fe) (i.e. limestone or dolomite).

Completion string – the installed well casing within the borehole.

Data logger – an electronic device that records data over time.

Discharge gage – a device used to measure the rate of flow.

Emergent – with regard to aquatic vegetation, a plant having all of or a portion of its stem, leaves, etc., extending above the surface of the water.

Flume – an artificial channel for conducting water and can be used to measure the rate of flow.

Gas purge system – a system used to measure stream flow by recording water height behind a man-made or natural dam or channel. Air is conveyed through an orifice line to a point below the water level. An orifice line is a tube that is placed below water and used to convey air under pressure in order to determine water height. The amount of pressure needed to release an air bubble is related to the water height above the tube. Water height is used to determine stream flow.

Graduated metal staff plate – a device used to measure volume or rate of flow by the rise or drop of the media (e.g. water).

Hollow stem auger – a hollow spherical or spiral drilling tool usually 5 feet long with varying widths and used for drilling boreholes.

Hollow stem auger method – a drilling method using a hollow stem auger in order to convey material from the subsurface to the surface as the tool is rotated into the subsurface to advance the borehole. The center of the auger is hollow to allow inner drive rods and center plug used for advancing the auger to be pulled out, leaving the hollow augers in place that hold the borehole open for sediment sampling and well installation.

Hydrologic basin – a defined geographic area encompassing the drainage area or catchment area of a stream, its tributaries or portion thereof. For the purpose of this document, the basins are defined by the State Engineer's Office, Department of Conservation and Natural Resources, Division of Water Resources.

Hydrostatic pressure – the pressure exerted by a fluid at equilibrium at a given point within the fluid, due to the force of gravity. Hydrostatic pressure increases in proportion to depth measured from the surface because of the increasing weight of fluid exerting downward force from above.

Indigenous – native to that particular region or area.

Lacustrine sediments – sediment deposited in a lake environment.

Lek – an area or gathering where male wildlife assemble during the mating season and engage in competitive displays that attract female wildlife.

Lithologic – rock characteristics including color, structure, mineral composition, grain size, and arrangement of its component parts.

Orifice – an opening, usually used in terms of monitoring, such as a spring discharge location or the end of an air line used to measure water height in determining stream flow rates.

Orifice line – a tube that is placed below water and used to convey air under pressure in order to determine water height. The amount of pressure needed to release an air bubble is related to the water height above the tube. Water height is used to determine stream flow.

Pedestrian survey – also called surface survey or reconnaissance survey, involves walking the surface of a site or large region in an organized pattern.

Perennial – occurring throughout the year or continuously or lasting a relatively long time.

Piezometers – in groundwater monitoring terms it is a relatively shallow smaller diameter pipe used for measuring water levels. The piezometer is usually constructed similar to a monitoring well.

Playa – a nearly level area at the bottom of an undrained desert basin that may be temporarily covered with water during or after prolonged, heavy rains.

Propagule – any plant material used for the purpose of plant propagation, such as a seed, spore, or a part of the vegetative body capable of independent growth if detached from the parent.

Repositories – a place where data is stored.

Scrub – dense vegetation consisting of stunted trees or bushes. May refer to desert scrub or sagebrush scrub.

Split spoon sample method – a method for collecting subsurface soil samples using brass rings within a split steel pipe that is pounded with a retrievable hammer.

Staff gage – a type of ruler used to measure water height in a water body. Water height can be used to determine water volume and rate of flow.

Static water level – level of water in a well or an aquifer when no water is being removed by pumping activities or internal hydrostatic pressure (i.e., artesian) flowing conditions.

Stilling well – a water level measurement housing that consists of a vertical pipe-shaped enclosure that is placed vertically on or near a stream bank and used to dampen water level fluctuation and protect the float sensor components. Water level height is used to determine stream flow.

Sump pump – a pump that removes liquid from a pit, well, or other area in which water or other liquid is collected.

Swale – the low area on a piece of land, usually moister than the adjacent higher land.

Terminus – the end or extremity of something.

Transducer – in terms of monitoring it is a device that measures water pressure. In monitoring wells it is a device that determines water levels and in surface water weirs or flumes it is a device that determines water height which determines stream flow.

V-notch weir – discharge measuring device used in open channel flows.

VI. CONSULTATION & COORDINATION

This EA was prepared at the direction of the BLM, Ely District Office, Ely, Nevada, by SNWA. The following is a list of individuals responsible for preparation of the EA.

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Allen Cattell – Natural Resource Project Manager

Carol Watson – Biologist

Don Jolly – Principal Archaeologist

Attachment 1
Maps and Site Photographs

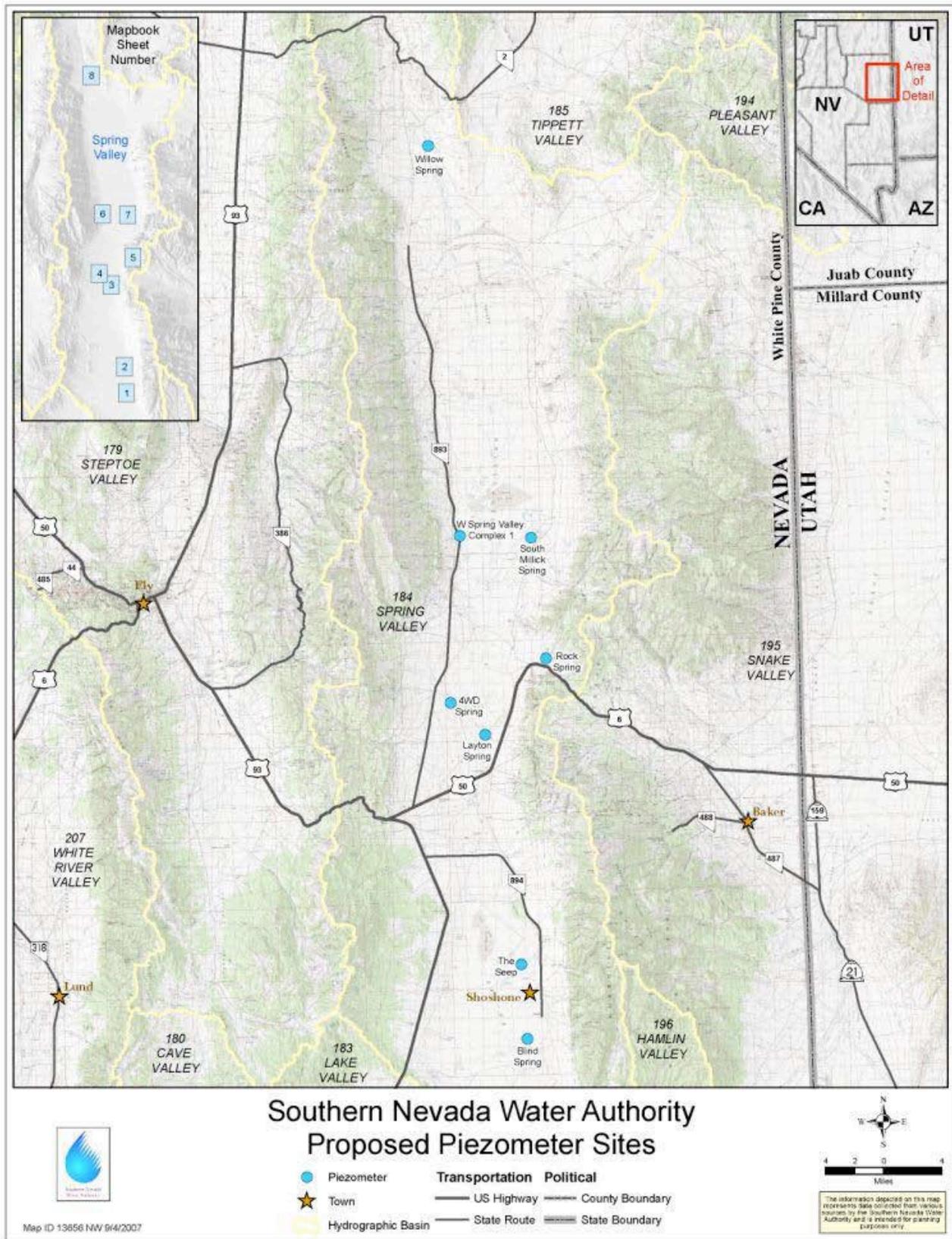
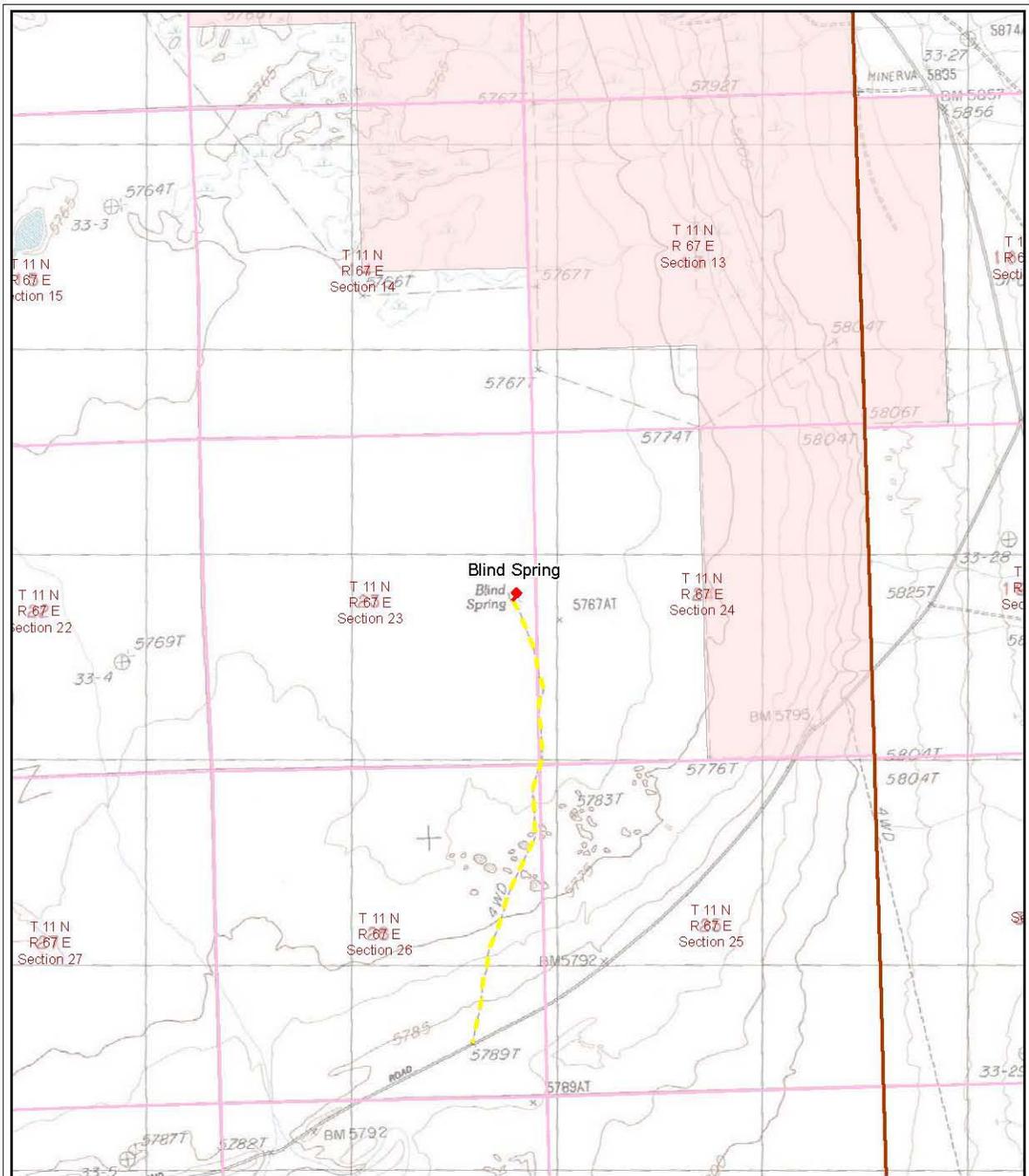


Figure 1: General Location Map



Southern Nevada Water Authority
Proposed Site
Blind Spring



Map ID 15304 NWPL 10/08/2008

■ Proposed Right-of-Way
- - - Proposed New Access Road

- - - Existing Access Road
 (Depicted on USGS Topographic Map)

Private
 Bureau of Land Management



1 inch = 2,000 feet

The information depicted on this map represents data collected from various sources by the Southern Nevada Water Authority and is intended for planning purposes only.

Sheet 1

Figure 2: Blind Spring Topo View

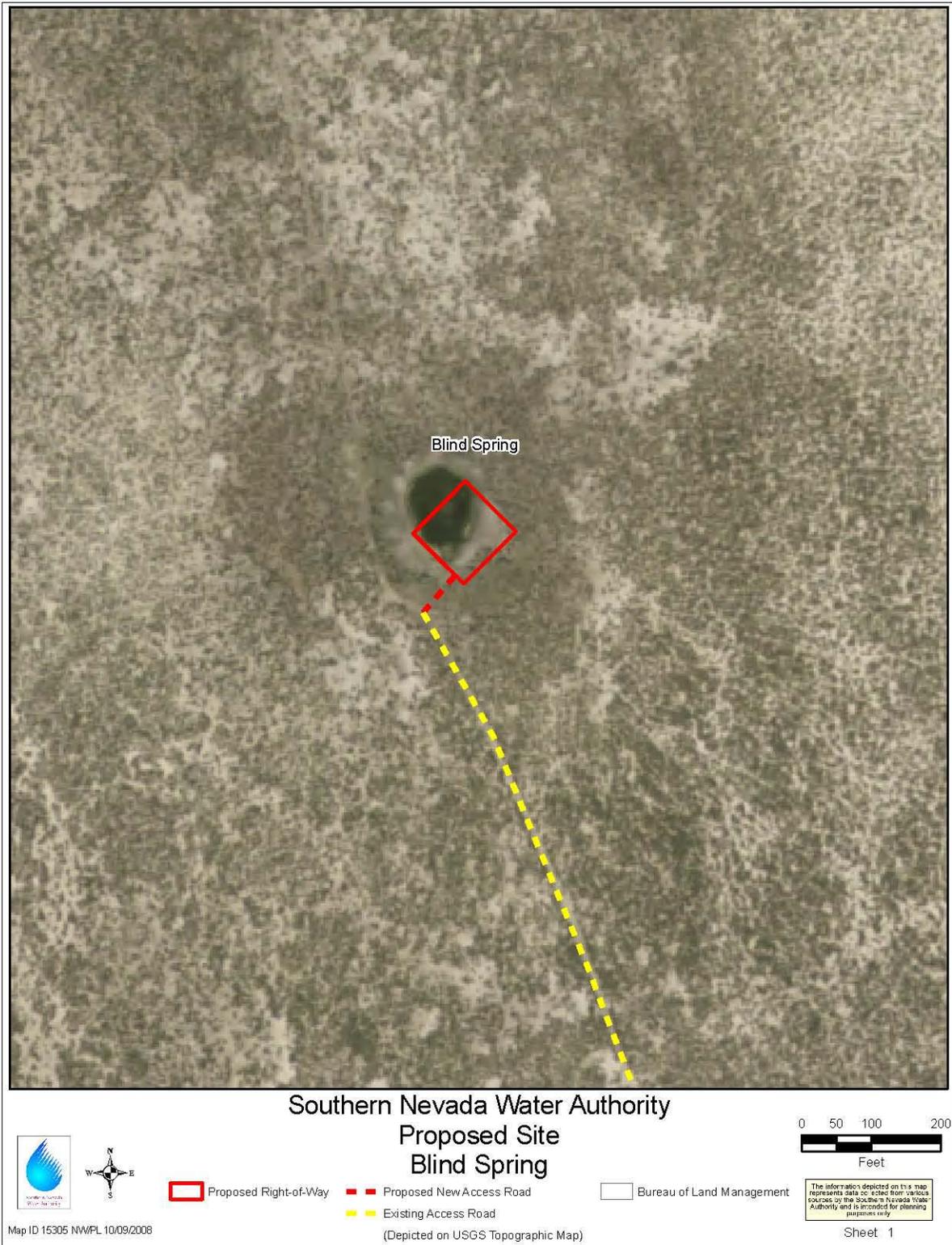
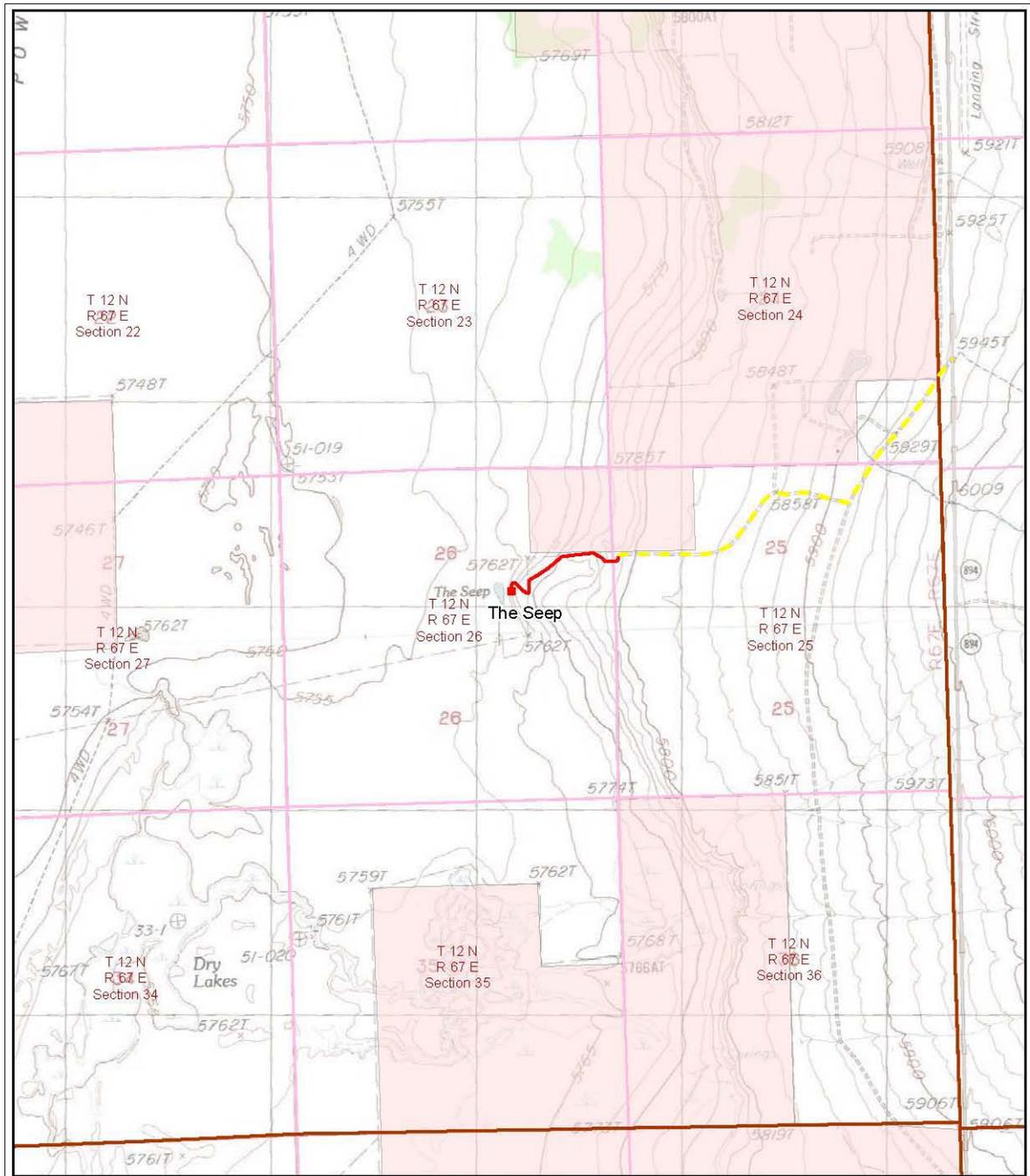


Figure 3: Blind Spring Aerial View



Southern Nevada Water Authority
 Proposed Site
 The Seep



Map ID 15304 NWPL 10/08/2008

- Proposed Right-of-Way
 - Existing Access Road
 - Private
 - Proposed New Access Road
 - Bureau of Land Management
- (Depicted on USGS Topographic Map)



1 inch = 2,000 feet

The information depicted on this map
 represents data collected from various
 sources by the Southern Nevada Water
 Authority and is intended for planning
 purposes only.

Sheet 2

Figure 4: The Seep Top View

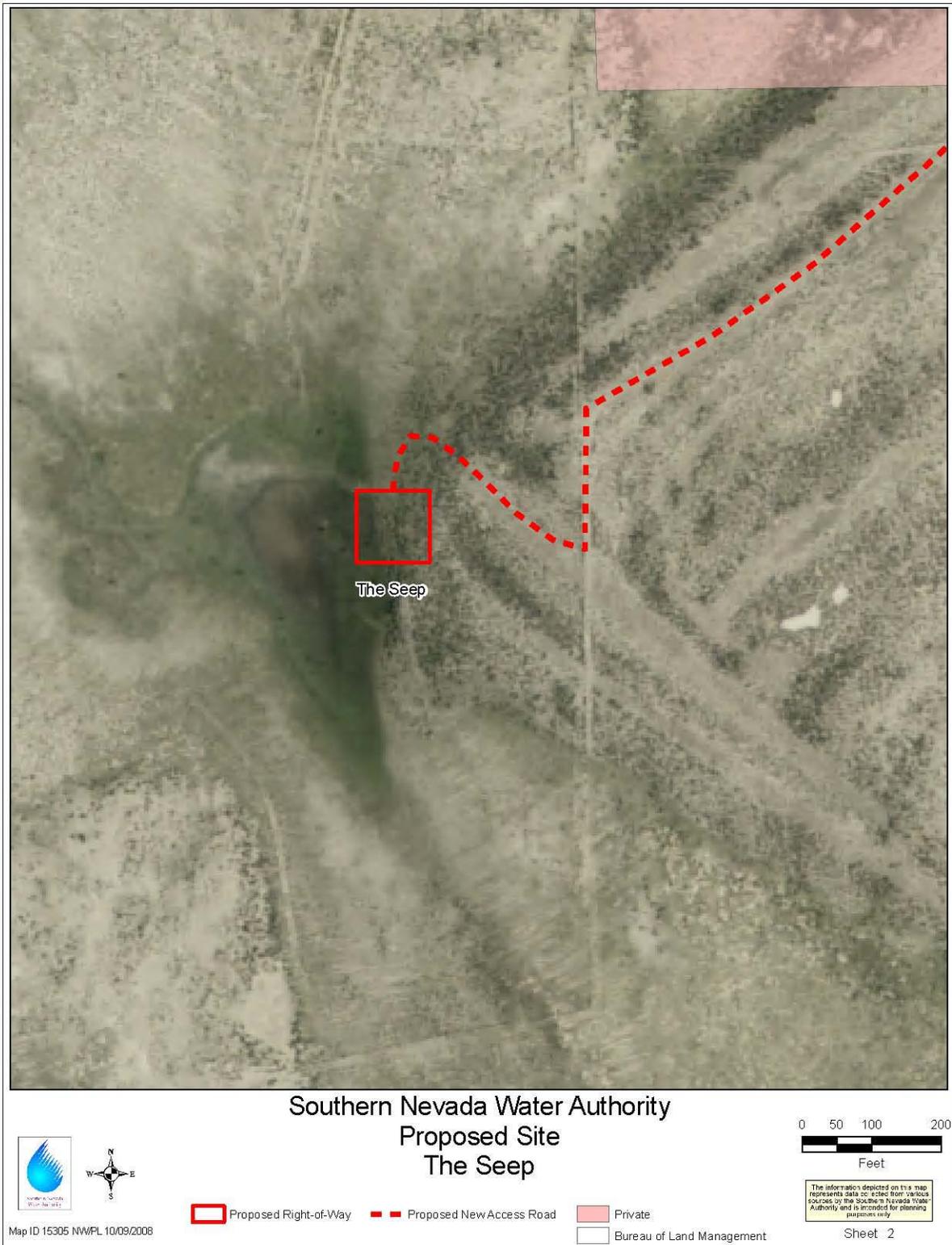
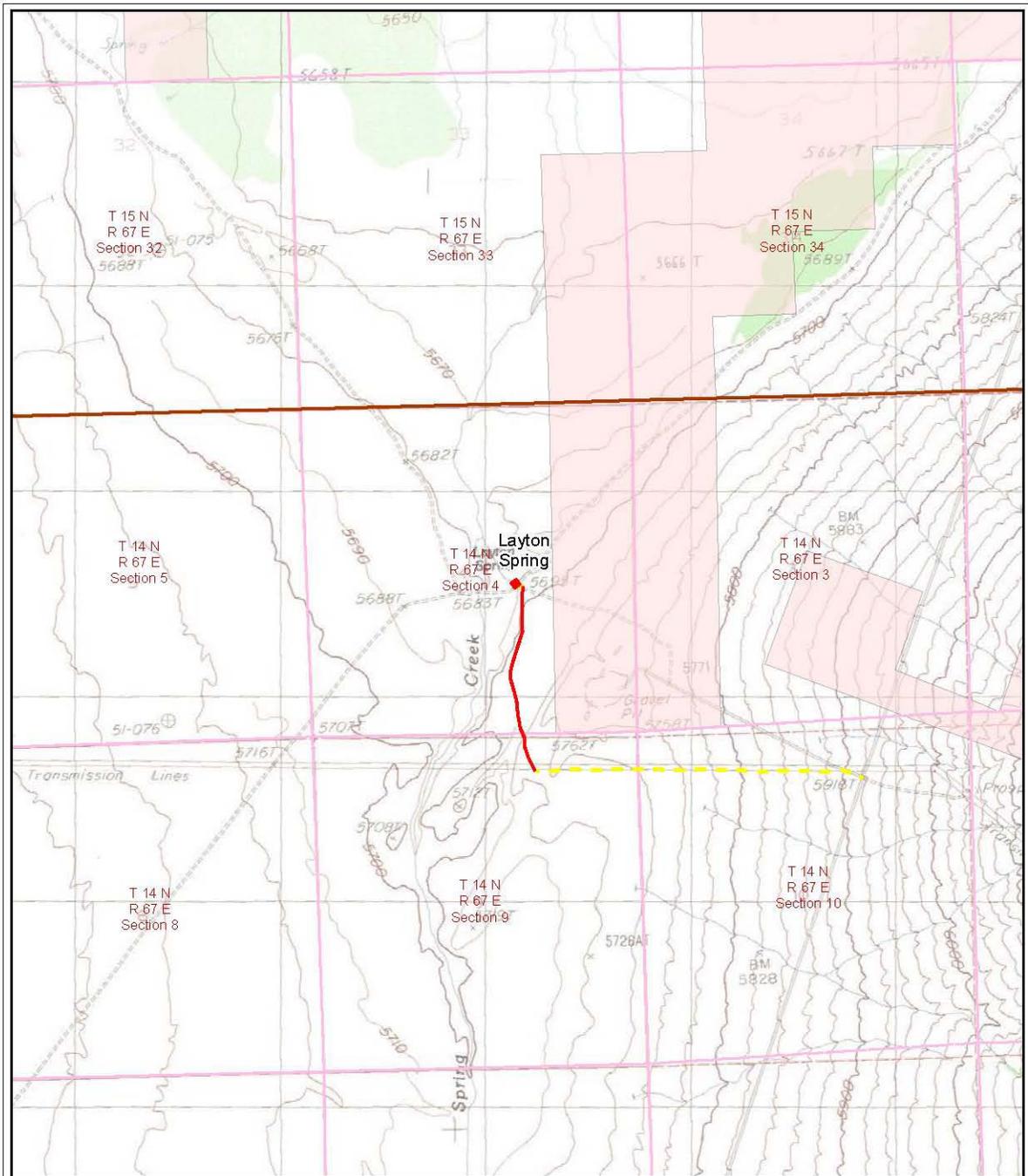


Figure 5: The Seep Aerial View



Southern Nevada Water Authority
 Proposed Site
 Layton Spring



Map ID 15304 NWPL 10/08/2008

- Proposed Right-of-Way
 - Existing Access Road
 - Private
 - Bureau of Land Management
- (Depicted on USGS Topographic Map)



1 inch = 2,000 feet

The information depicted on this map represents data collected from various sources by the Southern Nevada Water Authority and is for use for planning purposes only.

Sheet 3

Figure 6: Layton Spring Topo View

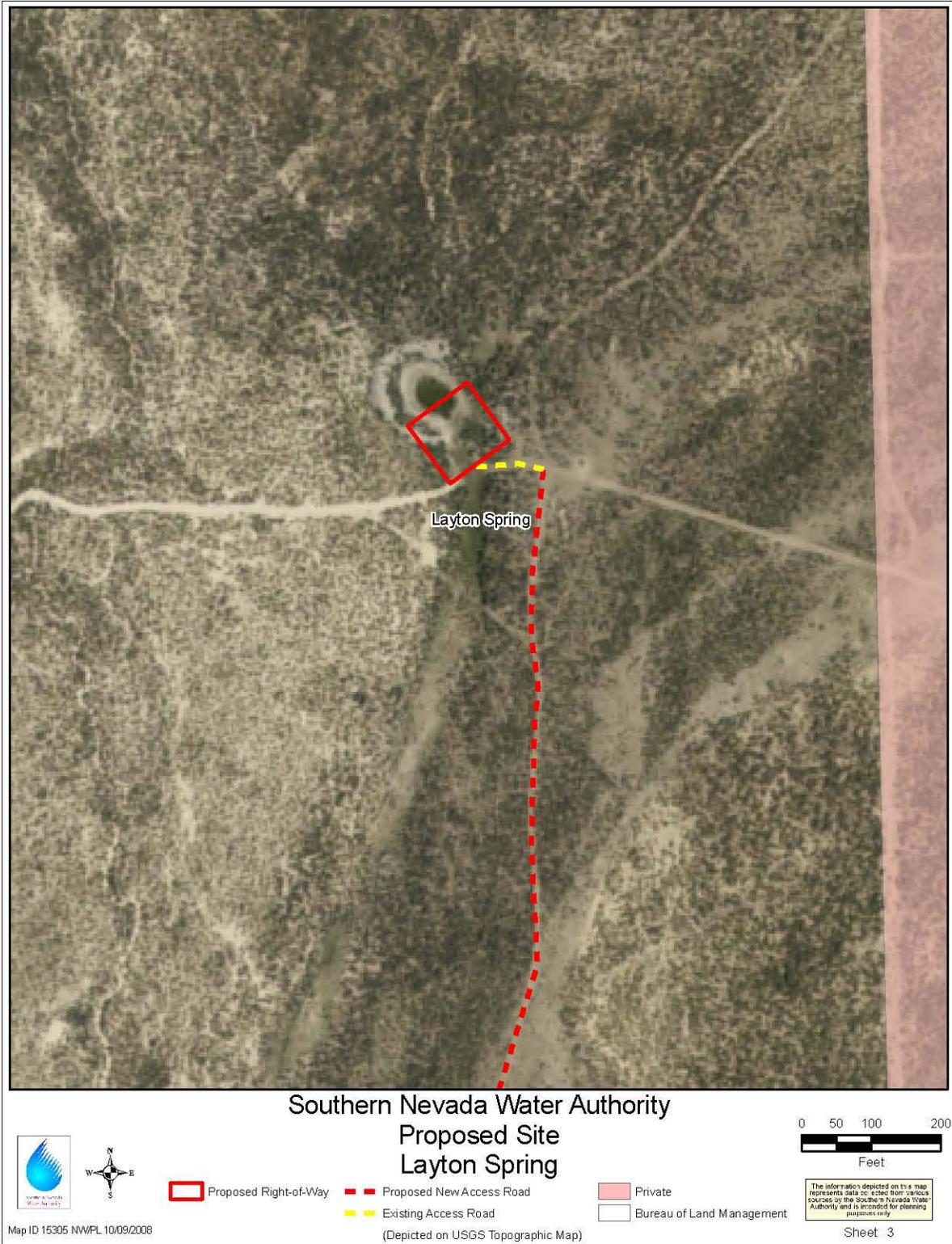
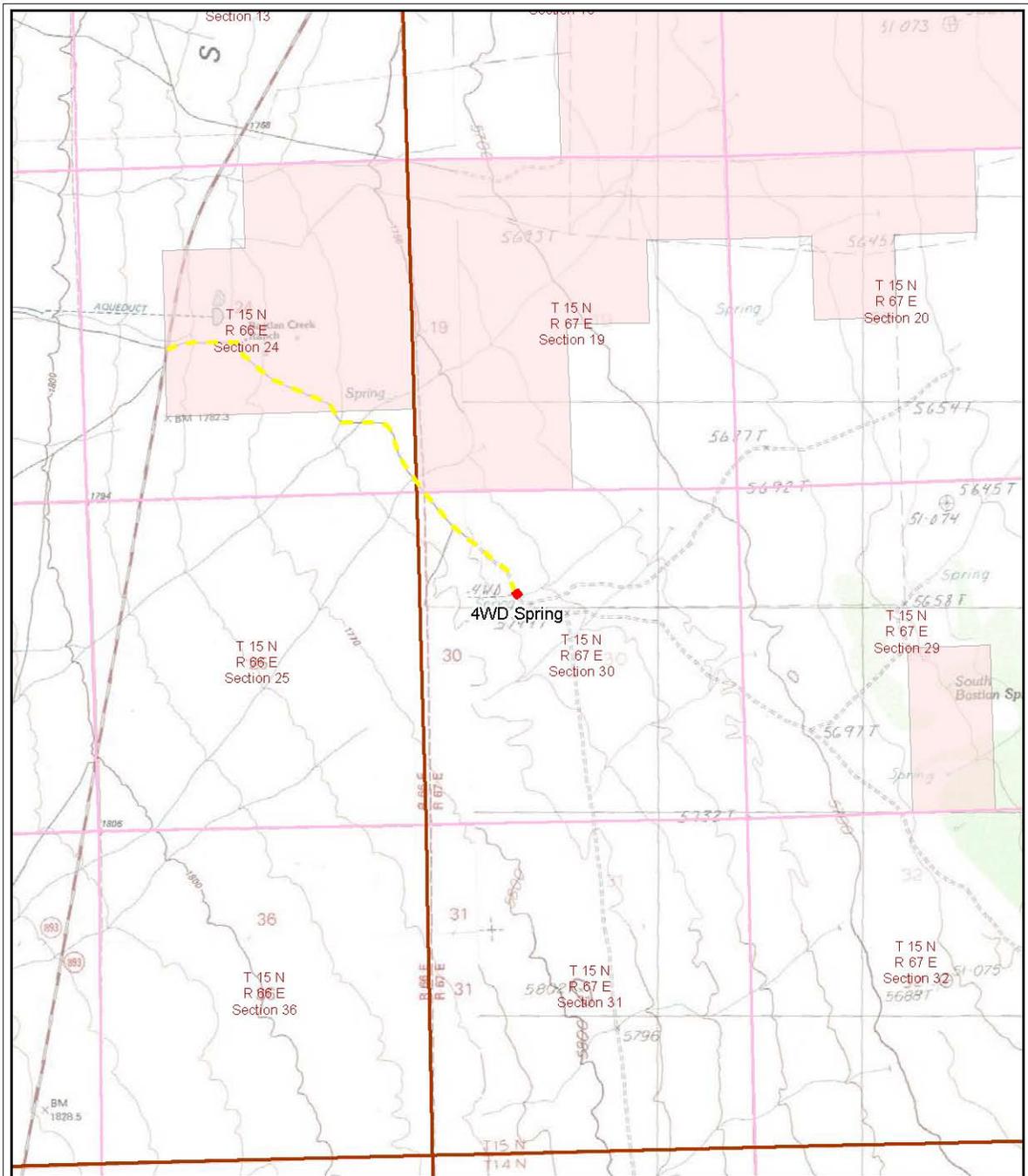


Figure 7: Layton Spring Aerial View



Southern Nevada Water Authority
 Proposed Site
 4WD Spring



Map ID 15304 NWPL 10/08/2008

- Proposed Right-of-Way
 - Existing Access Road
 - Private
 - Bureau of Land Management
- (Depicted on USGS Topographic Map)



1 inch = 2,000 feet

The information depicted on this map represents data collected from various sources by the Southern Nevada Water Authority and is not for planning purposes only.

Sheet 4

Figure 8: 4WD Spring Topo View



Southern Nevada Water Authority
 Proposed Site
 4WD Spring



Map ID 15305 NWPL 10/09/2008



Proposed Right-of-Way

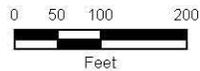


Existing Access Road



Bureau of Land Management

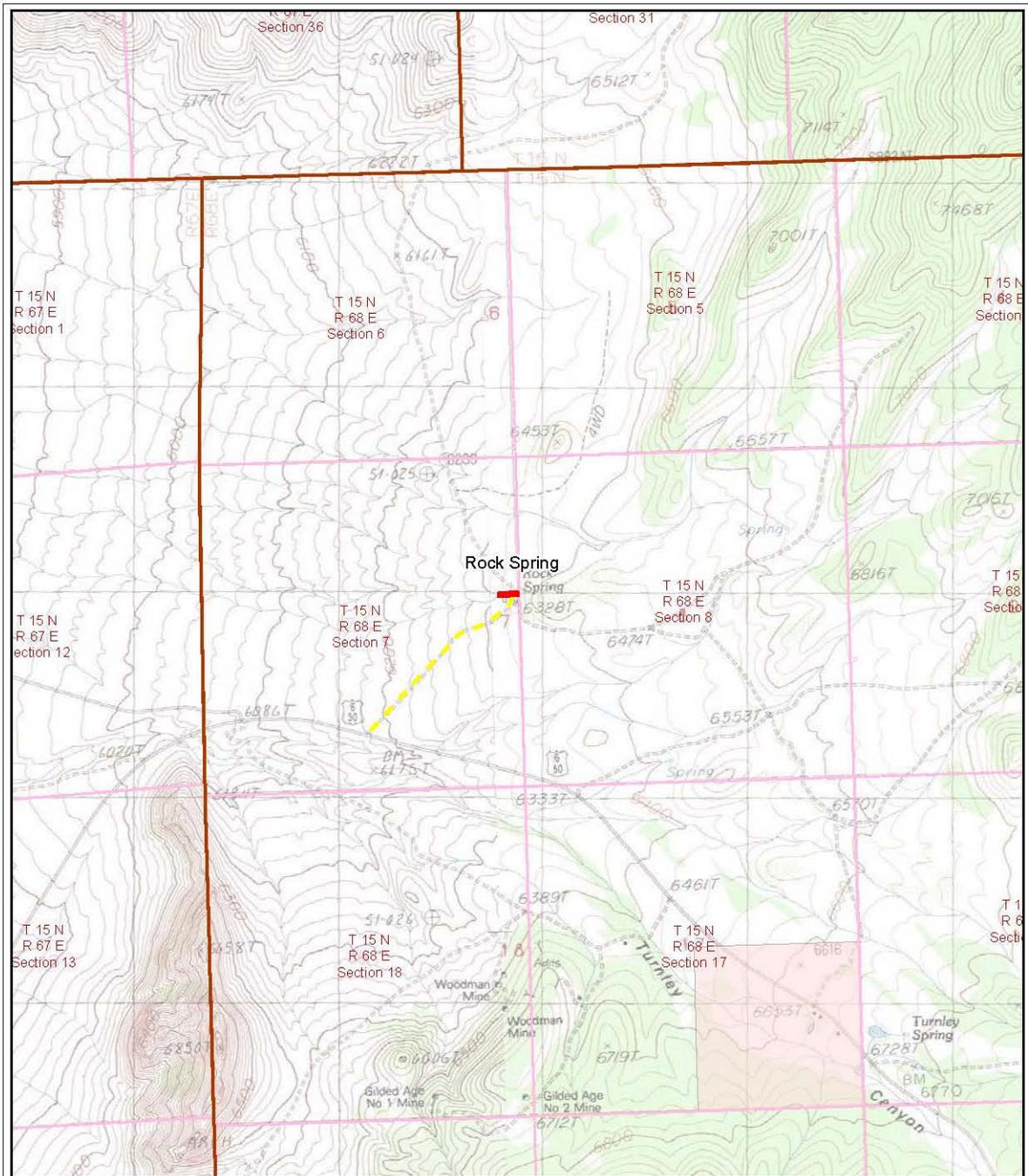
(Depicted on USGS Topographic Map)



The information depicted on this map represents data collected from various sources by the Southern Nevada Water Authority and is intended for planning purposes only.

Sheet 4

Figure 9: 4WD Spring Aerial View



Southern Nevada Water Authority
 Proposed Site
 Rock Spring



Map ID 15304 NWPL 10/08/2008

- Proposed Right-of-Way
 - Existing Access Road
 - Private
 - Bureau of Land Management
- (Depicted on USGS Topographic Map)

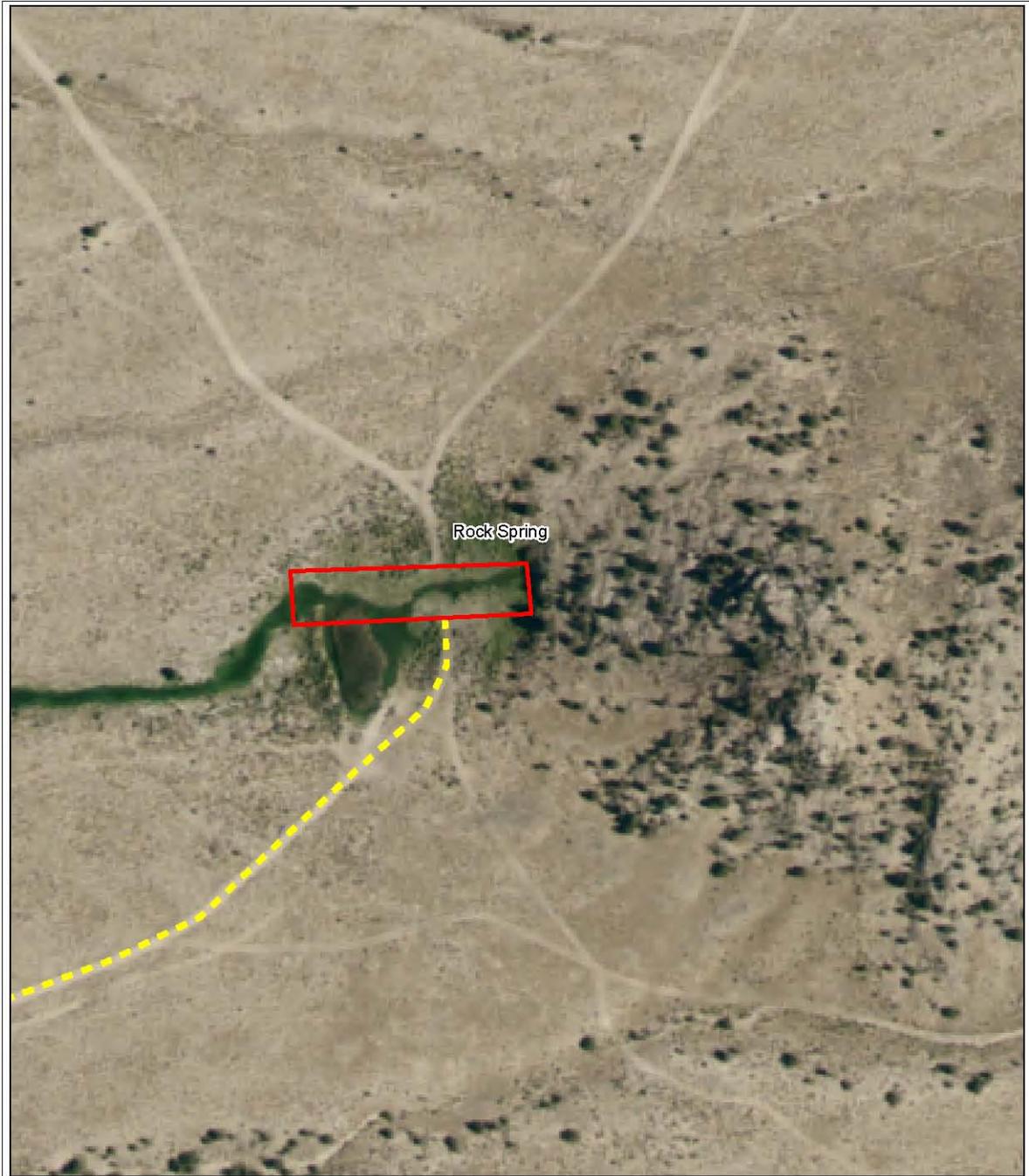


1 inch = 2,000 feet

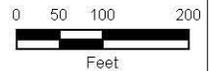
The information depicted on this map represents data collected from various sources by the Southern Nevada Water Authority and is not for planning purposes only.

Sheet 5

Figure 10: Rock Spring Topo View



Southern Nevada Water Authority
 Proposed Site
 Rock Spring



Map ID 15305 NWPL 10/09/2008

 Proposed Right-of-Way

 Existing Access Road

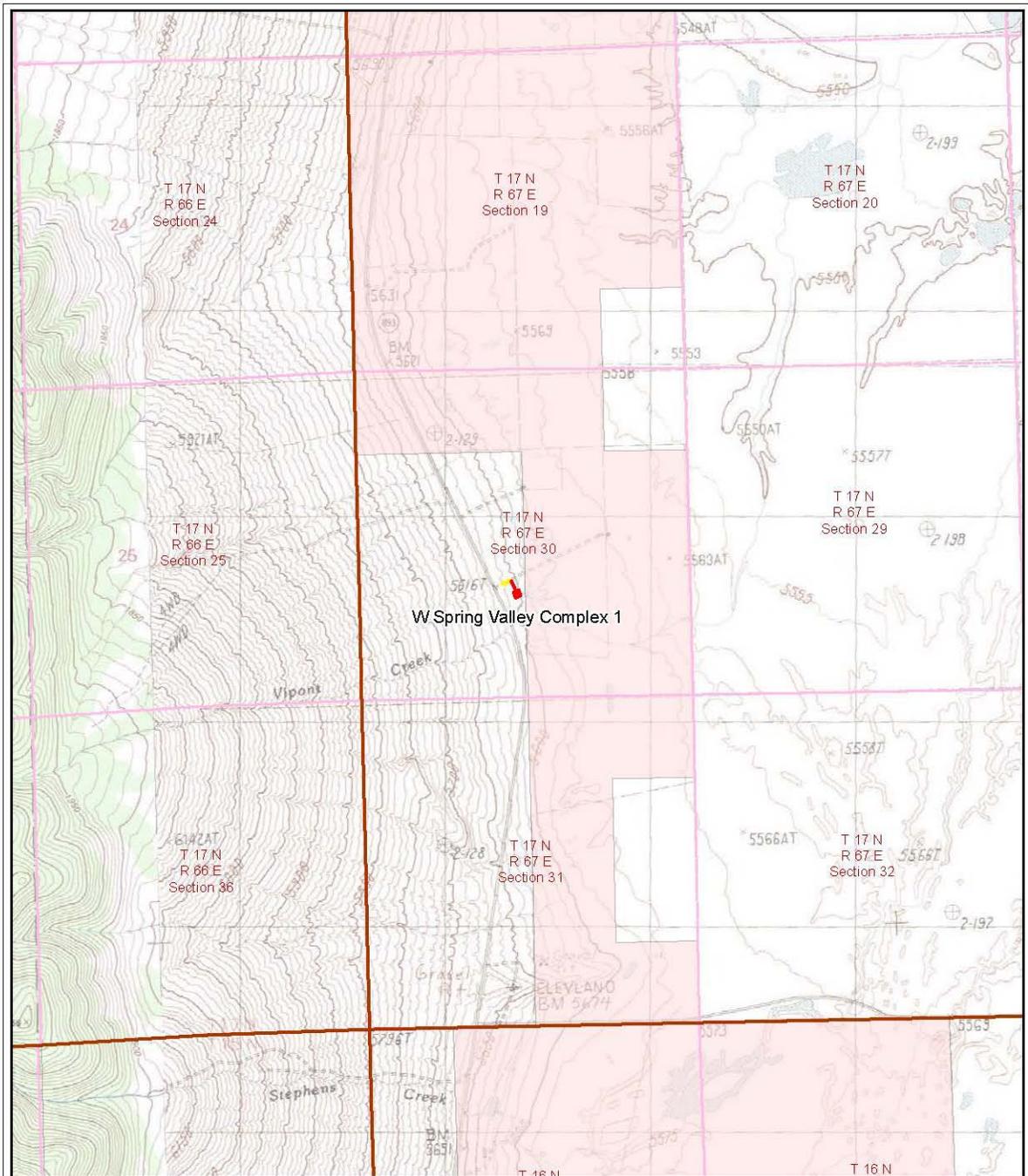
 Bureau of Land Management

(Depicted on USGS Topographic Map)

The information depicted on this map represents data collected from various sources by the Southern Nevada Water Authority and is intended for planning purposes only.

Sheet 5

Figure 11: Rock Spring Aerial View



Southern Nevada Water Authority
Proposed Site
W Spring Valley Complex 1



Map ID 15304 NWPL 10/08/2008

- | | | |
|---|--|---|
| Proposed Right-of-Way | Existing Access Road | Private |
| Proposed New Access Road | (Depicted on USGS Topographic Map) | Bureau of Land Management |



1 inch = 2,000 feet

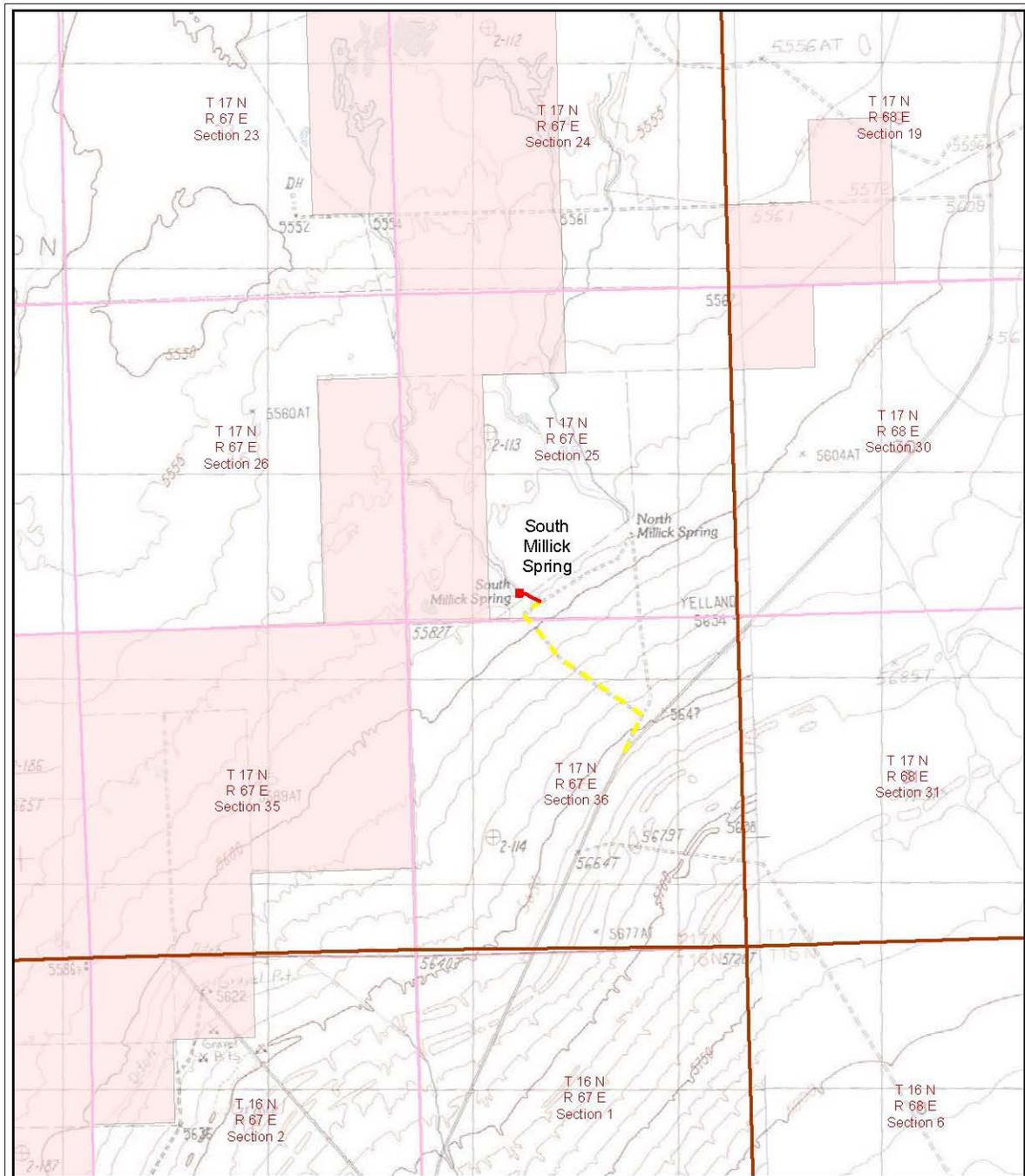
The information depicted on this map represents data collected from various sources by the Southern Nevada Water Authority and is for planning purposes only.

Sheet 6

Figure 12: W Spring Valley Complex 1 Topo View



Figure 13: W Spring Valley Complex 1 Aerial View



**Southern Nevada Water Authority
Proposed Site
South Millick Spring**



Map ID 15304 NWPL 10/08/2008

- | | | |
|--------------------------|------------------------------------|---------------------------|
| Proposed Right-of-Way | Existing Access Road | Private |
| Proposed New Access Road | (Depicted on USGS Topographic Map) | Bureau of Land Management |



1 inch = 2,000 feet

The information depicted on this map represents data collected from various sources by the Southern Nevada Water Authority and is for planning purposes only.

Sheet 7

Figure 14: South Millick Spring Topo View

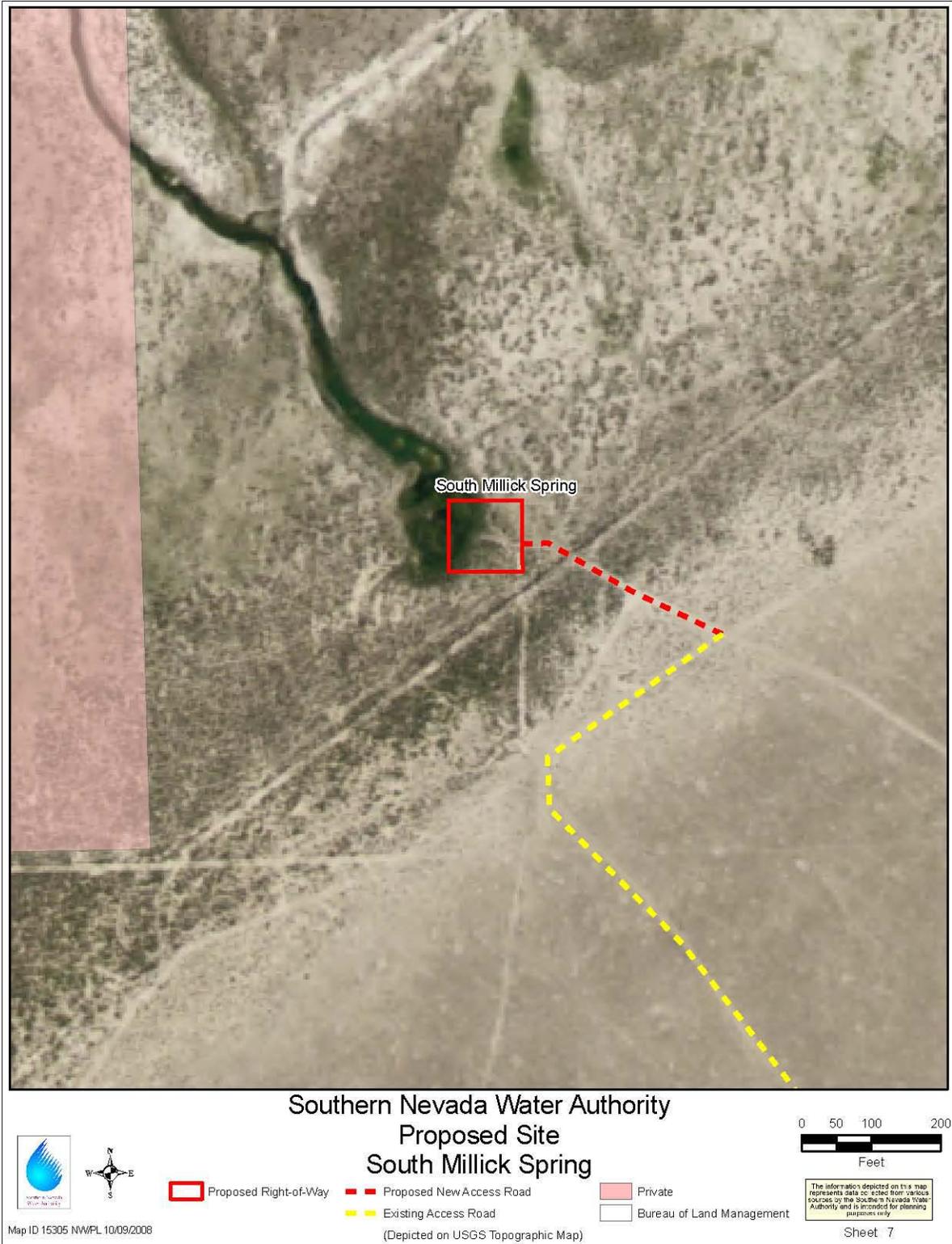
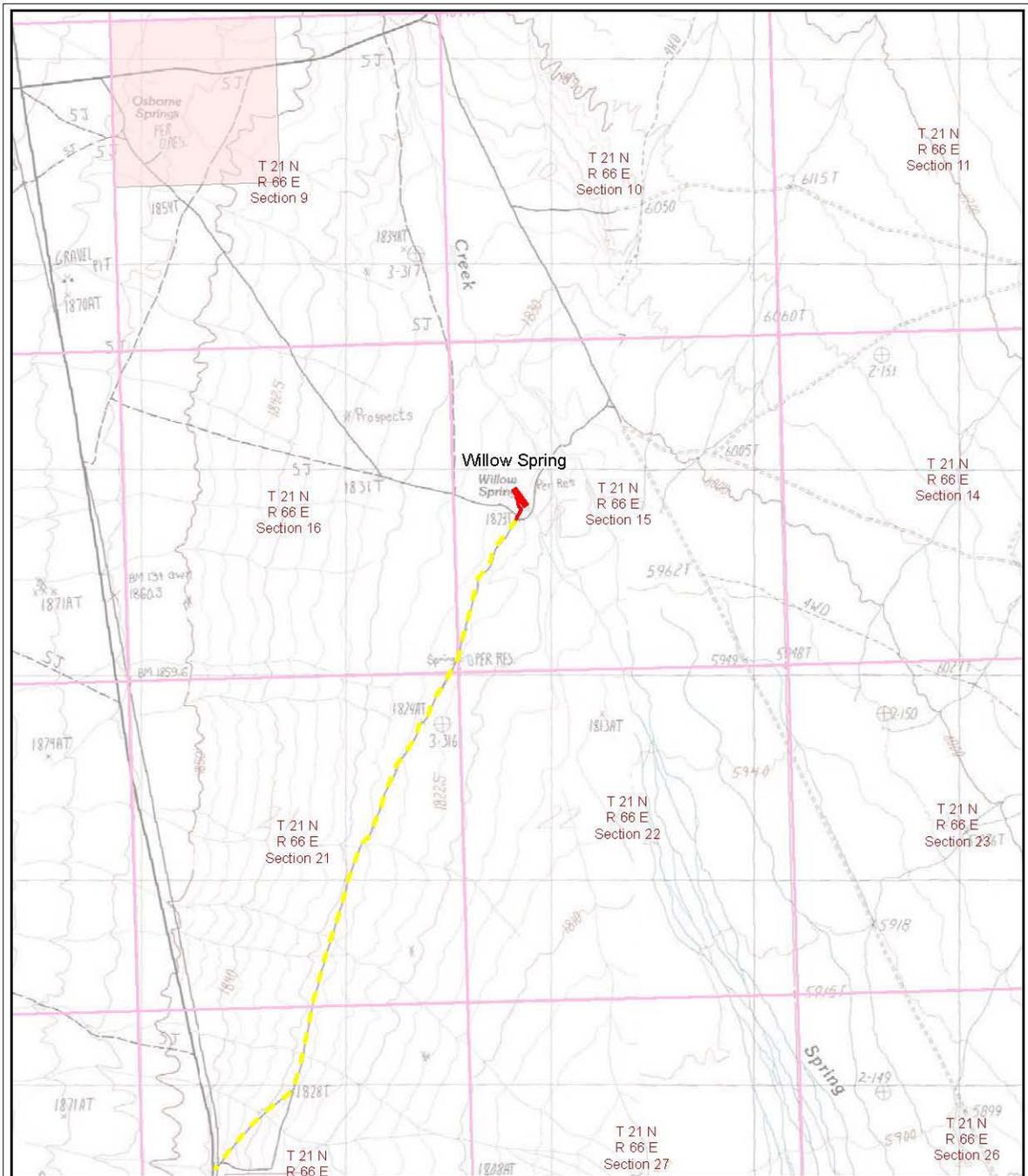


Figure 15: South Millick Spring Aerial View



**Southern Nevada Water Authority
Proposed Site
Willow Spring**



Map ID 15304 NWPL 10/08/2008

- Proposed Right-of-Way
 - Existing Access Road
 - Private
 - Bureau of Land Management
- (Depicted on USGS Topographic Map)



1 inch = 2,000 feet

The information depicted on this map represents data collected from various sources by the Southern Nevada Water Authority and is not for planning purposes only.

Sheet 8

Figure 16: Willow Spring Topo View

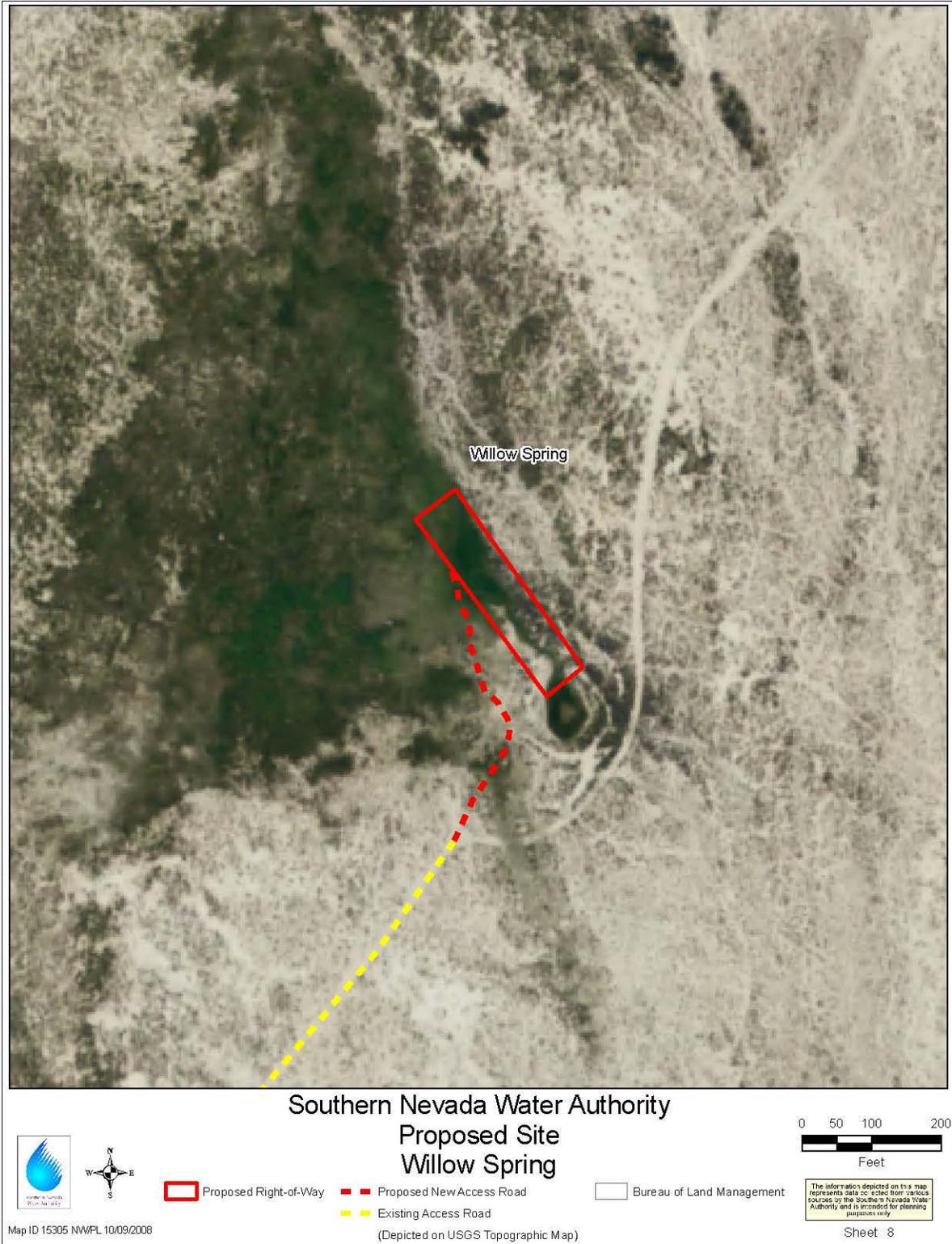


Figure 17: Willow Spring Aerial View



Figure 18: Blind Spring

Photo by Tim Carr, HRA, Inc., April 2008



Figure 19: The Seep

Photo by Tim Carr, HRA, Inc., April 2008



Figure 20: Layton Spring

Photo by Tim Carr, HRA, Inc., April 2008



Figure 21: 4WD Spring

Photo by Tim Carr, HRA, Inc., April 2008



Figure 22: Rock Spring

Photo by Tim Carr, HRA, Inc., April 2008



Figure 23: W Spring Valley Complex 1

Photo by Tim Carr, HRA, Inc., April 2008



Figure 24: South Millick Spring

Photo by Tim Carr, HRA, Inc., April 2008



Figure 25: Willow Spring

Photo by Tim Carr, HRA, Inc., April 2008

Attachment 2
Risk Assessment for Noxious & Invasive Weeds

RISK ASSESSMENT FOR NOXIOUS & INVASIVE WEEDS

N-84216, Stipulated Spring Piezometers and Associated Appurtenances

From November 13-14, 2007, site habitat and weed evaluations were completed for eight sites that include eight stipulated piezometers, seven staff gages, two permanent flumes, one discharge gage, and access roads (Proposed Action) in Spring Valley, White Pine County by Wildland International, for the Southern Nevada Water Authority (SNWA). Noxious and invasive weed surveys were not completed for the surrounding area but instead the Ely District weed inventory data was consulted.

Under Title V of the Federal Land Management Policy Act, the SNWA has requested a Bureau of Land Management (BLM) right-of-way (ROW) to construct spring piezometers and associated appurtenances. The data would be collected from each site approximately every 6-8 weeks and the ROW for the eight sites is requested for a 30-year term.

The purpose of the Proposed Action is to determine the variability of groundwater levels near ground surfaces that correlate to spring discharges. The information is needed 1) for the development and implementation of the hydrologic and biologic monitoring, management, and mitigation plans; and 2) for continued evaluation and refinement of spring discharges in response to pumping of the aquifer as approved by the Nevada State Engineer in Ruling Number 5726.

The Proposed Action is needed in Spring Valley to comply with a stipulated agreement between SNWA and the Department of the Interior agencies on water rights in Spring Valley. According to Exhibit A of the Stipulated Agreement (Section 2, D., IV., page 4), "SNWA shall install, equip, and maintain at least one shallow well or piezometer near 12 of the springs listed in Table 1 in order to measure water-level changes nearby." Since the stipulated agreement was written, the stipulated agreement's Technical Review Panel, in coordination with the stipulated agreement's Biological Working Group, added an additional spring resulting in a total of thirteen springs to be monitored. Of these thirteen springs, eight are on land management by the BLM. The data collected would be shared with the BLM and would benefit the agency through a better understanding of the springs' response to groundwater withdrawals in Spring Valley.

The spring piezometers and associated appurtenances would be constructed within six 0.25-acre and two 0.50-acre site locations. Access to the sites would be from both new access roads and existing paved and dirt roads. Blind Spring would be accessed by an existing dirt road and a new access road. Total, Blind Spring and the access road would encompass approximately 0.27 acre. The Seep would be accessed by an existing dirt road and a new access road. The Seep and the access road would encompass approximately 0.77 acre. Access to Layton Spring would be from an existing transmission line maintenance road and a new access road. Layton Spring and the access road would encompass approximately 0.95 acre. 4WD Spring would be accessed from an existing dirt road. Additional access roads are not needed for this site and the site would encompass approximately 0.25 acre. W Spring Valley Complex 1 would be accessed from an existing dirt road and a new access road located just off of State Highway 893. W Spring Valley Complex 1 and the access road would encompass approximately 0.30 acre. Access to South Millick Spring would be from an existing dirt road and a new access road. South Millick Spring and the access road would encompass approximately 0.33 acre. Rock Spring would be accessed from an existing dirt road, no new access roads are required, and the site would encompass approximately 0.50 acre. Willow Spring would be accessed from an existing dirt road and a new

access road. Willow Spring and the access road would encompass approximately 0.60 acre. Total, the piezometer sites and the access roads would encompass approximately 3.97 acres. All drilling and earthmoving equipment would be washed prior to arrival on the Proposed Action sites, prior to moving between sites, and prior to removal to prevent and minimize the introduction or spread of non-native vegetation. All washing would occur at the drilling sites, except for the initial washing which would occur off-site. The Proposed Action sites would be staked and flagged and no ground disturbance would occur outside of the designated site. Existing vegetation, primarily sagebrush scrub, would be crushed rather than bladed wherever possible. Blading to level work areas would be kept to the minimum necessary, and topsoil and vegetation that are scraped would be stockpiled within the site and re-spread at the completion of construction.

Botanical Information:

The Proposed Action sites were surveyed and the Ely District weed inventory data was consulted in order to determine the presence of noxious and/or invasive weed populations within the surrounding area of the sites. When comparing the Proposed Action site locations to the Ely District weed inventory, the following standards have been applied:

If the weed inventory documented a weed at ≤ 0.5 mile from the Proposed Action site, the weed was considered within the surrounding area.

If the weed inventory documented a weed ≤ 1.0 mile but > 0.5 mile from the Proposed Action site, the weed was considered within the surrounding area, but the distance to the nearest weed population to the site is provided.

If the weed inventory documented a weed > 1.0 mile from the Proposed Action site, the weed was not included as being within the surrounding area.

Willow Spring: The November 2007 Wildland International survey observed no noxious or invasive weeds at this site. The Ely District weed inventory documented the noxious weed Canada thistle (*Cirsium arvense*) and the invasive weed, bull thistle (*Cirsium vulgare*), within the surrounding area.

W Spring Valley Complex 1: The November 2007 Wildland International survey observed no noxious weeds at this site, but cheatgrass (*Bromus tectorum*) was common at the site. The Ely District weed inventory documented the noxious weed Canada thistle with the nearest population approximately 0.7 mile from the site.

South Millick Spring: The November 2007 Wildland International survey observed no noxious or invasive weeds at this site. The Ely District weed inventory documented no noxious or invasive weeds within the surrounding area.

Rock Spring: The November 2007 Wildland International survey observed no noxious or invasive weeds at the site. The Ely District weed inventory documented the noxious weeds spotted knapweed (*Centaurea stoebe*) and tall whitetop (*Lepidium latifolium*) within the surrounding area. The invasive weed bull thistle was also documented with the nearest population approximately 0.7 mile from the site.

4WD Spring: The November 2007 Wildland International survey observed no noxious or invasive weeds at this site. The Ely District weed inventory documented no noxious or invasive weeds within the surrounding area.

Layton Spring: The November 2007 Wildland International survey observed no noxious or invasive weeds at this site. The Ely District weed inventory documented no noxious or invasive weeds within the surrounding area.

The Seep: The November 2007 Wildland International survey observed no noxious or invasive weeds at this site. The Ely District weed inventory documented no noxious or invasive weeds within the surrounding area.

Blind Spring: The November 2007 survey by Wildland International observed no noxious or invasive weeds at this site. The Ely District weed inventory documented the noxious weed salt cedar (*Tamarix* spp.) with the closest population approximately 0.6 mile from the site.

Factor 1 assesses the likelihood of noxious/invasive weed species spreading to the project area.

None (0)	Noxious/invasive weed species are not located within or adjacent to the project area. Project activity is not likely to result in the establishment of noxious/invasive weed species in the project area.
Low (1-3)	Noxious/invasive weed species are present in the areas adjacent to but not within the project area. Project activities can be implemented and prevent the spread of noxious/invasive weeds into the project area.
Moderate (4-7)	Noxious/invasive weed species located immediately adjacent to or within the project area. Project activities are likely to result in some areas becoming infested with noxious/invasive weed species even when preventative management actions are followed. Control measures are essential to prevent the spread of noxious/invasive weeds within the project area.
High (8-10)	Heavy infestations of noxious/invasive weeds are located within or immediately adjacent to the project area. Project activities, even with preventative management actions, are likely to result in the establishment and spread of noxious/invasive weeds on disturbed sites throughout much of the project area.

This Proposed Action rates as Moderate (4) at the present time. During the November 13-14, 2007 survey by Wildland International, no noxious weeds were observed within any of the sites and only one site, W Spring Valley Complex 1, was observed to have an invasive weed population present within the site. According to the Ely District weed inventory, the closest noxious weed population to a Proposed Action site was approximately 0.05 mile away and the closest invasive weed population to a Proposed Action site was approximately 0.03 mile.

Each Proposed Action site would be staked and flagged and no ground disturbance would occur outside of the designated site. Existing vegetation, primarily sagebrush scrub, would be crushed

rather than bladed wherever possible. Any topsoil and vegetation that are scraped would be stockpiled within the site and re-spread at the completion of construction. Ground disturbance at each site would be kept to a minimum. All drilling and earthmoving equipment would be washed prior to arrival on the Proposed Action site and prior to removal to prevent and minimize the introduction or spread of non-native vegetation. All washing would occur at the drilling site, except for the initial washing which would occur off-site.

Factor 2 assesses the consequences of noxious/invasive weed establishment in the project area.

Low to Nonexistent (1-3)	None. No cumulative effects expected.
Moderate (4-7)	Possible adverse effects on site and possible expansion of infestation within the project area. Cumulative effects on native plant communities are likely but limited.
High (8-10)	Obvious adverse effects within the project area and probable expansion of noxious/invasive weed infestations to areas outside the project area. Adverse cumulative effects on native plant communities are probable.

This Proposed Action rates as High (8) at the present time. Since no Proposed Action sites were observed to have noxious weeds present within the sites and only one site was observed to have an invasive weed population present within the site, any new weed introductions could adversely impact the current native plant communities. Also, any increase in cheatgrass could alter the fire regime in the area.

The Risk Rating is obtained by multiplying Factor 1 by Factor 2.

None (0)	Proceed as planned.
Low (1-10)	Proceed as planned. Initiate control treatment on noxious/invasive weed populations that get established in the area.
Moderate (11-49)	Develop preventative management measures for the proposed project to reduce the risk of introduction of spread of noxious/invasive weeds into the area. Preventative management measures should include modifying the project to include seeding the area to occupy disturbed sites with desirable species. Monitor the area for at least 3 consecutive years and provide for control of newly established populations of noxious/invasive weeds and follow-up treatment for previously treated infestations.
High (50-100)	Project must be modified to reduce risk level through preventative management measures, including seeding with desirable species to occupy disturbed site and controlling existing infestations of noxious/invasive weeds prior to project activity. Project must provide at least 5 consecutive years of monitoring. Projects must also provide for control of newly established populations of noxious/invasive weeds and follow-

	up treatment for previously treated infestations.
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The Risk Rating for the Proposed Action is Moderate (32) at the present time. The following measures would be taken to control and manage noxious and invasive weeds.

Preventive Measures:

All vehicles and equipment used for the completion or monitoring of the Proposed Action would be free of soil and debris capable of transporting weed propagules. All such vehicles and equipment would be cleaned with power or high pressure equipment prior to entering or leaving the Proposed Action sites.

Any backfill would consist of native material directly from the Proposed Action site itself.

Monitoring Measures:

When the Proposed Action sites are visited every 6-8 weeks, the crew would monitor for any new infestations of noxious or invasive weeds.

Treatment Measures:

If any populations of noxious weeds are observed, the Ely District Noxious and Invasive Weeds Coordinator would be notified.

Reviewed by: _____
Bonnie Million
Ely District Noxious & Invasive Weeds
Coordinator

Date