Nevada Water Science Center

Evaluating Source Water and Generalized Flow Paths to Lower Amargosa Valley, California

The main goals of this study are to understand the primary groundwater sources and generalized flow paths that support discharge in Lower Amargosa Valley, including the Wild and Scenic designated reaches of the Amargosa River. To reach these goals, the study will:

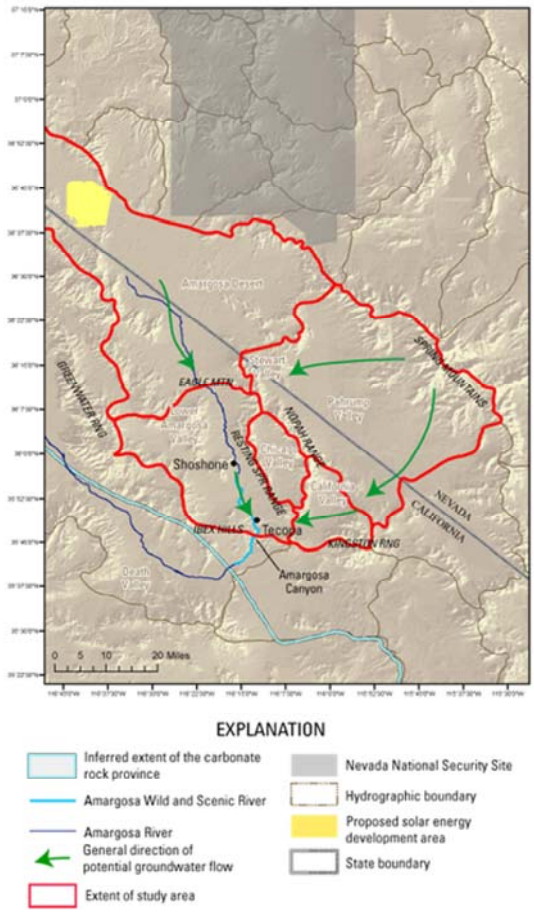
- Define the bedrock architecture of principal hydrogeologic units, and delineate geologic structures that influence groundwater flow,
- Utilize the hydrogeologic framework and available water level data and potentiometric surface maps to evaluate generalized groundwater flow paths, and
- Utilize a suite of geochemical approaches to define the primary source-water components.

Research plan

Four principal approaches are being taken to meet study goals:

- Draw upon existing geological, hydrological, and geochemical data,
- Describe geometry of aquifer systems, define hydrologically significant structures, and provide a conceptual framework using targeted geological mapping,cross section construction, surface geophysical methods,
- Delineate generalized flow paths to Lower Amargosa Valley using geologic data and existing water-level data and potentiometric maps, and
- Validate flow paths and evaluate sources using existing and newly-collected rock, precipitation, and groundwater chemistry data.

Background



Study Area and general directions of potential groundwater flow.

Challenges with current conceptual model

Based on sparse spatial and temporal datasets,

Drawn from brief descriptions in investigations focused on regional-scale groundwater flow,

Flow paths in the vicinity of Nopah and Resting Spring Ranges, into Lower Amargosa Valley are unclear,

Extent of the regional carbonate-rock aquifer has not been demarcated on a sub-regional to local scale, and

The mechanisms for discharge in Lower Amargosa Valley are unclear.

Quick Facts

Location: Southwestern Nevada and Southeastern California
Start Date: 2012
End Date: 2016
Cooperators: Bureau of Land Management

Contact Information

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Abbreviations

BLM: Bureau of Land Management

U.S. Department of the Interior | U.S. Geological Survey
URL: http://nevada.usgs.gov/water/studyareas/blackrock.htm
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