
1-Explanation

General Information

This file is part of a report titled "*Hydrology and Water Resources of Spring, Cave, Dry Lake, and Delamar Valleys, Nevada and Vicinity*" prepared in 2011 by Burns and Drici for the Southern Nevada Water Authority (SNWA), in support of water-right hearings related to SNWA applications 54003 through 54021, inclusive, in Spring Valley; and applications 53987 through 53992, inclusive, in Cave, Dry Lake, and Delamar valleys.

This file contains an inventory of the springs found in the Project Basins and vicinity. In addition, this file contains summary flow statistics for selected springs in the Project Basins and adjacent and downgradient basins. Brief descriptions of the purpose, approach, and contents of this file are provided here. The details may be found in the report listed above.

Purpose

The purpose of the spring inventory was to provide a database of spring locations and their land-surface elevations to help with the interpretation of groundwater occurrence and movement, including flow directions in the Project Basins and vicinity. Land-surface elevations at the spring locations were used as surrogate estimates of the potentiometric head, and were useful in the computation of horizontal hydraulic gradients to support boundary-flux estimates in certain instances. Summary spring flow statistics were derived for springs with data to assist with the assessment of the springs connectivity to regional, intermediate, and/or local flow regimes. In addition, spring temperature and isotopic data were also included in the spring inventory.

Approach

An inventory of the springs located in the Project Basins and vicinity was performed by compiling data from various published reports, including USGS topographic maps and publicly-available databases administered by the USGS and DRI. SNWA has augmented these databases through hydrologic data collection programs supporting the development of the EIS for the Project, and in satisfaction of SNWA/Federal Bureau stipulation agreements. The compiled data were evaluated and the springs were classified based on the classification criteria postulated for flow systems by Mifflin (1968). The resulting spring data set is contained in this file.

Content Description

This PDF file contains four parts:

"1-Explanation"

This part of the file contains this explanation.

"2-Spring Data"

This part of the file contains the spring inventory data set. The data set is organized numerically by the HA column and then alphabetically by the Station Name column. The fields of the table are defined in bookmark "3-Data Dictionary".

"3-Data Dictionary"

This part of the file contains the list of columns found in the spring inventory table, along with their respective definitions.

"4-References"

This part of the file contains a list of the references that were cited in the spring inventory table.

2-Spring Data

Spring Map ID ^a	HA	Station No	Station Name	Aliases	UTM Northing ^b (m)	UTM Easting ^b (m)	Land Elev ^b (ft amsl)	Basin Location	Discharge Measurement			Summary Flow Statistics				Temperature Statistics ^d			Isotopic Data ^e			Spring Classification
									Earliest	Latest	Count of Measurements Used	Average Discharge ^c (cfs)	Minimum Discharge ^c (cfs)	Maximum Discharge ^c (cfs)	Standard Deviation	Count of Measurements Used	Minimum (°C)	Maximum (°C)	Average Temperature (°C)	18O (permil)	D (permil)	
^a Spring Map ID number can be used in conjunction with figures and plates to locate a particular site found in this table																						
^b Coordinates use the Universal Transverse Mercator projection, North American Datum of 1983, Zone 11 meters; Elevations use the North American Vertical Datum of 1988.																						
^c Numbers have been rounded to 2 significant figures, except when 3 significant figures were needed to distinguish from no flow.																						
^d Temperature data from SNWA Geochemistry database.																						
^e Isotope data from Thomas and Mihevc (2011).																						
^f Discharge is from a combination of miscellaneous discharge measurements made by USGS, SNWA, DRI, and NDWR and gage records from USGS																						
^g Discharge values are from discharge records published by USGS up to 2009.																						
^h Discharge values are a combination of both the diversion gage and main stem gage.																						
ⁱ Discharge is from a combination of miscellaneous discharge measurements made by USGS, SNWA, and NDWR and gage records from SNWA																						

3-Data Dictionary

2-Spring Data	
Column Heading	Definition
Spring Map ID	A unique identifier used to associate spring locations depicted on figures and plates of the report to the spring data table.
HA	The number designation for the hydrographic area in which the spring is located.
Station No	Unique identifier for spring location.
Station Name	Common name for the spring.
Aliases	Additional names that the spring might also be known as.
UTM Northing (m)	The Universal Transverse Mercator projection, North American Datum of 1983, Zone 11 meters northing coordinate of the spring.
UTM Easting (m)	The Universal Transverse Mercator projection, North American Datum of 1983, Zone 11 meters easting coordinate of the spring.
Land Elev (ft amsl)	The land surface elevation of the spring, in ft amsl.
Basin Location	A general classification of the geographic location of a spring into one of three categories including valley floor, valley margin, and mountain block.
Discharge Measurement, Earliest	The date of the earliest recorded discharge measurement.
Discharge Measurement, Last	The date of the latest recorded discharge measurement.
Count of Measurements Used	The count of the number of measurements used to derive the average discharge measurement for a spring.
Average Discharge (cfs)	The average discharge measurement for the spring, in cfs.
Minimum Discharge (cfs)	The minimum discharge measurement, in cfs, of the discharge records available for the spring.
Maximum Discharge (cfs)	The maximum discharge measurement, in cfs, of the discharge records available for the spring.
Standard Deviation	The standard deviation of the discharge records available for the spring.
Count of Measurements Used	Number of temperature measurements used to derive the average temperature.
Minimum (°C)	Minimum temperature measurement, in °C.
Maximum (°C)	Maximum temperature measurement, in °C.
Average Temperature (°C)	Average temperature measurement, in °C.
18O	Oxygen-18 isotopic composition of the water sample, in permil.
D	Deuterium, or hydrogen-2, isotopic composition of the water sample, in permil.
Stable Isotope Sample Date	Sample date for the stable isotope data.
Spring Classification	Classification of the spring into one of three categories including local, intermediate, or regional (as discussed in Section 4.2.1)

4-References

1-Explanation	
Callout	Reference
Mifflin (1968)	Mifflin, M.D., 1968, Delineation of ground-water flow systems in Nevada: Desert Research Institute, Las Vegas, Nevada, Technical Report Series H-W, Publication No. 4, 53 p.
2-Spring Data	
Callout	Reference
Thomas and Mihevc (2011)	Thomas M.T., and Mihevc, T.M, 2011, Evaluation of groundwater origins, flow paths, and ages in east-central and southeastern Nevada: Desert Research Institute, Reno, Nevada, Publication No. 41253, 61 p.