# Groundwater Quantification Rebuttal Report in Response to Myers (2017)

**PRESENTATION TO THE OFFICE OF THE NEVADA STATE ENGINEER**

Prepared for

SOUTHERN NEVADA WATER AUTHORITY

Prepared by

Stanka Consulting, LTD

A Professional Engineering Company

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Submitted to:
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Pertaining to:
Groundwater Applications 53987 through 53992 in
Cave, Dry Lake, and Delamar Valleys

August 2017

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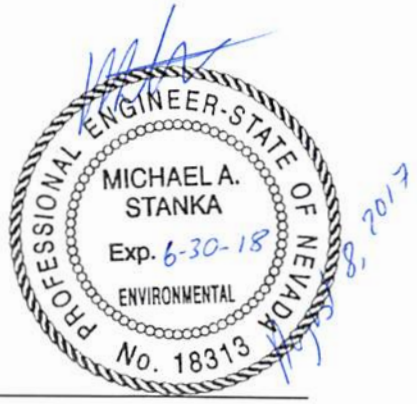


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8/8/2017
Date

# 1.0 INTRODUCTION

This rebuttal report is prepared in response to the report titled *Hydrogeology of Spring, Cave, Dry Lake, and Delamar Valleys Impacts of Developing Southern Nevada Water Authority's Clark, Lincoln, and White Pine Counties Groundwater Development Project* by Thomas Myers, Ph. D., June 28, 2017 (Myers, 2017), prepared on behalf of White Pine County and the Great Basin Water Network et. al. (GBWN_WPC_Exhibit 281). This rebuttal report identifies some of the major shortcomings and errors contained within Myers (2017) relating to the quantification of water rights as identified below.

# 2.0 Flaws Identified in Myers' Water Rights Quantification

Review of Myers (2017) shows that Myers' alleged "total" for spring and stream rights downgradient from Cave, Dry Lake, and Delamar valleys is little more than an attempt to summarize his lack of comprehensive work in this area. Quantification of water rights occurs on page 76, with Table 4, along with corresponding information in Appendix 1. Review of the language itself, in addition to Table 4, and Appendix 1 of Myers (2017), reveal major flaws in terms of accurate or precise water rights quantification.

The first significant flaw identified in the quantification of water rights is the assumption that 100 percent of all stream rights and 100 percent of all spring rights in downgradient basins to Delamar, Dry Lake, and Cave valleys are dependent on groundwater. In SNWA Exhibit 483, titled *Committed groundwater resources within the White River Flow System*, prepared by Stanka Consulting, LTD, (Stanka, 2017), springs and surface water features (such as lakes and streams) sourced from springs within the groundwater discharge areas were identified as groundwater resources. However, springs and surface water features outside the groundwater discharge areas were not identified as groundwater dependent resources. The approach in Stanka (2017) utilized a more scientific methodology than Myers' assumption that 100 percent of all spring and stream flows are dependent on groundwater from upgradient basins.

The second substantial flaw (as stated in the footnote for Table 4 of Myers (2017)) was that no supplemental adjustment for the water rights was taken into account. Some examples of supplemental adjustments applied in Stanka (2017) include the impact of combined duty, overlapping of irrigation right places of use, and water returning to the groundwater system through excess crop irrigation. For additional information on supplemental adjustments, please refer to Chapter 2.0, *Methodology*, of Stanka (2017). Without a supplemental adjustment of water rights, there is no way an accurate accounting of the total number of committed rights can be quantified. The failure to make this adjustment creates a gross over-estimation of the true amount of water rights actually allocated.

The third critical flaw identified was the failure to properly search for water rights using the Nevada State Engineer's search parameters on their website. Review of the Nevada Division of Water Resources (NDWR) Hydrographic Abstracts downloaded from the State Engineer's website, in

comparison with Appendix 1 from Myers (2017), revealed that the Hydrographic Abstracts used the following search parameters in order to obtain the values for spring and stream water rights in Table 4 (p. 76):

- Basin Number [207], Source [SPR], Status [CER, DEC, PER, and VST]
- Basin Number [207], Source [STR], Status [CER, DEC, PER, and VST]
- Basin Number [208], Source [SPR], Status [CER, DEC, PER, and VST]
- Basin Number [208], Source [STR], Status [CER, DEC, PER, and VST]. - NOTE: No Records Found in Myers (2017) Appendix 1 for this search parameter, which matches NDWR Records.
- Basin Number [209], Source [SPR], Status [CER, DEC, PER, and VST]
- Basin Number [209], Source [STR], Status [CER, DEC, PER, and VST]

The NDWR Hydrographic Abstract is a great tool when used correctly. However, using incorrect input data does not provide a complete listing of water rights and some can be missed. For example, some irrigation rights change their source from "Stream" or "Spring" to "Decreed." Additionally, some Pahranagat Valley sources in the groundwater discharge areas have a source of "Lake," but are sourced from springs. From a professional water rights surveyor's standpoint, Myers (2017) is an incomplete analysis which does not provide the State Engineer with accurate information to make a correct determination of the groundwater dependent resources within these basins. In summary, this analysis is not consistent with the standard of competency which would be expected of a professional water rights surveyor.

A fourth significant flaw was to ignore the "Database Disclaimer" posted on the NDWR Permit Search tool, and assume the complete accuracy of the downloaded search results. When searching for water rights using the NDWR online database, the following disclaimer is shown:

> ***Legal Information***
>
> *By using this site and its data services, you agree to the following terms and conditions.*
>
> ***Database Disclaimer***
>
> *The information reflected on these pages is derived by interpretations of paper records and is being provided for convenience only. Please refer to the actual water rights records for the details on any water right as such records may differ from the information provided herein. The Division of Water Resources is not responsible for errors, omissions, or accuracy of the information herein. There are no warranties, expressed or implied, including the warranty of merchantability or fitness for a particular purpose, accompanying this information. Please notify the Division of Water Resources of any errors.*

The NDWR Hydrographic Abstract is a valuable tool to identify potential water rights within a specific search parameter; however, the annual duty on the NDWR Hydrographic Abstract cannot always be taken at face value as listed in the summary, and the permit, certificate, or vested claim itself should be reviewed in full in order to determine their duty volumes. Sometimes only a diversion rate is listed on the NDWR hydrographic abstract, and no annual duty, or vice versa. For each permit,

any abrogations should be analyzed and taken into account as well to ensure accuracy when calculating a total for committed water rights. In Myers (2017), review of data shows that all of the annual duties were copied from the Hydrographic Abstract without any analysis or review to ensure their accuracy.

# 3.0 White River Flow System Analysis

On page 1 of Myers (2017), the first paragraph of the Summary states, "This report presents evidence which demonstrates that such a development cannot be accomplished without drying valuable groundwater resources and severely impacting existing water rights in the target and downgradient basins." Such evidence was not found in our review of the report, in terms of quantification of water rights, and the flawed analysis provided within Myers (2017) should be discarded.

Page 65 of Myers (2017) cites estimated subsurface flow into Coyote Spring Valley from Order No. 1169, dated March 8, 2002. On January 29, 2014, the State Engineer issued Ruling No. 6255, which quantified subsurface inflows to Coyote Spring Valley (CSV) as 39,000 afa. This information used by the State Engineer to determine the subsurface inflows was not available at the time Order No. 1169 was issued, because the current determination of inflows is based on the 2014 NDWR revised Excel Solver (SE Exhibit 135). For Myers to only cite obsolete data (Order No. 1169), and ignore a newer ruling (Ruling No. 6255) is a great oversight, and skews the resultant analysis in his report.

Page 99 of Myers (2017) states "Developing this groundwater mining project will cause irreversible environmental damage to springs and wetlands in Spring Valley and downgradient from the CDD basins in White River Valley, Pahranagat Valley, and Muddy River basin." In Stanka (2017), all water rights on groundwater dependent spring and surface water sources were completely accounted for. These sources were accounted for in much greater detail than in Myers (2017) and in a fashion meeting the standard of competence of a professional water rights surveyor. Myers contends that use of the SNWA permits would result in a water rights deficit within the White River Flow System basins. The detailed water rights accounting performed in Stanka (2017) not only shows that there is no deficit, but there is actually a surplus of water available for appropriation.

In conclusion, Myers (2017) shows a lack of understanding of water rights quantification. This results in incorrect statements, findings and faulty results. This is particularly misleading when mixed with his flawed assumptions of the 100 percent dependency of spring and stream rights on groundwater in downgradient basins. The water rights analysis performed in Stanka (2017) was performed in much greater detail than Myers (2017), and was accompanied by documentation from source data obtained from either NDWR or the U.S. Geological Survey.

# 4.0 References

Myers, T., 2017, Hydrogeology of Spring, Cave, Dry Lake, and Delamar Valleys- Impacts of Developing Southern Nevada Water Authority's Clark, Lincoln and White Pine Counties Groundwater Development Project. Presented to the Office of the Nevada State Engineer on behalf of Protestants White Pine County, Great Basin Water Network, et al., Reno, NV.

Stanka, M.A., 2017, Committed groundwater resources within the White River Flow System: Presentation to the Office of the Nevada State Engineer: Stanka Consulting, LTD., Carson City, Nevada.