

BEFORE THE STATE WATER RESOURCES CONTROL BOARD
WSID CDO/BBID ACL ENFORCEMENT ACTIONS

ENFORCEMENT ACTION ENF01949
DRAFT CEASE AND DESIST ORDER
REGARDING UNAUTHORIZED
DIVERSIONS OR THREATENED
UNAUTHORIZED DIVERSIONS OF
WATER FROM OLD RIVER IN SAN
JOAQUIN COUNTY

ENFORCEMENT ACTION ENF01951-
ADMINISTRATIVE CIVIL LIABILITY
COMPLAINT REGARDING
UNAUTHORIZED DIVERSIONS BY
BYRON-BETHANY IRRIGATION
DISTRICT

WRITTEN TESTIMONY
OF NICHOLAS F. BONSIGNORE, P.E.

Hearing Date: March 21, 2016
Hearing Officers: Frances Spivy-Weber,
Tam Doduc

1. I, Nicholas F. Bonsignore, submit this written testimony at the request of Byron-Bethany Irrigation District (BBID) and West Side Irrigation District (WSID) in the above referenced enforcement actions, hereinafter referred to as “the districts”. I have personal knowledge of the facts stated herein and could testify competently thereto if called as a witness, except as to matters stated on my information and belief, and as to such matters, I am informed the same to be true.

2. I am a California Registered Civil Engineer and a Principal in the firm of Wagner & Bonsignore Consulting Civil Engineers, A Corporation. My practice includes design of water diversion, storage, and conveyance systems; hydrology analysis in connection with water availability studies; water right analysis, acquisition, compliance, and reporting services; and litigation consultation. I am the authorized agent for numerous water right actions pending before the State Water Resources Control Board, Division of Water Rights (Board), and oversee the preparation of over 1,000 annual reports to the

Board for water right Licenses, Permits, and Supplemental Statements. I have worked on California water right matters for over 33 years of my professional career. A significant portion of my practice includes analysis of available supplies in various watersheds for water right applications. A more detailed explanation of my professional experience is contained in my professional resume attached hereto.

3. I hold a Bachelor of Science in Civil Engineering from the University of Pacific, and have been a California Registered Civil Engineer in since 1985.

4. I was retained in these matters by WSID and BBID to (1) review and understand the SWRCB's analysis of water availability related to curtailments in 2015 and (2) determine whether or not the methodology used for the SWRCB analysis was reasonable or scientifically supportable.

5. In performing my work, I collaborated with Greg Young of Tully and Young. For purposes of preparing our written testimony, Mr. Young and I have focused on different aspects of the SWRCB analysis. My focus was on the Supply side of the SWRCB analysis.

6. I have prepared a report summarizing my conclusions, which has been produced as Exhibit WSID00122. I hereby incorporate that report herein as part of my written testimony.

7. In order to perform the tasks requested, I spent significant time reviewing the Excel spreadsheets and other files produced by the SWRCB in response to the districts' public records act request, I performed independent research and analysis, and I

attended the depositions of SWRCB staff including Brian Coats, Jeff Yeazell, and John O'Hagan. The information gained from these witnesses during the depositions aided my understanding of the SWRCB's water availability analysis methodology and curtailment effort. Although I had previously looked at the spreadsheets that the SWRCB had posted to its website related to curtailment, I could not understand the methodology contained in those spreadsheets without further explanation provided in the depositions and considerable analysis of my own. During the depositions I also learned that the SWRCB did not perform a specific water availability analysis for either WSID or BBID that relates to the specific points of diversion for these two diverters. Rather, the SWRCB relied on a "global" analysis that evaluated Supply and Demand for the entire Sacramento-San Joaquin-Delta watershed as a whole, or major subwatersheds thereof (what I refer to herein and in my report as the "combined watersheds") to support its curtailment decisions and the subject enforcement actions.

8. After gaining an understanding of the SWRCB methodology for determining water availability that was used in 2015, I specifically evaluated whether or not that methodology was reasonable and scientifically supportable, focusing on the Supply side. I concluded that the methodology was not reasonable or scientifically supportable. While the spreadsheet models prepared by SWRCB staff are sophisticated and contain a tremendous amount of information, they fail to account for the reality of how water moves through the Sacramento-San Joaquin watersheds and is actually available to water right diverters. My primary conclusions regarding the errors in the SWRCB methodology are summarized in the following paragraphs:

9. The SWRCB Method Failed to Spatially Relate Supply and Demand:

- a. In the real world, both Supply and Demand have a geographical basis. In order for a particular Demand to be met there must be sufficient Supply at the point of diversion. If there is insufficient Supply at the point of diversion the Demand cannot be met. However, the SWRCB's analyses of the combined watersheds does not apply this geographical test. For analyzing the combined watersheds the SWRCB method simply aggregates all of the individual diverters' Demands within the watershed without regard to where they are located or whether there is sufficient water available at their individual points of diversion to justify the Demand that the SWRCB method assigned to their rights. My analysis of this issue, discussed in Section 2.1 of my report, shows how this spatial disconnect results in overestimates of Demand that should not have been included in the SWRCB's water availability analyses.
- b. Similarly, the SWRCB method includes significant Demands from subwatersheds but does not account for any natural Supply in those subwatersheds to justify the Demand that the SWRCB method assigned to water rights therein. For purposes of evaluating the combined watersheds, the quantification of Demand should not include subwatershed Demand for which no corresponding Supply was considered. This is discussed in Section 2.2. of my report.
- c. The SWRCB's treatment of agricultural return flows in the Delta as a source of Supply has similar spatial issues. The SWRCB's global accounting errantly allows a Delta-only source of Supply to be counted towards satisfying Demand by diverters that are located upstream and outside of the Delta and who have no

physical access to the Delta-only Supply. This is discussed in Section 3.4 of my report.

10. The SWRCB Method did not Fully or Properly Account for Return Flows.

- a. The SWRCB method for accounting for agricultural return flows is internally inconsistent. Further, it accounts for some return flows, but not all return flows that are actually present in the system. Notably, the SWRCB method assumes zero return flows in the Sacramento Valley and assumes no return flows in any stream from the use of groundwater or stored water. Return flows and irrigation tailwater flows comprise a significant source of water in some streams, particularly for appropriative rights. This issue is addressed in detail in Section 3.0 of my report.
- b. It is also noteworthy that in 1978 the SWRCB and DWR conducted evaluations of water supply and demand that occurred during the drought year of 1977. These studies included analysis of return flows on a reach-by-reach and tributary basis, and quantified return flows available to diverters with rights downstream.
- c. For 2015, the SWRCB undertook no such analysis. Rather, the SWRCB made overarching assumptions for geographically limited return flows and then applied those flows as a source of available Supply to the entire combined watershed, instead of to only those reaches of the rivers where the flows would actually occur.

11. The SWRCB Method Omitted Treatment Plant Discharge Flows. The SWRCB method ignored treated effluent discharges from municipal wastewater treatment plants as a source of Supply. These discharges can be locally or regionally significant and are a source of Supply for appropriators. Section 4.0 of my report discusses this omission.

12. The SWRCB Method Does Not Consider Excess Releases From Large Reservoirs. In 2015 operators of large reservoirs on major tributaries to the San Joaquin River released water from their respective projects in accordance with regulatory minimum instream flow requirements. There were periods when these released flows were in excess of the Full Natural Flow (FNF) amounts that the SWRCB used to quantify Supply for the combined watersheds. While the availability of these excess flows, after serving their intended regulatory purpose, to any one downstream water user would require a detailed analysis of legal and regulatory considerations, reservoir releases in excess of FNF represent a potential source of Supply to downstream water users that the SWRCB method does not consider. In general, the SWRCB method did not consider water released from storage as a possible source of Supply that in 2015 may have been available to meet downstream Demand that the SWRCB method assumes could only have been met by FNF.

13. Based on my analysis, the SWRCB method for quantifying Supply contains significant systemic deficiencies and omissions that result in an overestimate of Demand and an underestimate of Supply, and it should not have been used as the basis to quantify Supply in the SWRCB's analyses of water availability for the WSID and BBID enforcement actions in 2015.

I declare under penalty of perjury under the laws of the state of California that the foregoing is true and correct.

Executed this 18th day of January, 2016, in Sacramento, California.



NICHOLAS F. BONSIGNORE, P.E.

Nicholas F. Bonsignore, P.E.
Robert C. Wagner, P.E.
Paula J. Whealen
Henry S. Matsunaga

David H. Peterson, CEG, CHG
David Houston, P.E.
David P. Lounsbury, P.E.
Vincent Maples, P.E.
Ryan E. Stolfus

James C. Hanson
Consulting Civil Engineer
A Corporation

NICHOLAS F. BONSIGNORE
PROFESSIONAL RESUME

REGISTRATION:

Civil Engineer, California (License No. 39422)

EDUCATION:

B.S. Civil Engineering - University of the Pacific - 1982

EXPERIENCE:

Mr. Bonsignore is a principal of the firm of Wagner & Bonsignore, Consulting Civil Engineers, and has over 32 years' experience in water resources engineering. His specific areas of practice include acquisition and administration of appropriative water rights pursuant to Title 23 of the California Code of Regulations; hydrologic analyses in connection with water availability studies and water diversion projects; and design of water diversion, storage and conveyance facilities including pipelines, pump stations, and dams and reservoirs.

Mr. Bonsignore provides consulting services to a wide variety of public and private sector clients including water districts, private water companies, large and small corporate-owned entities, attorneys, and small proprietors and individuals. Mr. Bonsignore represents clients before the California State Water Resources Control Board, Division of Water Rights, concerning acquisition, modification and licensure of appropriative water rights; coordination of environmental processing to address California Environmental Quality Act requirements; and monitoring and annual reporting of water diversion and use. He also represents clients before the California Department of Fish & Wildlife, NOAA Fisheries, and other agencies for acquisition of regulatory permits and approvals.

Mr. Bonsignore has designed numerous water storage reservoirs, vineyard irrigation and frost protection systems, and erosion control plans. He has also designed and/or supervised the construction, modification, or repair of over 20 earthen dams under the jurisdiction of the California Division of Safety of Dams.

REPRESENTATIVE EXPERIENCE INCLUDES THE FOLLOWING:

- ***Private owner (confidential project), San Mateo County:*** Engineer of record for modification of 63-foot high earthen dam to raise dam height. Prepare hydrologic and hydraulic analyses to determine peak spillway design flow. Oversee construction of modifications.
- ***Hudson Vineyards, Napa County:*** Engineer of record for 45 acre-foot earthen dam and reservoir with synthetic liner requiring 50,000 cubic yards of earthwork.
- ***Stockton East Water District:*** Prepare water right applications, petitions for partial assignment of State-filed applications, and supporting documents for diversions from Calaveras River and Littlejohns Creek for a proposed regional groundwater recharge project in eastern San Joaquin County; prepare daily hydrologic and operations modeling to evaluate yield; presently assisting District with development of project description in support of CEQA compliance.
- ***North Gualala Water Company, Mendocino County:*** Prepare Water Supply Contingency Plan for development of new sources of supply for this small water purveyor regulated by the California Public Utilities Commission; prepare new water right application and supporting documentation; conduct safe yield analysis for a proposed 250 acre-foot off-stream storage reservoir.
- ***Brooktrails Township Community Services District, Mendocino County:*** Hydrologic analysis and daily operational modeling to support yield study and partial lifting of moratorium on new water connections.
- ***Peter Michael Winery, Sonoma County*** – Design diversion weir and 12-inch diameter, 700-foot long passive bypass pipeline around existing dam and reservoir to maintain minimum flows for sensitive instream uses. Prepare water right application and supporting hydrologic studies.
- ***Private developer (confidential project):*** Evaluate 30 years of cropping data and energy use records to estimate historical applied water for a 4,500-acre agricultural property in a California central coast county. Research applicable crop water duties; evaluation of crop records from landowners, Department of Water Resources, and U.S. Department of Agriculture; interpretation of historical aerial photography; data management; and report preparation.
- ***Amador Water Agency:*** Prepare water right application in support of a petition for partial assignment of a State-filed water right application for municipal supply; prepare hydrologic studies of Mokelumne River and tributaries to confirm water availability.
- ***Glendale Ranch, Napa County:*** Design gravity water supply system involving twin 50,000 gallon bolted steel tanks, 4,600 feet of 8 and 10-inch diameter fire supply pipeline, and 9,000 feet of 4-inch diameter domestic service pipeline; provided construction observation and contract management services.

- ***Stockton East Water District:*** Evaluate 42 years of historic daily operations data for New Hogan Reservoir (Calaveras River) to establish maximum amounts diverted and maximum beneficial use made for the purpose of obtaining licensure of a permit allowing seasonal storage of 325,000 acre-feet and direct diversion of 200 cfs.

CONTINUING EDUCATION:

“Preparing and Implementing Construction Site Storm Water Pollution Prevention Plans”, ASCE, July 2008

“Irrigation System Evaluation”, Irrigation Training and Research Center, Cal Poly, June 2004

“Legally Defensible Environmental Review under the California Environmental Quality Act”, Lorman Education Services, May 2004

“Fundamentals of Groundwater Hydrology”, UC Berkeley Extension, July 2002

PROFESSIONAL MEMBERSHIPS AND OTHER ASSOCIATIONS:

American Society of Civil Engineers - Member

American Water Works Association

University of the Pacific School of Engineering and Computer Science - Class Secretary for Class of 1982, 2000-10; 25-year University class reunion committee; 30-year School of Engineering class reunion committee.

Park Terrace Swimming and Tennis Club - Board of Directors, 2007- 2010; Vice-president 2008 -2009; Tennis Committee Chair 2007 - 2010.