STATE OF NEW MEXICO
COUNTY OF SAN JUAN
ELEVENTH JUDICIAL DISTRICT COURT

STATE OF NEW MEXICO, *ex rel.*
THE STATE ENGINEER,

Plaintiff,

vs.

THE UNITED STATES OF AMERICA, *et al.*,

Defendants.

AB-07-1
Claims of Navajo Nation

No. CV 75-184
Honorable James J. Wechsler
Presiding Judge

DESCRIPTIVE SUMMARY: The record shows that several of the purported experts employed by the US, NN, and OSE relied on raw data which they did not check. The underlying data was supplied by unidentified persons, using unidentified methods and unreliable records. The court should correct its August 16 opinion accordingly.

NUMBER OF PAGES: 2 + 11 pages of exhibits

DATE OF FILING: September 5, 2013

MOTION FOR CORRECTION OF RECORD AND AUGUST 16 OPINION CONCERNING EXPERT REPORTS

On pages 28 to 33, the court's August 16 opinion relies upon reports which were filed by purported experts hired by the US, NN, and OSE. These reports were filed with the court but never admitted into evidence, and never subjected to the foundational scrutiny required of expert reports.

On page 32, the court states that "Each report author has executed an affidavit attesting to the truth and accuracy of his or her work." The record shows otherwise. In many instances the purported experts relied on work done by others, without checking on the accuracy and reliability of the data on which they based their reports. In many instances these purported experts relied upon reports and raw data collected by unidentified persons,

using unidentified methods, and unspecified records. These purported experts did not cross check the accuracy of that data for themselves. They simply assumed that the report or raw data was valid. Without that foundation, the experts' opinions are not admissible. Furthermore, there is no way to evaluate the weight, if any, that should be given to the opinion.

The absence of proper foundation is shown at many places in the record before the court. Attached as Exhibit A are a few examples from the affidavit of John Leeper, the affidavit of John Whipple, and the affidavit of Gretchen Greene.

WHEREFORE, the community ditch defendant-counterclaimants move the court to correct its mischaracterization of the factual record and its August 16 opinion.

Respectfully submitted,

VICTOR R. MARSHALL & ASSOCIATES, P.C.

By /s/ Victor R. Marshall

Victor R. Marshall
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CERTIFICATE OF SERVICE

I hereby certify that on September 5, 2013, a true and correct copy of the foregoing was served on the parties and claimants by attaching a copy of said document to an email sent to the following list server: wrnavajointerse@nmcourts.gov and to the filing list referred to in the Notice of Amended Service List filed February 25, 2013.

/s/ Victor R. Marshall
Victor R. Marshall, Esq.

Settling Parties acquiesced, and throughout 2011 the Settling Parties worked to complete the negotiation of the terms of the Supplemental Partial Final Decree.

Water Provided to the Navajo Nation under the Settlement Agreement

37. Although I was not responsible for the preparation of the United States' claim on behalf of the Navajo Nation, the Water Management Branch was a key resource for the technical teams that prepared the claim. The Navajo Nation Water Management Branch provided Navajo Nation water resources data on a wide range of water uses for the preparation of these claims. The Water Management staff and I became quite familiar with the approaches incorporated into the resulting technical reports.

38. In almost every category of water use described in the claim prepared by the United States, the amount of water exceeds the water rights described in the Settlement Documents. The total claim prepared by the United States on behalf of the Navajo Nation is 920,745 acre-feet per year diversion and the total depletion is 591,401 acre-feet per year. For the Partial Final Decree and the Supplemental Partial Final Decree ("Proposed Final Decrees") the total diversion is only 635,729 acre-feet per year and the depletion is only 334,542 acre-feet per year. The following sections describe the differing assumptions between the two sets of values.

Domestic, Commercial, Municipal and Industrial (DCMI) Water Use.

39. The DCMI claim prepared by the United States on behalf of the Navajo Nation is based on the population, the projected population growth, and the per capita water use rate. For this claim the federal experts used the U.S. Census for its estimate of the population. The experts projected population growth through the year 2100 using a cohort model with birth, death and migration assumption made for various age groups. And the per capita water use rate of 160

subordinated to the priority dates of specific State Water Permits held by the Secretary of the Interior that supply the projects. The NGWSP would be served under water permits from Navajo Reservoir with a 1955 date and from flows arising below Navajo Dam with a 1968 date. The NNMP would be served from the ALP Project water permit with a 1956 priority date.

43. The amount of water in the Partial Final Decree for DCMI water use is less than the DCMI claim, and the effective priority dates are more junior. The only "new" water in the Partial Final Decree is the municipal water supply for the NGWSP with a 1955 priority date for water supplied by Navajo Reservoir and a 1968 priority date for water supplied by direct flows below Navajo Dam.

Heavy Industrial and Commercial Activity.

44. The Heavy Industrial and Commercial Activity claim prepared by the United States on behalf of the Navajo Nation is based on mining, energy production, oil and gas production, food processing and numerous miscellaneous uses. The historic precedent for these uses is self-evident. These types of uses have been on-going in the region for more than 100 years. More than 80 percent of New Mexico's energy production is in this region. The experts report that the Navajo Nation has 40 million tons of uranium, 4 billion tons of coal, and millions of barrels of oil. Based on the analysis of the federal experts, the claim for Heavy Industrial and Commercial Activity is 100,659 acre-feet per year for the diversions and 60,883 acre-feet per year for the depletions.

45. By contrast, the Partial Final Decree does not explicitly include *any* water based specifically on heavy industrial uses, including uses on the Navajo Reservation. The decree does not include the water used by BHP at the Four Corners Power Plant and Navajo Mine (35,421

irrigated acres is 79,601 acre-feet per year for the total diversion and 24,226 acre-feet for the total depletion. The staff with the Interstate Stream Commission calculated that the impact of the historic irrigation on the flow of the San Juan River is approximately 1,200 acre-feet per year. These irrigation claims are based on historic uses are not based on a PIA determination.

49. The Partial Final Decree for the Hogback and Fruitland Projects includes only 66,730 acre-feet per year for the total diversion and 29,250 acre-feet per year the for total depletion. The Decree includes 21,793 acre-feet for at site depletions for the tributary irrigation.

50. The unit diversion rates in the claim are based on the observed low irrigation efficiency of the irrigation projects. Historic BIA records suggest that these projects have had very low irrigation efficiencies in the past. Based on these historic records, instead of diverting 1 cfs per 40 acres as is typically assumed in New Mexico, the Navajo projects may have been diverting 1 cfs per 21 acres. Using this unit diversion rate, the total peak diversion would be much greater than the 321 cfs used for the Partial Final Decree.

51. The Settlement Agreement and the Proposed Final Decrees reflect numerous compromises by the Navajo Nation. The resulting diversion rates described in the decree reflect one of these compromises. Some of the objections to the settlement are based on the fact that a portion of the Fruitland Project is in an executive order area that would result in an 1880 priority date instead of an 1868 priority date. However, assigning the historic unit diversion rate just to the lands within the irrigation lands within the 1868 Treaty Area could result in a total diversion rate in excess of 400 cfs. By contrast, the Partial Final Decree includes a diversion rate for both irrigation projects of only 321 cfs. In addition, the settlement includes authorization for expenditures to rehabilitate the Navajo and non-Navajo irrigation projects. This rehabilitation

55. For NIIP, the Partial Final Decree includes significantly more diversion than the claim, and slightly less depletion. However, the Settlement Documents include a number of terms and conditions that further define and clarify the use of NIIP water. The Navajo Nation retains the statutory right to divert 508,000 acre-feet of water for irrigated agricultural purposes. Through the Settlement the Navajo Nation gains much more flexibility on how that water can be utilized. In exchange for the greater flexibility, the Navajo Nation agreed to some limitations when the type of use or place of use is changed.

Future Irrigation.

56. The Future Irrigation Claim prepared by the United States on behalf of the Navajo Nation (excluding the Navajo Indian Irrigation Project) includes 189,628 acre-feet per year of diversion, and 153,781 acre-feet per year of depletion. The federal evaluation includes all of the components of a Practicably Irrigable Acreage (PIA) analysis. Tens of thousands of arable acres were identified, the water requirements of the recommended crops were calculated, a proposed irrigation project was designed, the cost for that system was determined, the economic benefits of the potential crops were assessed, and the water supply was modeled. The result of the federal analysis was that approximately 50,000 acres could be categorized as practicably irrigable. The multi-discipline inputs that went into this analysis are reasonable. A similar analysis by Natural Resources Consulting Engineers in 2006 on behalf of the Navajo Nation also demonstrated that tens of thousands of acres could be categorized as practicably irrigable.

57. Based on the analysis conducted by the federal experts, the design flow rate at the turn outs is approximately 8.0 gallons per minute per acre. The aggregate turn out design flow rate is 390,404 gpm, or 869 cfs. Depending on the system efficiency, the instantaneous peak

diversion requirement may exceed 900 cfs. The federal experts proposed off-stream storage to reduce shortages during the summer low flow periods.

58. Early in the settlement process the Navajo Nation team presented qualitative evidence that demonstrated that the Navajo Nation had suitable natural resources to make a significant PIA claim possible. Subsequent work by the federal experts and by Natural Resources Consulting Engineers demonstrated that this presumption was, and remains, correct. The Navajo and State teams recommended to their respective leadership that they should not spend hundreds of thousands, or possibly millions of dollars to better articulate how significant and how disruptive that claim could be. Instead the teams recommended spending what limited resources they had on solving real problems that real people have in the basin.

59. The resulting settlement is premised on solving real problems. The Proposed Final Decrees do not include rights to develop additional irrigation acreage in the future other than for the unfinished portion of NIIP, as authorized by Congress. There are no rights to develop future irrigation based on PIA.

Subordination of the Navajo Nation's Priority date.

60. The first treaty between the Navajo Nation and the federal government executed in 1849 established the beginnings of what are today the lands reserved for a Navajo homeland. The Treaty of 1849 reflects the first federal assurance of reserving land for a Navajo homeland, and the Navajo Nation could assert that as a potential priority date, if not earlier based on various legal theories concerning aboriginal occupancy. The priority date for *all* the water claimed on behalf of the Navajo Nation by the United States is time immemorial.

61. In the Partial Final Decree, almost 90% of the Navajo Nation's water uses are subordinated based on the priority date associated with the State water permits held by the

shortages for water users with Navajo Reservoir and San Juan-Chama Project water delivery contracts.

Consistency with New Mexico's Upper Colorado River Basin Compact Apportionment.

67. The claim prepared by the United States on behalf of the Navajo Nation included 920,745 acre-feet of diversion and 591,401 acre-feet of depletion with a very senior priority date. Based on the most recent hydrologic determinations there may be approximately 669,000 acre-feet per year of depletion apportioned for use within the State of New Mexico in the Upper Colorado River Basin. The Proposed Final Decrees include only 334,542 acre-feet of depletions. That amount is less than 60 percent of the depletions included in the claim.

68. The Navajo claim by itself does not have to exceed 669,000 acre-feet per year to be extremely disruptive. The State is already approaching the depletion limitation, and within a few decades may reach it. At that time in the future, the Navajo claim, even if it is significantly smaller than the claim put forward by the United States, would displace existing non-Navajo water users on the San Juan River in New Mexico. This settlement does not entirely eliminate the possibility of a downstream Lower Basin Compact call impacting New Mexico water users. But the Settlement significantly reduces the likelihood that those impacts would be triggered as the result of the Navajo Nation claim.

69. As demonstrated in the 2007 Hydrologic Determination and affirmed by the Upper Colorado River Commission and the Secretary of the Interior, sufficient water is reasonably likely to be available to fulfill the settlement contract for the Navajo Nation's uses in New Mexico from Navajo Reservoir.

Reduction in potential diversions of the Hogback and Fruitland Irrigation Projects.

70. The claim prepared by the United States on behalf of the Navajo Nation for the Hogback and Fruitland Projects includes diversions in excess of 130,000 acre-feet per year. The claim did not specify diversion rates for these projects. Due to the low observed irrigation efficiency, as reported in historic BIA records, the historic diversion rates of these projects could theoretically exceed 600 cfs with a very senior priority date.

71. The Partial Final Decree limits the irrigation project diversions limits the maximum rate that water can be diverted at any point in time ("maximum instantaneous diversion rate") to the same per-acre diversion rates that were used in the Echo Ditch decree. The resulting maximum instantaneous diversion rates for these projects are 221 and 100 cfs, respectively. Without the Settlement, the Navajo Nation could secure as its water right the historic maximum instantaneous diversion rates ranging from 524 to 1,209 cfs. As incorporated in the Partial Final Decree, the Crop Irrigation Requirements, the Field Diversion Requirements and the Project Diversion Requirements are essentially consistent with the Echo Ditch Decree methodologies. All of these values are significantly less than the claim.

72. The Settlement includes funding for the rehabilitation of these irrigation projects which should make it possible to irrigate these lands with less total diversion. Rehabilitation of these historic irrigation projects is anticipated to reduce the diversion demands for these projects and, if successful, the maximum diversion rate for the Fruitland Project may be further reduced to not less than 83.4 cfs. The Settlement also includes funding to assist the non-Navajo ditches to be able to divert water during periods of lower flows on the San Juan River. These measures all reduce potential conflicts between the Navajo and non-Navajo ditches.

Provision of an Alternative Water Supply for Hogback and Fruitland Irrigation Projects.

73. When the Settlement Agreement was made public in 2003, the non-Navajo irrigators in the basin expressed reservations that with administration of the San Juan River the senior Navajo irrigation rights could result in shortages on their irrigation systems when the flows in the river are insufficient to meet all diversion demands. This concern was well founded. Prior to the construction of Navajo Reservoir, the Indian agents reported that the Navajo irrigation projects frequently suffered shortages due in part to upstream non-Navajo irrigation diversions. Modeling by the staff of the ISC demonstrates that shortages may have occurred in the past, and shortages could occur in the future during approximately one out of every two years. The Settlement Agreement was modified so that the Navajo Nation will utilize up to 12,000 acre-feet of storage water from the Navajo Reservoir during times when the flows in the river are inadequate to meet the demands of the irrigation projects. The Office of the State Engineer has concluded that this Alternative Water Supply reduces the frequency of shortages from approximately one year in two to approximately one year in twenty. That frequency of shortage for the junior water rights is, statistically speaking, reduced to the same frequency as if the Navajo irrigation projects were not there at all.

No development of future irrigation, other than the completion of NIIP.

74. Experts for the United States identified approximately 50,000 acres of feasible irrigable acreage that could be developed in the future not associated with the NIIP and the Hogback and Fruitland Irrigation Projects. To illustrate the potential impacts of the future projects one can compare the seasonal diversion rates of the claims verses the settlement. Based on the crop water requirements the future irrigation demands exceed 700 cfs during June and

small amount of additional uses. We informed the State Engineer and the Navajo Nation of this settlement negotiation limitation early in the process.

The Navajo Nation's Existing or Previously Authorized Water Project Uses: the Hogback and Fruitland Projects, Navajo Indian Irrigation Project and Animas-La Plata Project

16. The Hogback and Fruitland Projects are existing Navajo irrigation projects in the San Juan River valley below Farmington, New Mexico. Construction of the Hogback Canal began in 1903, and about 767 acres were irrigated under the canal in 1908. Several siphons and extensions of the canal were completed by 1960. The canal was connected also to the Cudei area in 2002. Irrigation in the Cudei area began in as early as 1900. Based on BIA records, the maximum amount of acres irrigated within the existing Hogback Project boundary, including the Cudei area, in any one year historically was about 6,327 acres in 1966.

17. Construction of the Fruitland Canal began in 1937 to replace, consolidate and expand the service area of smaller irrigation ditches on Navajo lands from Farmington to the Cambridge area. Irrigation within portions of the Fruitland Project area was apparently occurring by about 1900. Based on BIA records, the maximum amount of acres irrigated within the existing Fruitland Project boundary, including the Cambridge area, in any one year historically was about 3,120 acres in 1965.

18. By 1993 the BIA had issued Land Use Permits for farming to the Navajo Nation or to individual members of the Nation for irrigation uses on the Navajo Indian Reservation from the San Juan River for a total of 8,829 acres under the Hogback-Cudei ("Hogback") Project and a total of 3,335 acres under the Fruitland-Cambridge ("Fruitland") Project as identified by the 1993 BIA Crop Utilization Survey. Either the BIA or the Navajo Nation could rehabilitate or expand irrigation facilities on the Hogback and Fruitland Projects.

19. The Navajo Nation's diversion from Navajo Reservoir of up to 508,000 afy for irrigation of 110,630 acres on the Navajo Indian Irrigation Project ("NIIP") was authorized by Act of Congress on June 13, 1962 (Public Law 87-483). Irrigation on the NIIP began in 1976, and has increased over time as project construction advances. Based on BIA records, the maximum amount of acres irrigated on the NIIP in any one year through 2010 was 64,787 acres. The maximum diversion amount for the NIIP in any one year through 2010 was 209,947 acre-feet per year ("afy").

20. The Animas-La Plata Project ("ALP") was originally authorized in 1968 by the Colorado River Basin Projects Act. The Colorado Ute Settlement Act Amendments of 2000 authorized for construction a downsized version of the ALP. The Navajo Nation's authorized uses from the Animas River under the downsized ALP amount to a depletion of 2,340 afy, which is less than the amount of Navajo Nation water use under the project previously planned prior to downsizing of the project. Lake Nighthorse, the ALP storage reservoir, was filled in 2011.

Settlement Discussions and Negotiations

21. Governor Johnson and President Hale in July 1997 signed the "Memorandum of Agreement between the State of New Mexico and the Navajo Nation to Commence Discussions to Determine the Water Rights of the Navajo Nation in the San Juan River Stream System through Negotiation" (See **Exhibit No. 2**). Subsequent meetings were held to discuss the feasibility of entering into formal water rights settlement negotiations. I actively participated in these initial settlement discussions on behalf of the State, as did Mr. Mutz and counsel for the OSE. The participants for the State and the Navajo Nation in these initial settlement discussions were largely the same as those in the exploratory meetings. These initial settlement discussions were facilitated by Ms. Lucy Moore.

per day (gpcd). Despite uncertainty surrounding future supply sources, usage, and any changes in use associated with domestic water landscaping, household size factors, and possibly water-saving technological improvements the estimate of 160 gpcd is a reasonable medium estimate of future water needs for these purposes.

12. Based on water requirements of 160 gallons gpcd, the water requirement for the Navajo Nation within the San Juan River Basin is calculated to be 36,575 acre-feet per year.

13. I certify that I am the principal author of the following materials summarized above, that I have reviewed the contents of these materials, and that the information contained therein is true and correct, and reflects the best estimate of future water needs based on the information available at the time of the report:

- U.S. Hydrographic Survey, Appendix C (concerning the present Navajo Population in the SJRB) (December 2010);
- U.S. Statement of Claims, Appendix BB (concerning the future Navajo Population in the SJRB) (December 2010); and
- U.S. Technical Reports, Exhibit B (*Future Navajo Nation Population and Domestic, Commercial, Municipal and Light Industrial Water Use in the San Juan River Basin*) (January 2011).

greene Affidavit filed 4/15/13